Local Biodiversity Action Plan for Nottinghamshire

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The Nottinghamshire Biodiversity Action Group

(A partnership of the eight organisations listed below)

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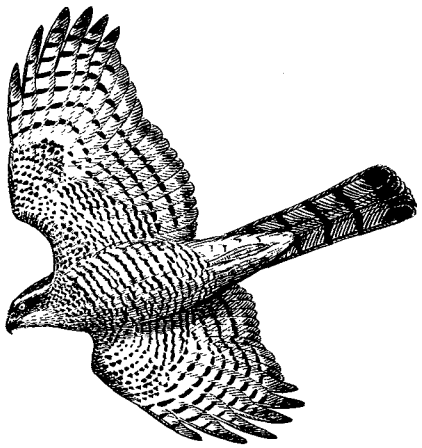
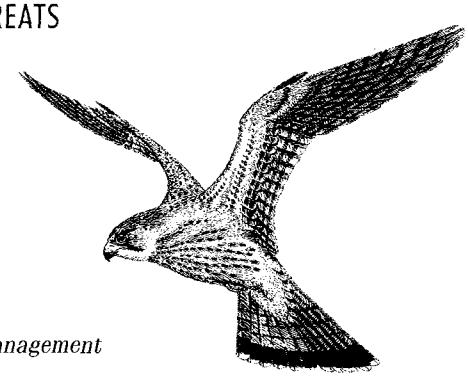
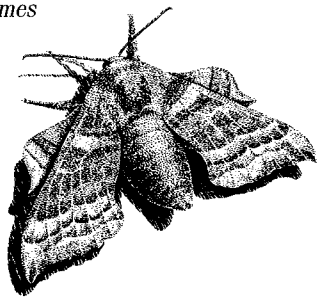
Contents



Release date: 1998





Release date: 1998

References are indicated by numbers in the text, and listed at the end of each section.

Release date: 1998

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This document has been prepared by a partnership of eight organisations, which together make up the Nottinghamshire Biodiversity Action Group. The work was co-ordinated by a Biodiversity Officer (Jo Taylor), under the guidance of a steering group of representatives from the partner organisations:

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Ian Butterfield	ENGLISH NATURE
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Phil Keynes	INTER-AUTHORITY SUSTAINABILITY WORKING GROUP
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Alison Fraser and Gareth Broome	NOTTINGHAMSHIRE COUNTY COUNCIL
Richard Brown and Julian Branscombe	NOTTINGHAMSHIRE WILDLIFE TRUST
Tim de Winton (chair)	ROYAL SOCIETY FOR THE PROTECTION OF BIRDS

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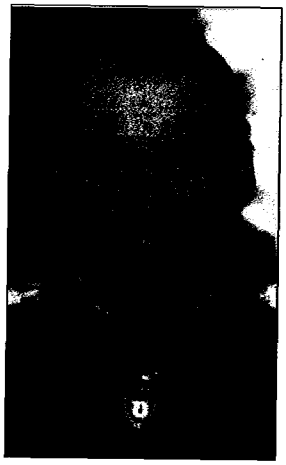
ENGLISH NATURE
MARKS AND SPENCER (NOTTINGHAM BRANCH)
NOTTINGHAM CITY COUNCIL
NOTTINGHAMSHIRE COUNTY COUNCIL
NOTTINGHAMSHIRE WILDLIFE TRUST
THE ROYAL SOCIETY FOR THE PROTECTION OF BIRDS
SEVERN TRENT WATER LTD

A large number of individuals and organisations have been involved in the production of this plan - too many to list here. The Biodiversity Action Group is especially grateful to the authors of habitat and species action plans and priority lists, and to those who have commented on draft sections of this document at various stages. We would also like to thank all those who took part in the consultation process, either by commenting on the consultation document, or by attending the 1997 Natural Environment Forum.

Release date: May 1998

FOREWORD



I feel very privileged to be able to live on the Hodsock Estate, where for many generations the fields, woods and gardens have been lovingly tended with both economics and wildlife in mind.

Biodiversity is quite simply our wealth of wildlife. It encompasses the incredible variety of our wild animals and plants, and the habitats such as woodland, grassland or wetland which support them. We need our biodiversity to survive, but our activities are increasingly degrading and destroying it on a global scale. The need to reverse this trend is just as urgent in Nottinghamshire as in the Amazonian rainforest or on the plains of East Africa.

In 1992, when the Prime Minister and over 150 other heads of state signed the United Nations Convention on Biological Diversity in Rio de Janeiro, they did so to express a shared belief that action must be taken to halt the world-wide loss of biodiversity. With the publication of the UK's first Biodiversity Action Plan in 1994, so began a new more targeted approach to nature conservation, with the aim of integrating biodiversity objectives into all sectors of society.

By publishing this Local Biodiversity Action Plan for Nottinghamshire we are recognising our key role in global and national biodiversity conservation, and taking our first step towards fulfilling it. The plan is just the start of a process that will continue over

Release date: May 1998

1 INTRODUCTION

1.1 WHAT IS BIODIVERSITY?

1.1.1 Biodiversity is the variety of life around us, from mammals, birds and plants to bacteria and fungi. It goes beyond the differences between species to the genetic and physical variation within them, and to the collections of species which form different natural habitats. Article 2 of the United Nations Biodiversity Convention[1] defines biodiversity as:

The variability among living organisms from all sources, including: inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

1.1.2 Biodiversity conservation is not just about rare and threatened plants and animals, but encompasses the whole of the natural world, from the commonplace to the critically endangered.

1.2 WHY IS IT IMPORTANT?

1.2.1 The 20th century has seen an unprecedented increase in the pace and extent of human intervention in the natural world, resulting in the accelerated loss of biodiversity on a global scale. This has led to widespread concern that biodiversity must be treated more seriously as a global resource to be protected and conserved. We must be clear why biodiversity matters if we are to translate this concern into action.

1.2.2 Every species is dependent on others for its survival, and the complex interactions between them cycle water, oxygen, carbon, etc, acting as the Earth's life support system. Our

understanding of how these systems work is too poor to know the full impact of our actions, but the link between the loss of forests and effects such as global warming and sea level rise is a clear signal that we must protect biodiversity to ensure our own survival.

1.2.3 At a more local level, natural systems have other functions. Flood plains and washlands, for example, act as release valves for rivers in flood, while woods and hedges form windbreaks and prevent soil erosion. The living world absorbs and breaks down many of our poisons and wastes, so by protecting biodiversity we are protecting ourselves.

1.2.4 Nature conservation is often seen as a constraint to economic development. However, this is a misconception, as policies and activities which support conservation can also be good for the local economy. Wildlife is increasingly being recognised as an important output of rural land use, and this has already resulted in environmental schemes which have the added benefit of supporting rural employment and income. Land uses which maintain the quality of the environment also have wider benefits to the economy, by helping to promote tourism.

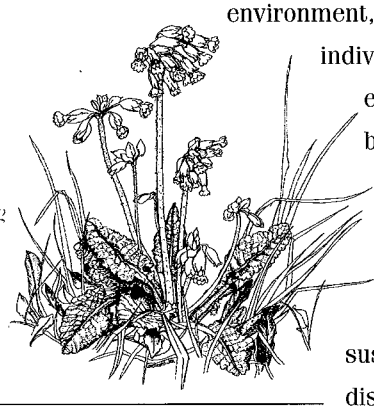
1.2.5 Many species can be made into products for human use, and hence have direct economic value, such as fish, cereals, timber trees or the ingredients of some medicines (∫ of the world's medicines originate from plants).

1.2.6 Wild relatives of crop and domestic species provide the genetic diversity which enables new varieties to be developed. Wild versions of crop plants are increasingly being found to have useful genes making them resistant to disease.

These genes can now be transferred to the domestic plant, creating a new disease resistant variety.

1.2.7 If all members of a species were identical, then a disease, or a change in their environment, could wipe out a whole population overnight. The more variety there is, the more likely it is that some individuals will have the characteristics necessary to survive. Small isolated populations are less variable, and therefore more vulnerable to extinction. For this reason we need to take a wider approach to conservation, not just concentrating on small protected areas.

1.2.8 Increasingly, conservationists are stressing the importance of encouraging only those animals and plants from local stock. This is because individuals of a species often vary according to where they come from - Nottinghamshire cowslips are different from Cornish cowslips, for example. Local individuals are adapted to the local environment, and introducing individuals from elsewhere which breed with them may destroy this adaptation. This may result in greater susceptibility to disease or a lack of hardiness, and in the long term a lack of genetic diversity may hinder the natural process of evolution.



Cowslip, one of our most colourful and popular wild flowers, is declining in the County.

1.2.9 The moral and aesthetic reasons for conserving biodiversity are less tangible, but of great importance. Nature conservation has become a major public issue for reasons that cannot

easily be measured in economic terms. We conserve species and habitats because they are beautiful and enrich our lives. Our culture is closely linked to our landscapes and wildlife, and these contribute significantly to our quality of life. Future needs and values are unpredictable - we cannot know which species will be important to people in the future. We must accept that with the power we are able to exert over nature comes the need to use that power responsibly.

1.3 THE GLOBAL CONTEXT

1.3.1 In June 1992, the largest ever gathering of world leaders met in Rio de Janeiro for the United Nations 'Earth Summit', reflecting a world-wide concern that human activities are changing and destroying the natural environment on an ever-increasing scale. Out of the summit came the UN Convention on Biological Diversity[1], which has now been signed by over 170 countries, including the UK. It is one of a family of initiatives addressing such issues as climate change and the management of the world's forests. Signatories recognise that action must be taken to halt the global loss of species and that each country has the primary responsibility to conserve and enhance biodiversity within its own jurisdiction. Article 6A of the Convention requires each country to:

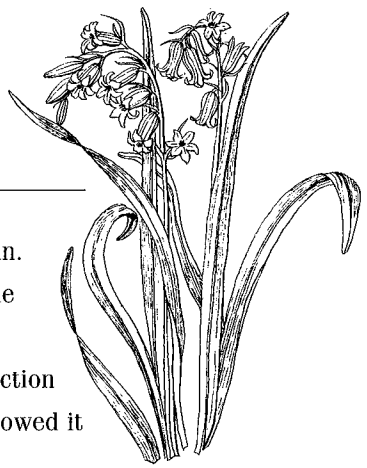
Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

1.3.2 Another initiative to come out of the Convention was Agenda 21[2], a global programme for sustainable development (development which meets our own needs without compromising the ability of future generations to meet theirs). The Agenda

seeks to integrate environmental, economic and social factors, with the emphasis on action at a local level (Local Agenda 21). Biodiversity conservation is a key aspect of the Local Agenda 21 process.

1.4 THE NATIONAL CONTEXT

1.4.1 In 1993, a document called 'Biodiversity Challenge'[3] was produced by a consortium of British environmental groups to help stimulate the preparation of a national Biodiversity Action Plan. Later the same year the Government produced 'Biodiversity: the UK Action Plan'[4], and in 1995 followed it with 'Meeting the Rio Challenge'[5], the first report of the Biodiversity Steering Group. This report identifies species and habitats of international and national importance, with costed action plans for a selection of these[6]. Many more plans are in production. Generic measures for the conservation of the whole of the UK's biodiversity are also included. The Steering Group report was formally endorsed by the Government in 1996[7], and the action plans became official government guidance. The overall goal of the UK Biodiversity Action Plan is:



✸ *The UK holds 25% of the world's bluebells, making the species a high priority in the UK Biodiversity Action Plan.*

To conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms.

1.5 WHAT IS A LOCAL BIODIVERSITY ACTION PLAN?

1.5.1 If the UK Biodiversity Action Plan[4] is to be successful, it requires some means of ensuring that it is translated into effective action at a local level. Local Biodiversity Action Plans (LBAPs) are seen as the means whereby this can be achieved.'Meeting the Rio Challenge'[5] summarises this as:

The purpose of Local Biodiversity Action Plans is to focus resources to conserve and enhance biodiversity by means of local partnerships, taking account of both national and local priorities.

1.5.2 The functions of Local Biodiversity Action Plans are:

- To ensure that national targets for species and habitats, as specified in the UK Action Plan, are translated into effective action at the local level.
- To identify targets for species and habitats appropriate to the local area, and reflecting the values of people locally.
- To develop effective local partnerships to ensure that programmes for biodiversity conservation are maintained in the long term.
- To raise awareness of the need for biodiversity conservation in the local context.
- To ensure that opportunities for conservation and enhancement of the whole biodiversity resource (not just rare and threatened species) are fully considered.
- To provide a basis for monitoring progress in biodiversity conservation, at both local and national levels.

1.5.3 A Local Biodiversity Action Plan is both a product and a process. It will evolve over time as knowledge improves, action plans are implemented and targets revised. These plans will eventually influence all national and local planning, determining strategies and policies throughout all sectors. They herald a new integrated approach to nature conservation, at both national and local levels.

1

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1 United Nations Conference on Environment and Development (UNCED). (1992). *Convention on Biological Diversity.* United Nations

2 UNCED. (1992). *Agenda 21.* United Nations

3 Wynne, G, Avery, M, et al. (1993). *Biodiversity Challenge* (1st edition). RSPB, Sandy

4 Department of the Environment. (1994). *Biodiversity: The UK Action Plan.* Cm 2428. HMSO, London

5 UK Biodiversity Steering Group. (1995). *Biodiversity: The UK Steering Group Report, Volume 1: Meeting the Rio Challenge.* HMSO, London

6 UK Biodiversity Steering Group. (1995). *Biodiversity: The UK Steering Group Report, Volume 2: Action Plans.* HMSO, London

7 UK Government (1996). *Government Response to the UK Steering Group Report.* Cm 3260. HMSO, London

2 THE NOTTINGHAMSHIRE APPROACH

2.1 WHY A LOCAL BIODIVERSITY ACTION PLAN FOR NOTTINGHAMSHIRE?

2.1.1 It is easy to think of biodiversity as being somewhere else, and someone else's problem. This is not true. In common with the rest of the UK, and indeed the rest of the world, Nottinghamshire is losing its wild species and habitats at an alarming rate, and something must be done if this trend is not to continue.

2.1.2 Nottinghamshire has its own special character, and its own unique variety of species and habitats. Our Local Biodiversity Action Plan attempts to reflect this local distinctiveness by setting priorities and objectives appropriate to the County, and reflecting the needs and wishes of local people.

✸ *Ling heather: Nottinghamshire today has 90% less heathland than it did in the 1920s.*

2.1.3 A large number of people in Nottinghamshire are involved in nature conservation, and over 1,000 of these are volunteers. This is reflected in the number and diversity of voluntary groups which exist. Perhaps the greatest strength of the biodiversity approach is its emphasis on partnership, and this plan has, by definition, a shared agenda for conserving the biodiversity of Nottinghamshire. It will provide a set of guiding principles and clearly defined targets which will allow voluntary groups, Local Authorities and

Government agencies to work together towards common goals, enabling limited resources to be channelled to where they will be most effective.

CONSERVATION VOLUNTEERS - EXAMPLES

- Members of voluntary committees
- Tree wardens
- Parish path wardens
- Nature reserve wardens
- Tree donors
- People doing practical work
- Bird recorders and ringers
- Bat wardens
- Badger advisors
- Fundraisers

2.1.4 Conserving the County's biodiversity cannot be done by environmental groups in isolation. Every sector of society can have an impact on biodiversity, and biodiversity conservation therefore requires widespread involvement and support, particularly from land-owners and managers. The development and implementation of a Local Biodiversity Action Plan is a means by which this support can be harnessed.

2.2 THE MAIN ELEMENTS OF A LOCAL BIODIVERSITY ACTION PLAN

2.2.1 The Nottinghamshire Local Biodiversity Action Plan is an ongoing process comprising a sequence of steps which form a long-term strategy. The process has been carried out in accordance with guidance produced by the UK Biodiversity Steering Group[1]. The main components are as follows overleaf:

level is being carried out on costing action plans, and eventually, it is hoped that all Nottinghamshire plans will include costings.

On the initial publication of this document, eleven action plans were included. Eventually all priority habitats will have plans produced for them, and species action plans will be written for those plants and animals whose specific requirements cannot be catered for through habitat plans.

As part of the consultation process, a questionnaire was used to determine which species and habitats are considered to be characteristic of Nottinghamshire, and which are felt by local people to be priorities for conservation. The results of this survey have been used to identify 'flagship' species and habitats that may be used to encourage public participation in conservation. A public awareness programme, and a series of county-wide and community projects will follow the publication of this plan.

This document is part of a whole new approach to nature conservation, which to be truly effective will require far-reaching changes in policy and practice. **Section 6** sets out the roles and responsibilities of the partners, and outlines key implementation mechanisms. The aim is to provide a framework within which more detailed action programmes can be formulated, and the process will evolve over time as actions are implemented and knowledge improves. There are issues, such as the conservation of agricultural biodiversity (rare breeds and varieties), which have not been addressed by this document, and it is intended that they will be addressed in future updates. **The Biodiversity Action Group welcomes comments on this document, which will be regularly reviewed and updated as the process continues.**

Release date: May 1998

EXECUTIVE SUMMARY

This Local Biodiversity Action Plan has been produced by the partnership of organisations which form the Nottinghamshire Biodiversity Action Group. Many other groups and local experts have contributed, and the targets and actions have been approved by all key partners. The format and content are consistent with Government guidance.

A review of biological records has resulted in a disturbingly long list of plants and animals of conservation concern in Nottinghamshire (**Appendix A**). Many of these are rare, declining or under threat due to the loss of their habitats, and a list of priority habitats for protection and restoration is given in **Appendix B**

Sections 1 and 2 set out the background to the initiative, and explain why we should be concerned about the loss of our wild plants and animals. **Sections 3 and 4** review past and current influences on biodiversity in Nottinghamshire, consider the threats from key sectors such as energy and transport, and explore the opportunities available for conservation. A series of generic actions for biodiversity are presented in **Section 5**.

The most important sections of this document are the action plans for key species and habitats (**Sections 7-8**), which set out targets to be met and how these are to be achieved. Wherever possible, those responsible for leading the implementation of each action are identified, and targets are timescaled. Progress will be monitored, and plans updated and revised where necessary. Research at a national

Release date: May 1998

YOUNG ENDORSEMENTS

Children at Burton Joyce Primary School
were asked...

Why do we need lots of animals and plants?

This is what they said:

We couldn't breathe without plants. They also make the environment look nice. They provide us with food and the animals too. The animals help plant seeds. Without them, there would be a complete catastrophe. We wouldn't be able to build without trees - for foundations and stuff. If we didn't have animals it would be horrible because we wouldn't be alive, because we're animals.

ANDREW STEPHENSON (AGED 11)

They help the environment. The trees breathe for us.

HANNAH CROFT (AGED 9)

Because they give us air and they make your garden look nice.

JAMES HARDIE (AGED 8)

We wouldn't like houses all over the place and no trees, because the trees give us air.

MATTHEW MARSH (AGED 8)

We need animals to look at to see what they're doing.

JAMES CHARLESON (AGED 5)

...so the world looks nice.

TOM PARKINSON (AGED 5)

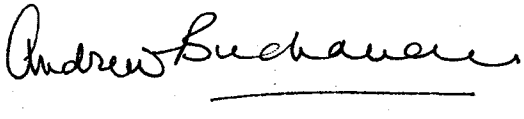
Release date: May 1998

many years, and the document itself will grow and evolve as actions are implemented and our knowledge improves.

Protected areas such as nature reserves will continue to play an important role in biodiversity conservation, but we can no longer rely on these areas alone to safeguard our natural heritage, and the emphasis is now firmly on action in the wider environment. This plan identifies those species and habitats of conservation concern in Nottinghamshire, and provides a clear system of priorities and targets which can be followed by all those in the County with an influence on nature conservation. Its production has resulted from consensus and partnership between government agencies, local authorities, non-governmental organisations and individual enthusiasts.

While government agencies and environmental bodies can take the lead, everyone in the County has a part to play in biodiversity conservation. Raising awareness of the issues and encouraging local and individual action is therefore vital to the success of this initiative. Nottinghamshire's Local Biodiversity Action Plan provides a framework for action, but ultimately, whether our grandchildren live in a County richer or poorer in wildlife depends on us all.

I am very pleased to be asked to lend my support to this initiative by contributing this foreword.



Sir Andrew Buchanan Bt JP
Lord Lieutenant of Nottinghamshire

- Establish a plan partnership
- Agree broad objectives
- Review the County wildlife resource
- Establish a database
- Identify priorities within the national and local context
- Set specific targets and proposals for action
- Identify delivery mechanisms and sources of finance and advice
- Publish the plan and implement the agreed programme of action
- Establish a long-term monitoring programme to measure the effectiveness of the plan in achieving national and local targets

2.3 THE PLAN PARTNERSHIP

2.3.1 The core of the plan partnership is the Biodiversity Action Group (BAG), formed in 1995 from representatives of the following organisations:

- The British Trust for Conservation Volunteers
- English Nature
- The Farming and Wildlife Advisory Group
- The Inter-authority Sustainability Working Group
- Nottinghamshire Biological and Geological Records Centre
- Nottinghamshire County Council
- Nottinghamshire Wildlife Trust
- The Royal Society for the Protection of Birds

2.3.2 This group provided joint funding for the employment in 1997 of a Biodiversity Officer to coordinate the production of the Local Biodiversity Action Plan, and has acted as steering group for the project. Many other organisations have also contributed to the production of this document by participating in the consultation, writing habitat and

Release date: 1998

species action plans or providing information. A list of these organisations can be found in Appendix F.

2.3.3 The successful development and implementation of the Nottinghamshire Local Biodiversity Action Plan will depend on partnership between a wide range of organisations representing a variety of interests. All sectors of the community have a role to play in both the development and delivery of the objectives, although this role may come into effect at different stages of the process.

2.4 PRINCIPLES AND OBJECTIVES

2.4.1 OVERALL GOAL

The ultimate goal of the Nottinghamshire Local Biodiversity Action Plan is to conserve and enhance the County's unique variety of wild species and natural habitats, and hence to contribute to the conservation of both UK and global biodiversity.

2.4.2 UNDERLYING PRINCIPLES

The principles underlying both the UK Biodiversity Action Plan[2], and this Local Biodiversity Action Plan for Nottinghamshire are as follows:

- Where biological resources are used, such use should be sustainable.
- Wise use should be ensured for non-renewable resources.
- The conservation of biodiversity requires the care and involvement of individuals and communities as well as governmental processes.
- Conservation of biodiversity should be an integral part of both central and local Government programmes, policy and action.
- Conservation practice and policy should be based upon a sound knowledge base.
- The Precautionary Principle (see Box 2 overleaf) should guide all decisions where environmental considerations are involved.

Release date: 1998

2.4.3 OBJECTIVES

1. To conserve and where appropriate to enhance Nottinghamshire's unique variety of wild species and natural habitats, in particular:

   a Internationally and nationally important species and habitats;

   b Species and habitats that are characteristic of Nottinghamshire and its distinctive Regional Character Areas (section 3.4);

   c Species and habitats that are rare or threatened in the County.

2. To increase public awareness of, and involvement in, conserving biodiversity.

3. To contribute to biodiversity conservation on a national, European and global scale.

THE PRECAUTIONARY PRINCIPLE

The natural world is incredibly complex, and our knowledge of it, though improving all the time, is still extremely limited. Decisions concerning the environment therefore often have to be made in the absence of accurate information. This, coupled with the difficulty of applying economic values to environmental assets such as biodiversity, tends to lead to the undervaluing of natural resources.

The Precautionary Principle states that where there is a significant risk of environmental damage from an activity, the presumption should always be against it, even if conclusive scientific evidence is unavailable. The principle was adopted by the United Nations at Rio, and endorsed by the UK Biodiversity Action Plan[2].

2.5 REVIEWING THE RESOURCE AND ESTABLISHING A DATABASE

2.5.1 A review of biological records for the County was carried out by the Biodiversity Action Group members, in collaboration with other local and national experts. The aim of this was to determine which species and habitats are

Release date: 1998

present in the County, and establish a draft list of priorities.

2.5.2 The main holder of species and habitat records for the County is the Nottinghamshire Biological and Geological Records Centre. The Centre is currently entering all its records into a central database. We are fortunate in Nottinghamshire that a large amount of information on biodiversity has been collected over many years. However, in common with the rest of the UK, and indeed the rest of the world, we still do not know the status of many of Nottinghamshire's species, of which there are in excess of 10,000. There is an urgent need for funding for biological recording if we are to base future decisions affecting biodiversity on adequate information.

2.6 THE CONSULTATION PROCESS

2.6.1 The basis for the initial stages of the consultation process was 'Action for Wildlife: Towards a Biodiversity Action Plan for Nottinghamshire'[3], a document produced by the Biodiversity Action Group. This described the background to the Biodiversity Action Plan approach, gave examples of species and habitat action plans, and contained the draft priority lists. The document was designed to be colourful, user-friendly, and appealing to a wide range of people. The first phase of the consultation process was in two parts: an initial approach to key organisations to gain their comments on the Biodiversity Action Group's approach to the project and to the draft lists; and a questionnaire-based survey giving individual people living in the County the chance to comment.

Release date: 1998

2.6.2 Consulting Key Organisations

If a Local Biodiversity Action Plan is to be successful, the process of writing and implementing it must involve as many organisations as possible. To this end, the Nottinghamshire plan has been produced under extensive consultation, with organisations representing a range of interests being invited to participate.

2.6.3 In July 1997, copies of the consultation document were sent out to representatives of key organisations inviting a response. To provide a means of structuring replies, each document contained a copy of the questionnaire used for the public consultation, although most organisations chose to reply by letter. The comments were utilised during the writing of this plan.

2.6.4 In November 1997, the annual Nottinghamshire Natural Environment Forum took place, to which organisations and individuals representing a range of interests were invited. The aim of the Forum was to take the consultation process a step further by discussing how the Local Biodiversity Action Plan is to be implemented. General discussions were followed by workshop sessions on community involvement, the planning system and the role of land-owners and managers. Many useful ideas and comments emerged, which will be used to guide the implementation of the plan. A list of organisations which were invited to comment, either by letter or by attending the Natural Environment Forum, can be found in Appendix F.

2.6.5 Each habitat and species action plan is produced in consultation with all those

Release date: 1998

organisations given specific responsibilities under it. Once a draft plan is completed by the author, it is circulated to all relevant consultees for comment, and then edited for inclusion in the Local Biodiversity Action Plan.

2.6.6 The Public Consultation

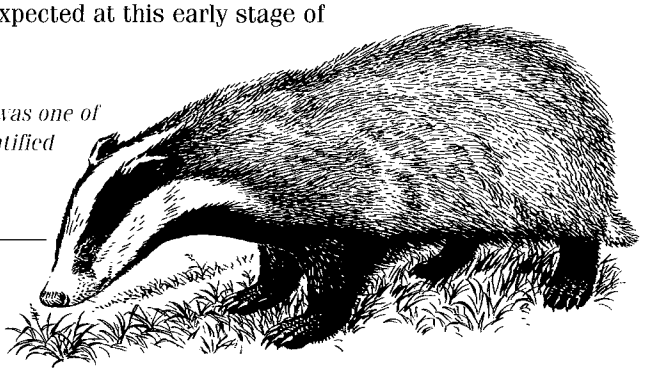
One of the central objectives of a Local Biodiversity Action Plan is to raise public awareness of, and involvement in, biodiversity conservation. As a first step in this process, it is essential that species and habitats which are important to people living in the County are given a high profile in the plan. These can then be used as 'flagships' to gain public involvement and support for biodiversity conservation.

2.6.7 In June 1997, 10,000 copies of a leaflet advertising the consultation were distributed throughout Nottinghamshire. This was achieved through the public library system, through the memberships of Biodiversity Action Group organisations, and by all the Local Authorities through leisure centres, country parks etc. The leaflet explained the background to the Biodiversity Action Plan, and contained a request form for a free copy of the consultation document. At the same time a publicity campaign was undertaken, resulting in television and radio features and a number of articles in the local press. A total of 185 requests was received, the majority of which were from 'members of the public' as opposed to formal representatives of particular organisations.

2.6.8 Each respondent was sent a copy of the consultation document, containing a questionnaire and reply paid envelope. A copy of the questionnaire may be found in

Release date: 1998

Appendix E. A total of 80 replies was received. These were from a variety of respondents, ranging from those with specialist knowledge to those with a general interest in wildlife. Many were members of the Nottinghamshire Wildlife Trust or other conservation organisations, and so had an existing interest, as might be expected at this early stage of the process.



The badger was one of the species identified as a priority by consultees.

2.6.9 The results of the questionnaire were used to identify those species and habitats which respondents felt were characteristic of Nottinghamshire, and those which they thought should be priorities in the Local Biodiversity Action Plan. Respondents were also asked which species and habitats they thought were declining or increasing in the County. These results are summarised in Appendix E. Other questions were designed to find out what respondents felt should be done to conserve biodiversity, and to ask for ideas for community conservation projects.

2.6.10 The results of the consultation were used during the preparation of this plan, and will influence the methods by which it is implemented. The 'flagship' habitats and species identified will be especially important as the basis for public awareness and involvement projects, and several already have their own habitat and species action plans. Very few species and habitats needed to be added to the priority lists as a result of the consultation,

Release date: 1998

as most of those mentioned by respondents were already listed due to their conservation status.

2.7 WRITING THE PLAN

2.7.1 Once the first phase of the consultation was over, the process of writing the Local Biodiversity Action Plan for Nottinghamshire could begin. The format used for this plan is derived from the UK Biodiversity Action Plan[2] and Biodiversity Challenge[4], and follows guidance produced by the UK Biodiversity Steering Group[1]. It is designed to enable habitat and species action plans to be updated, and new ones added, as implementation progresses and information becomes available.

2.7.2 The UK Steering Group Report[5] sets out the format for habitat and species action plans, which is explained in more detail in sections 7 and 8. These plans describe the current situation, identify the main threats to the species or habitat, set targets for conservation and restoration, and outline the action needed to achieve these targets. The targets are in all cases designed to be ambitious but realistic. They must be measurable, and give specific timescales in which they are to be achieved. The setting of targets is a two way process, since national targets for species and habitats should be reflected locally, and local targets will inform decisions at a national level.

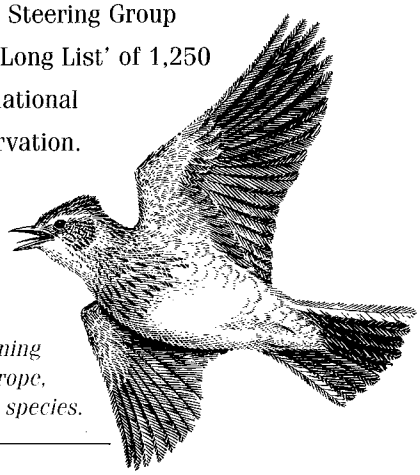
2.8 PRIORITY SPECIES

2.8.1 The biodiversity approach to conservation differs from the traditional one in that it does not concentrate only on species which are already rare. Species which are common in Nottinghamshire may be rare or declining on a national or even global scale, and we have a

Release date: 1998

responsibility to ensure that our populations of these species remain healthy. We must also safeguard common species to prevent them becoming rare in the future, especially those species which give Nottinghamshire's biodiversity its own special character.

2.8.2 The UK Biodiversity Steering Group Report[5] contains a 'Long List' of 1,250 species which are national priorities for conservation. Species which qualify under one



✸ *The skylark is declining rapidly throughout Europe, and is a UK 'Long List' species.*

or more of the following categories are included in this list:

- Threatened endemic and globally threatened species (endemic means unique to the UK);
- Species where the UK has more than 25% of the world or appropriate biogeographical population;
- Species where numbers or range have declined in the UK by more than 25% in the last 25 years;
- In some instances where a species is found in fewer than 15 10km squares in the UK;
- Species which are listed in the EC Birds or Habitats Directives, the Bern, Bonn or CITES Conventions, or under the Wildlife and Countryside Act 1981 (section 4.9 below).

2.8.3 It is important to realise that this list is not a comprehensive record of species of conservation concern, and that several thousand other species that are believed to be nationally rare or threatened have not been included. More information is needed on the

Release date: 1998

status of these species, which are mainly invertebrates, before they can be added. The Long List will therefore be reviewed as information becomes available.

The fact that a species is not on the Long List does not necessarily mean that it is not nationally important.

2.8.4 The list of species of conservation concern in Nottinghamshire (Appendix A) includes:

- All UK Long List species which are known to occur in Nottinghamshire;
- In the case of invertebrate groups where the Long List is incomplete, any nationally important species not included in the Long List;
- Species which are rare or declining in the County;
- Species which are extinct in the County, but which might be encouraged to return by habitat restoration and/or reintroduction;
- Species which were identified by the consultation as being priorities for local people or characteristic of the County (most of these were already listed due to their conservation status).

2.8.5 Because the level of information available differs markedly between groups (birds are much better recorded in the County than spiders, for example), the criteria used to select county priority species varies. The detailed criteria used for each group are described in the appropriate section of the list in Appendix A.

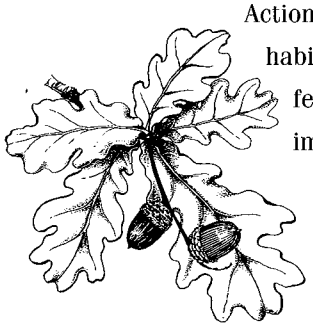
2.9 PRIORITY HABITATS

2.9.1 The UK Biodiversity Steering Group Report[5] lists thirty-nine 'key habitats' for which costed action plans have been or will be prepared. These meet the criteria overleaf:

Release date: 1998

- Habitats for which the UK has international obligations;
- Habitats at risk, such as those with a high rate of decline;
- Rare habitats;
- Habitats important for UK Long List species.

2.9.2 Of the national key habitats, fourteen occur in Nottinghamshire. In addition, the Biodiversity Action Group has identified several habitats which, although they do not feature on the national list, are important at a county level.



✸ *The ancient woodlands of Sherwood are internationally important, but only fragments of the original forest remain.*

The list of habitats of conservation concern in Nottinghamshire (Appendix B) contains:

- All UK key habitats found in Nottinghamshire;
- Habitats which are characteristic of Nottinghamshire;
- Habitats which are important for Local Biodiversity Action Plan priority species (see Appendix A);
- Habitats which, although they often have little existing wildlife value, could become valuable given appropriate restoration, and therefore are important opportunities for biodiversity conservation.

2.9.3 Eventually, it is envisaged that all priority habitats will have their own habitat action plans. It is hoped that in this way the requirements of the majority of priority species will be met. However, some species have very specific needs which cannot be catered for through habitat action plans, and for these species individual action plans are needed. The selection of the first eleven action plans to be produced was heavily influenced

Release date: 1998

by the results of the consultation, in order to give species and habitats of importance to local people a high profile in the Local Biodiversity Action Plan. These action plans will form the basis of public awareness and involvement projects, and will help to raise the profile of the initiative.

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4 Wynne, G, Avery, M, *et al.* (1995). *Biodiversity Challenge* (2nd edition). RSPB, Sandy

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Release date: 1998

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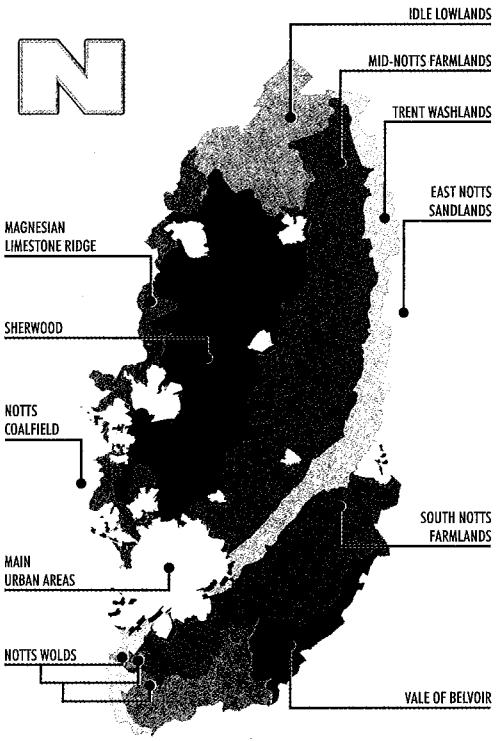
to national character areas, while five form subdivisions of the large area defined nationally as the 'Trent and Belvoir Vales'. Accompanying the County map are the 'Nottinghamshire Landscape Guidelines'[7], which provide detailed descriptions of the Regional Character Areas, and set out the actions needed to maintain and restore the distinctive character of each. The Guidelines will form the foundation for future landscape conservation work, guide planning policy and land use decisions, and act as a baseline for monitoring future change. Many of their recommendations relate directly to biodiversity conservation, since natural features and wildlife are an integral part of the landscape. Their implementation will therefore contribute to the achievement of Local Biodiversity Action Plan objectives, and vice versa.



Nottinghamshire Regional Character Areas

3.4.5 In order to be consistent with the County Landscape Guidelines, the implementation of this plan will be guided by the strategic framework of the Nottinghamshire Regional Character Areas. In this way it is hoped that

Release date: 1998

we can also meet our responsibilities under the Natural Areas programme. As the first stage in this process, Appendix C contains a list of the key Regional Character Areas and Natural Areas for each habitat and species action plan. In Appendix D a map relating Regional Character Areas to Districts enables those working at a district level to identify those action plans to which their contribution is particularly important.

REFERENCES

1 Iles, J. (1987). *Nottinghamshire - Changing Land Use and Wildlife*. Nottinghamshire Wildlife Trust pamphlet

2 Briggs, B. & Hossell, J. (1995). *The Implications of Global Climate Change for Biodiversity*. RSPB Conservation Review 9. RSPB, Sandy

3 Marquiss, R. (ed.).(1987). *The Nature of Nottinghamshire*. Barracuda Books, Buckingham

4 English Nature & Countryside Commission. (1996). *The Character of England: Landscape, Wildlife & Natural Features*. EN & CC Leaflet

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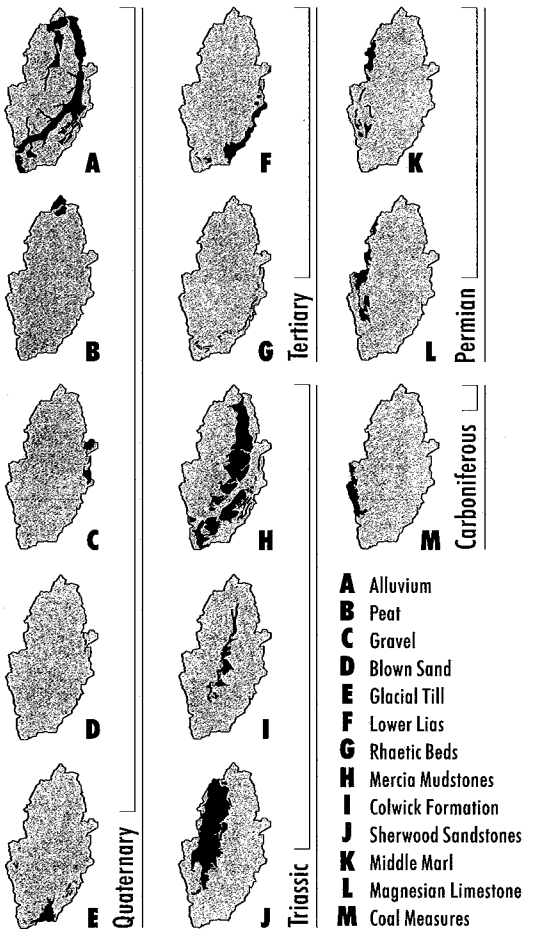
Release date: 1998

3 INFLUENCES ON BIODIVERSITY IN NOTTINGHAMSHIRE

3.1 ROCKS, LANDFORMS AND SOILS

3.1.1 Nottinghamshire consists of a series of plateaux running from north to south. These begin with relatively young rocks such as Lower Lias and Mercia Mudstone in the east, and get progressively older as they rise towards the west, culminating in the Coal Measures and the Magnesian Limestone ridge.



A Breakdown of the Geology of Nottinghamshire

3.1.2 From this basic structure, Nottinghamshire's present-day landforms have evolved through river action, sea level rise and fall, and glaciation. Areas of hard rock have persisted as higher land, in which valleys have been cut into softer stone. Overlying the solid geology in the south is material deposited by glaciers, forming the gently rolling South Nottinghamshire Wolds, while in the Trent Valley the river has distributed gravel and finer sediments. This variety of landform and geology means that there is a wide range of soil types in different areas of the County. Different species of both

Release date: 1998

plants and animals show preferences for different soil types, so because Nottinghamshire has such a variety of soils, the diversity of species which the County can support is relatively high.

3.2 CLIMATE

3.2.1 Nottinghamshire is a low-lying, landlocked county, sheltered from easterly winds and rain by the uplands of Derbyshire and Staffordshire. As a result, it has a relatively dry climate, with an annual temperature range more typical of the Continent[1]. The climate is relatively uniform throughout the County, although rainfall increases slightly with altitude from east to west. The species found in the County, therefore, are those typical of these climatic conditions.

3.2.2 Climate and weather patterns are believed to be changing as a result of global warming. Current predictions suggest that the global climate will experience a warming of between 1.5 and 4.5 °C by the end of the next century; in the UK winters may be wetter, springs earlier and summers drier[2]. These changes are likely to have significant effects on Nottinghamshire's biodiversity.

3.2.3 Changes will be influenced by how species respond to warmer summer temperatures and changing weather patterns, how successfully they compete with other species, and their ability to disperse and colonise more favourable areas. Species better adapted to the new conditions will dominate, and many species may be lost altogether from the County. Species that will tend to be disadvantaged include moisture loving plants such as mosses, and those that favour cool, damp conditions such as the bluebell. However, some southern

Release date: 1998

species may extend their range northward if suitable habitat can develop. Habitats likely to experience change include heathland, wetlands and arable land. Some may be lost, or may need to be re-located or re-created in order for them to survive. Simply conserving some habitats will entail considerable effort.

3.2.4 The extent and effects of climate change are very difficult to predict, and there will be a need to monitor any changes carefully so that appropriate action can be taken and the Local Biodiversity Action Plan altered accordingly. The main conservation aim is obviously to slow down the rate of climate change by increasing awareness of the effects of global warming and ensuring that greenhouse gas emissions are reduced.

3.3 THE HISTORICAL EFFECTS OF MAN

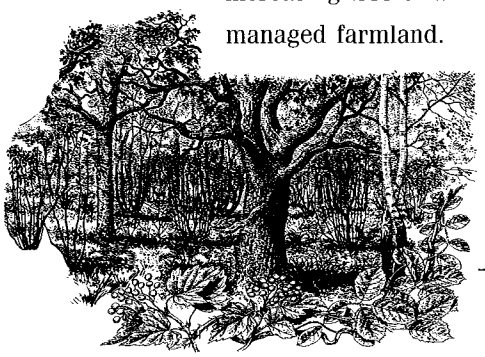
3.3.1 While climate and geology ultimately determine which plants and animals we see around us, human activities have altered the original distributions and habitat associations of species to such a degree that the modern landscape of Nottinghamshire is almost completely man-made[3].

3.3.2 About 6,000 years ago, when Neolithic farmers first began to have a significant impact on the countryside, Nottinghamshire, like most of Britain, was almost completely wooded. From this time onwards, however, the 'wildwood' was gradually eroded to make way for crops, grazing animals and settlements, with successive cultures having a greater and greater impact. By Norman times, the landscape would have consisted of small pockets of woodland surrounded by cultivated land, grazed pasture and heath. Grazed wood pasture predominated in Sherwood Forest.

Release date: 1998

3.3.3 In the late 18th century, the Enclosure Acts replaced subsistence, cooperative farming with commercial private enterprise, resulting in the planting of hundreds of miles of hawthorn hedge as the old 'open field' systems were converted to more efficient grids. This brought major changes to the landscape of the County, and was the beginning of the current trend towards agricultural intensification. As land drainage and farming practices developed throughout the 19th century, production increased, but with the associated loss of many wetlands, heaths and ancient grasslands, with their characteristic wildlife.

3.3.4 With the Industrial Revolution came new pressures on the countryside, which, while bringing economic benefits, have meant threats to the biodiversity of Nottinghamshire, which continue into the present day. This century has seen further loss of countryside to residential, industrial and transport developments, and increasing loss of wildlife from intensively managed farmland.



The fragments of ancient woodland which remain in Nottinghamshire support many rare and threatened species.

3.3.5 Because most of Nottinghamshire was originally wooded, many of the species found here today are characteristic of forest conditions. Where the original forest cover has been removed, species characteristic of habitats such as grassland, wetland and heath have colonized, which would previously have been restricted to natural gaps in the wildwood. A host of further species followed the spread of

Release date: 1998

arable farming across Europe to become resident in the County.

3.3.6 There are no areas remaining in Nottinghamshire free from the effects of man. Those which have been modified only to a limited extent are referred to by ecologists as 'semi-natural', and it is these which are of the greatest importance for biodiversity. The majority of semi-natural habitats have been subject to low intensity management over hundreds of years. Many species have become adapted to this traditional management, such as grassland cutting for hay, or woodland coppicing, and the methods must therefore be continued if they are to survive.

3.4 NOTTINGHAMSHIRE TODAY: BIOGEOGRAPHICAL AREAS

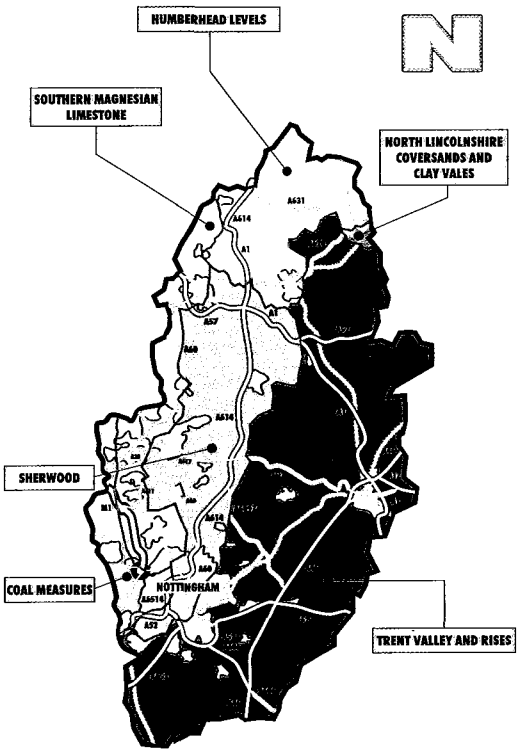
3.4.1 The traditional approach to both biodiversity and landscape conservation has been based on systems of designated sites, such of Sites of Special Scientific Interest (SSSIs) and Mature Landscape Areas (MLAs). Although these have protected many important features that would otherwise have been lost, they have been insufficient to stop the widespread decline in biodiversity, and conserve the character of the countryside as a whole. In recognition of this, there is a growing emphasis at both national and local levels on a strategic approach to conservation in the whole of the countryside, not just protected areas.

3.4.2 The Countryside Commission's Countryside Character Programme has divided England into 'Countryside Character Areas' with distinctive landscape features, as the basis for a strategic approach to landscape conservation. Concurrently with this, English Nature has produced its own 'Natural Areas'

Release date: 1998

3

map, with the emphasis on biodiversity and nature conservation. Each Natural Area is defined according to wildlife, natural features, land use and human history, and each has its own set of biodiversity conservation objectives. Natural Areas and Countryside Character Areas have now been combined into a single map, entitled 'The Character of England: Landscape, Wildlife and Natural Features'[4].



Natural Areas in Nottinghamshire

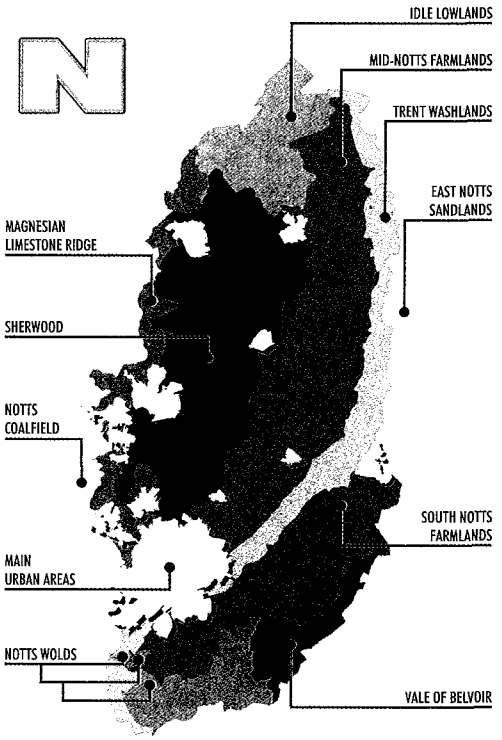
3.4.3 The Natural Areas programme provides a strategic framework for the implementation of the UK Biodiversity Action Plan, by translating objectives and targets to a more local level. It also provides a means by which action can be co-ordinated across traditional administrative boundaries, which are not respected by wildlife. This Local Biodiversity Action Plan will therefore contribute to the delivery of objectives for each of our Natural Areas, in combination with neighbouring action plans[5-6].

3.4.4 In 1998, Nottinghamshire became the first County Council to produce its own character map, dividing the County into ten Regional Character Areas. Five of these correspond

Release date: 1998

3

to national character areas, while five form subdivisions of the large area defined nationally as the 'Trent and Belvoir Vales'. Accompanying the County map are the 'Nottinghamshire Landscape Guidelines'[7], which provide detailed descriptions of the Regional Character Areas, and set out the actions needed to maintain and restore the distinctive character of each. The Guidelines will form the foundation for future landscape conservation work, guide planning policy and land use decisions, and act as a baseline for monitoring future change. Many of their recommendations relate directly to biodiversity conservation, since natural features and wildlife are an integral part of the landscape. Their implementation will therefore contribute to the achievement of Local Biodiversity Action Plan objectives, and vice versa.



Nottinghamshire Regional Character Areas

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Release date: 1998

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Release date: 1998

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7 Nottinghamshire County Council. (1998). *Nottinghamshire Landscape Guidelines*. NCC/ Countryside Commission

Note: Other Local Biodiversity Action Plans are in production for neighbouring areas.

Release date: 1998

4 CURRENT ISSUES, THREATS AND OPPORTUNITIES

4.1 WATER

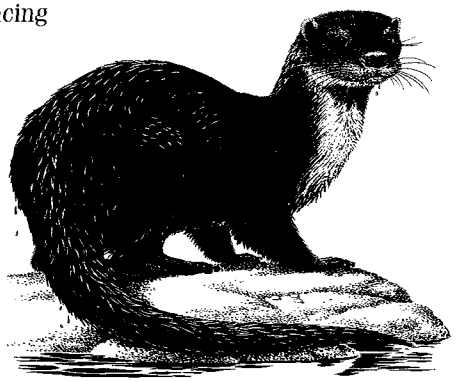
4.1.1 Watercourses and wetlands support a rich array of plants and animals, dependent, as we are, on a reliable supply of clean water. In Nottinghamshire a major aquifer under the Sherwood Sandstone, coupled with the River Trent and its tributaries, the Rivers Soar, Erewash and Idle, provide water principally for power station cooling, agricultural irrigation and public supply. Water courses, including man-made examples such as ditches and canals, are also a major resource for navigation, drainage, recreation, fisheries, and effluent disposal. In meeting these competing demands, it is essential that our use of the County's water resource is sustainable. This means providing for our needs while ensuring that the quality of the environment, of which biodiversity is a major indicator, is maintained and enhanced in the long term.

4.1.2 **THE MAIN CONCERNS ARE:**

- Loss of and damage to wetland habitat and species diversity due to over- abstraction of water, especially during prolonged periods of low rainfall.
- Loss of species diversity due to pollution arising from sources such as sewage works, run-off of agricultural chemicals, or industrial processes (although water quality in Nottinghamshire's watercourses is generally improving).
- The loss of wetland habitats through drainage and flood alleviation schemes and the straightening and canalisation of watercourses.

Release date: 1998

4.1.3 Opportunities for enhancing biodiversity include:



Otters disappeared from the County in the 1970s, but are being encouraged to return by the restoration of their habitat.

- Preventing over-abstraction from boreholes and above ground sources where this will result in damage to wetland habitats.
- Further reducing pollution.
- Encouraging water conservation by industrial, agricultural and domestic consumers to reduce demand.
- Avoiding development in floodplains, and designing biodiversity-friendly flood alleviation schemes where these are necessary.
- Restoring flooded gravel pits to maximise their value for biodiversity.

4.1.4 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES

- The Environment Agency's Midlands Region Biodiversity Strategy[1] takes forward its duties under the UK BAP[2] by translating them to a regional level. It will be implemented through Local Environment Agency Plans (LEAPs).
- The Environment Agency is responsible for enforcing a range of pollution control and environmental protection regulations, and provides guidance to local authorities on preventing land-use activities harming water quality.
- The County Structure Plan[3] contains a range of policies aimed at reducing water pollution.
- Four areas on the Sherwood Sandstone aquifer are covered by the MAFF Nitrate Sensitive Areas Scheme. This offers payments to farmers in return for changing farming practices to reduce nitrate leaching, converting from arable and intensive grassland to extensive grassland and maintaining environmental features.

Release date: 1998

4

4.2 ENERGY

4.2.1 Most systems for producing, distributing and using energy have a direct or indirect impact on biodiversity, particularly those associated with electricity production. In some cases these impacts are global, and cannot be avoided by local action alone. Since the 1960s, Nottinghamshire's large coal-fired power stations in the Trent Valley have played a major role in generating electricity to meet national requirements. Since the 1980s, however, competition from cleaner and cheaper fuels, and the privatisation of the electricity industry have meant an accelerated decline in coal-fired power production, and widespread colliery closures in the County.

4.2.2 **THE MAIN CONCERNS ARE:**

- The contribution made by the burning of fossil fuels to global warming. Changes in the world's climate would result in changes to the distribution and composition of plant and animal communities. New climatic conditions in Nottinghamshire would result in changes in agricultural land use, changes in the nature and location of habitats and the loss of habitats and species.
- The deposition of acids released into the atmosphere by burning fossil fuels, which can damage some ecosystems, particularly forests and lakes.
- Technologies employed in the generation and supply of electricity can have a direct impact on biodiversity through land use, particularly power stations and collieries with their related infrastructure. Generally, renewable energy resources confer great environmental benefits by displacing fossil fuels and some, such as short rotation coppice, if appropriately sited and managed, can have a beneficial effect on biodiversity.

Release date: 1998

4.2.3 Opportunities for enhancing biodiversity include:

- Promoting the efficient use of energy, and supporting renewable forms.
- Ensuring that the planning and management of power stations, collieries, and all other energy related activities minimise adverse impacts on biodiversity through the effective use of planning controls.
- Restoring disused coal tips and old colliery sites to maximise their value for biodiversity, particularly as areas for habitat creation.

4.2.4 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES:

- The County Structure Plan[3] contains a number of policies relating to energy production. The Plan supports the development of renewable energy resources, the reduction of damaging emissions, the minimisation of adverse impacts of new developments, and the promotion of energy efficiency.
- RJB Mining is carrying out 124ha of heathland re-creation on land at the former Rufford, Clipstone and Thoresby Collieries.
- Designated wildlife sites are given varying degrees of protection under the planning system (see section 4.8).
- Nottinghamshire County Council and the Forestry Commission, funded by British Coal, are undertaking the restoration of 1,000ha of former colliery spoil tip to multi-purpose woodland and other habitats.

4.3 TRANSPORT

4.3.1 Car travel in Britain has increased dramatically in recent decades. Between 1981 and 1991, the proportion of Nottinghamshire households with a car rose from 59% to 66%, and the number of households with more than one car increased from 13% to 21% over the same period, coinciding with a reduced demand for public transport[3]. Nationally and locally there has also been a considerable increase in both the volume and proportion of heavy goods carried

Release date: 1998

by road. The increase in road traffic has important public health, social and environmental implications, and there is an increasing recognition that the current level of increase is unsustainable, and a growing emphasis on alternative forms of transport.

4.3.2 The Main Concerns Are:

- Road construction and upgrading can cause loss of, and damage to, wildlife habitats and landscape features. These impacts occur directly through the use of land and indirectly through increasing demand for aggregates and pressures for development alongside roads. It is important to bear in mind that even the more environmentally sound transport developments, such as railways and cycle routes, can have adverse impacts on habitats and species if not properly sited and designed.
- The construction of new roads and the widening of existing ones can fragment populations of species unable to cross, putting them at greater risk of extinction. Loss of individuals to road kills can also have a significant effect on the populations of some animals.
- The contribution made by the burning of fossil fuels to global warming. Changes in the world's climate will result in changes in the distribution and composition of plant communities. New climatic conditions in Nottinghamshire would result in changes in agricultural land use, changes in the nature and location of habitats and the loss of habitats and species.
- The deposition of acids released into the atmosphere by burning fossil fuels, which can damage some ecosystems, particularly forests and lakes.

4.3.3 Opportunities for enhancing biodiversity include:

- Encouraging the use of alternative forms of transport to the car which have less widespread impacts.
- Ensuring that biodiversity objectives are fully incorporated into the assessment of new transport infrastructure (including cycle routes, footpaths etc.), and ensuring that their planning and management minimise adverse impacts on biodiversity through the effective use of planning controls.

CONTINUED OVER...

- Instigating traffic and tourism management schemes which aim to manage access to environmentally sensitive areas.
- Ensuring that the implications for travel demand of any proposed development are fully assessed so as to minimise the need for travel by car.

4.3.4 CURRENT ACTION IN NOTTINGHAMSHIRE -EXAMPLES:

- Designated wildlife sites are given varying degrees of protection under the planning system (see section 4.8).
- The County Structure Plan[3] contains a series of policies relating to transport. These include commitments to improve public transport facilities, to extend and improve cycle routes, and to assess and minimise the environmental impact of new and upgraded road schemes.
- Nottinghamshire County Council's Cycling Strategy contains a range of initiatives and policies which aim to double the use of bicycles by 2002, and again by 2012.
- The County Council's 'Travelwise' campaign aims to raise public awareness of the issues surrounding car use, and encourage the use of more sustainable forms of transport.

4.4 AGRICULTURE

4.4.1 Nottinghamshire's present day diversity of habitats and species is largely a result of historical agriculture, and today's farmers and land-owners play a key part in conserving it. Despite the commitment of many land managers to nature conservation, the EU Common Agricultural Policy puts increasing pressure on them to intensify. Consequent changes in farming practices, while dramatically increasing productivity, have reduced the wildlife value of many farming areas. Maintaining biodiversity can have commercial benefits for agriculture, for example biological pest control may allow

Release date: 1998

a reduction in the use of pesticides.

An attractive countryside, rich in wildlife, is also a basis for farm diversification through tourism, and can benefit the wider rural economy.

4.4.2 The Main Concerns Are:

- The loss and fragmentation of semi-natural habitats such as heathland, hay meadows and wetlands as a result of such factors as intensification, drainage and water abstraction.
- The decline in the wildlife value of farmland due to the loss of features such as hedgerows, field margins and ditches, combined with changes in cropping regimes and practices which have led to the severe decline of many farmland species.
- Damage to soils, water and ecosystems caused by the inappropriate use of fertilisers and pesticides.
- BSE and related health scares reducing the value of stock, and hence leading to the possible conversion of pasture to arable land, with associated loss of wildlife.

Bats are at risk from the loss of insect rich wetland habitats and linear features such as hedgerows.

4.4.3 Opportunities for enhancing biodiversity include:

- Recognising and promoting those local farming and land management practices that enhance the County's biodiversity, landscapes, and character.
- Ensuring livestock management minimises pollution from animal wastes, and establishing stocking densities on heaths and unimproved grasslands which are related more closely to the natural carrying capacity of the land.
- Adopting integrated crop management to reduce the need for fertilisers and pesticides.

CONTINUED OVER...

Release date: 1998

- Encouraging organic farming.
- Encouraging the use of locally adapted livestock breeds and crop varieties.
- Introducing greater diversity on the farm, for example through the encouragement of reversion of arable land to pastoral use, and the wider use of rotations and conservation headlands in arable farming.
- Promoting the appropriate management of important features such as hedges, ditches and farm woodlands.
- Withdrawing from productive agriculture altogether in selected areas, and allowing natural succession to take its course.

4.4.4 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES:

- A range of Government schemes attempt to integrate agricultural and environmental objectives. In Nottinghamshire, these include the Countryside Stewardship Scheme and the Nitrate Sensitive Areas Scheme. These have had some success in reducing the loss of habitats and species and creating new areas for wildlife. However, environmental incentives remain a small part of agricultural support, and a policy change at European level is required before this will change.
- The farmer-led Farming and Wildlife Advisory Group is increasingly active in the County, and is attracting considerable support from landowners.
- The Rushcliffe Barn Owl Project is a good example of a local scheme working with farmers to achieve biodiversity benefits.
- The British Trust for Conservation Volunteers produces guidance on hedgerow management and brings sponsorship to bear as part of its Hedgerow Campaign.
- Within the Greenwood Community Forest area, a programme of tree planting, habitat creation and restoration is under way, in co-operation with land-owners and managers.
- Sherwood Forest is one of four trial areas for English Nature's Habitat Restoration Project. English Nature and the Sherwood Forest Trust are working with land-owners and managers in the area to restore wildlife habitats, particularly where these can link existing sites.

Release date: 1998

- SSSIs and certain species have a degree of statutory protection from destruction and damage (section 4.9).
- Designated wildlife sites are given varying degrees of protection under the planning system (section 4.8).

4.5 FORESTRY AND WOODLAND MANAGEMENT

4.5.1 In common with many other parts of the country, Nottinghamshire underwent a huge programme of woodland planting for more than fifty years following the First World War. The increase in woodland area, however, has been achieved mainly through the planting of conifers, and the area of ancient broadleaved woodland has declined during the same period. All woodlands have some value for wildlife, but the remnants of the original natural forest are the most valuable and diverse. Our native tree species can support a much greater variety of animals than introduced ones, and are therefore more valuable for biodiversity. Plantation woodlands can, however, be valuable when planted on areas with low existing wildlife interest. Government forestry policy is now based firmly on multiple objectives, balancing biodiversity, landscape, recreation and commercial interests.

4.5.2 **THE MAIN CONCERNS ARE:**

- The further loss of ancient and semi-natural woodland, which already comprises only 14% of the total and is greatly fragmented[4].
- The loss of biodiversity through inappropriate woodland management, or lack of management.
- The failure of regeneration due to overgrazing by sheep, deer and cattle.

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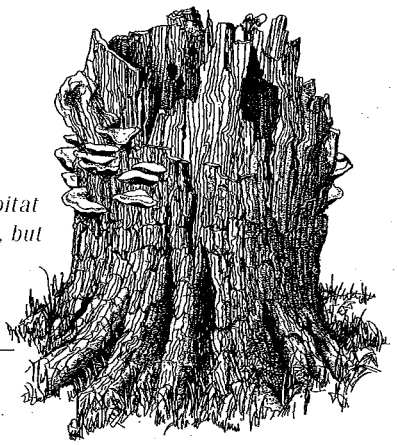


✸ *Dead wood is a vital habitat for invertebrates and fungi, but is often removed from woodlands in the name of tidiness.*

4.5.3 Opportunities for enhancing biodiversity include:

- The conservation, restoration and appropriate management of the remaining areas of ancient and semi-natural woodland.
- The sensitive management of other existing woodlands. This might include the restructuring of even-age plantations, the incorporation of open space supporting complementary habitats such as heathland or grassland, the retention of old trees and dead wood and the removal of invasive species.
- Creating new woodlands, especially in areas of low wildlife value.
- Withdrawing from plantation forestry altogether in certain areas, particularly those which were formerly heathland, and restoring the original habitat.
- Encouraging the use of native species of local provenance, and, where possible, establishment through natural regeneration.
- Promoting the use of good quality, local genetic stock where native broadleaves are being planted. Careful selection of seed sources will help ensure that local genotypes are preserved and that trees are well suited to their environments.

Release date: 1998

4.5.4 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES:

- Several Community Tree Nurseries have been set up to grow trees from locally collected seeds. A database of individual growers and stock is kept by the British Trust for Conservation Volunteers for the Greenwood Community Forest.
- A growing network of voluntary tree wardens in the County is supported by Local Authorities, the Greenwood Community Forest and BTCV.
- The Forestry Authority's Woodland Grant Scheme provides grants to land managers for creating new woodlands and managing existing ones sustainably.
- Within the Greenwood Community Forest area, a programme of tree planting and habitat restoration is under way, in conjunction with the provision of countryside recreational facilities, and the support of traditional arts and crafts. The aim is to increase woodland cover in the area from 10% to 30% over a 20 year period.
- Sherwood Forest is one of four trial areas for English Nature's Habitat Restoration Project. English Nature and the Sherwood Forest Trust are working with land-owners and managers in the area to restore wildlife habitats, particularly where these can link existing sites.
- SSSIs and certain species have a degree of statutory protection from destruction and damage (section 4.9). Woodlands may also be protected by Tree Preservation Orders.
- Birklands and Bilhaugh SSSI is to be designated a Special Area of Conservation under the EC Habitats Directive (section 4.9) in recognition of the value of its ancient oak-birch woodland for rare invertebrates.
- Designated wildlife sites are given varying degrees of protection under the planning system (section 4.8).

4.6 THE URBAN ENVIRONMENT

4.6.1 Many urban areas contain relicts of natural habitats such as ancient woodlands, wetland and unimproved grassland. The extent of habitat loss in the countryside means that these areas are often vital refuges for

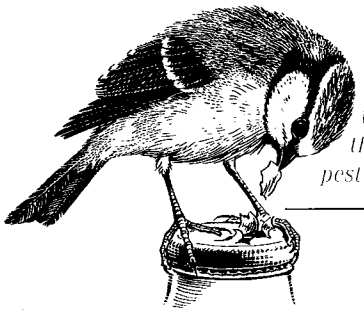
Release date: 1998

threatened species. Post industrial sites, or areas left 'derelict' for many years are often valuable for urban biodiversity, and even walls, bridges and viaducts provide habitats which plants and animals can exploit.

4.6.2 71% of the population of Nottinghamshire live in urban areas[5] (1992 figure). This means that for the majority of people urban nature reserves and green spaces provide the only opportunity for contact with wildlife. Parks and gardens not only contribute greatly to biodiversity conservation if managed appropriately, but also play a major role in encouraging public interest and participation in conservation. Used as outdoor classrooms, green urban areas can facilitate a greater understanding and appreciation of biodiversity. Furthermore, attractive green areas can improve the appearance of the built environment, drawing business and investment to the area, encouraging tourists, and improving the quality of life for local people.

4.6.3 **THE MAIN CONCERNS ARE:**

- Loss of, and damage to, urban wildlife sites through development.
- The loss of wildlife sites and agricultural land to development as rural areas become increasingly urbanised.
- The decline in the wildlife value of green space, including parks and gardens, due to inappropriate management (particularly excessive tidiness) and the increasing use of chemicals.



Many garden birds, like the blue tit, are at risk from the increasing use of chemical pesticides such as slug pellets.

Release date: 1998

4.6.4 Opportunities for enhancing biodiversity include:

- Safeguarding existing wildlife sites from development, and maximising the benefit for biodiversity of any change in land use.
- Developing and maintaining a network of open green space, wildlife corridors and reservoirs throughout urban areas, linking them to the wider countryside.
- Introducing a more imaginative, conservation based approach to the management of parks, road verges, and other public open spaces.
- Designating and managing urban nature reserves.
- Encouraging householders to take action in their own gardens to encourage wildlife.
- Promoting the educational and local community use of wildlife sites in order to increase understanding of biodiversity issues.

4.6.5 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES:

- Nottingham City Council and Mansfield District Council have produced their own Nature Conservation Strategies[6-7] . The aims of these include the establishment of new wildlife sites, the protection and management of existing ones, species protection, and the promotion of public awareness and participation. The City Council has also produced an Open Space Strategy and a Tree Strategy.
- The Nottingham Urban Wildlife Scheme (NUWS), the urban wing of the Nottinghamshire Wildlife Trust, was established specifically to promote, protect and where appropriate enhance the wildlife resource of the County's urban areas. The Scheme manages a number of urban nature reserves, and provides technical advice on urban wildlife matters throughout the County.
- A partnership of organisations is involved in the 'Corridors to the Countryside' scheme, designed to promote, protect and enhance the main river corridors through the Nottingham area.
- A number of other organisations are involved in urban biodiversity conservation projects in the County, including BTCV, Groundwork, the Environment Agency, District Councils and the

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Release date: 1998

County Council's Countryside Management Service. These projects will be discussed in greater detail in the appropriate Habitat and Species Action Plans.

- Designated wildlife sites are given varying degrees of protection under the planning system (see section 4.8).

4.7 RECREATION AND TOURISM

4.7.1 Much of Nottinghamshire's countryside, particularly in the Sherwood Forest area, is a focus for recreation and tourism. In 1994, the value of tourism in the County was estimated at £234m, representing nearly 1.9m visitor trips, and the number of visitors continues to grow[3]. The provision of opportunities for recreation is also important in determining the quality of life in a community, particularly on the urban fringe. Woodlands and heaths are especially attractive to visitors, while some derive great pleasure from seeing wildflowers in profusion, or unusual species. For many people biodiversity has strong aesthetic, spiritual and cultural meanings, and can be a source of great enjoyment. Well-managed recreation and tourism should therefore be seen as a positive force for conservation, and both industries have a responsibility to ensure that visitors to environmentally sensitive areas do not destroy what they have come to see.

4.7.2 **THE MAIN CONCERNS ARE**

- That excessive visitor pressure in localised areas such as the Sherwood Forest Visitor Centre and Clumber Park could potentially cause significant problems for biodiversity. Examples of impact include wear and tear on habitats from trampling, disturbance to heathland birds resulting in the reduction of breeding success, and disturbance to wildfowl in areas used for water sports.
- Direct loss of wildlife sites to leisure and tourism developments and associated infrastructure.

Release date: 1998

- The fact that most recreational journeys are undertaken by car, which leads to increasing traffic levels and associated problems (see section 4.3).

4.7.3 Opportunities for enhancing biodiversity include:

- Recognising that wildlife and natural areas are a valuable recreational resource and conserving and managing them accordingly.
- Making use of the educational resource provided by public areas such as country parks, to enable visitors to learn about Nottinghamshire's biodiversity and the need for conservation. In particular small-scale 'green' tourism initiatives should be encouraged.
- Balancing the need for public access and recreational activities with the need to minimise adverse impacts on landscape and biodiversity.
- Protecting the most important wildlife sites from development associated with leisure and tourism and minimising adverse impacts on biodiversity wherever development occurs.

4.7.4 CURRENT ACTION IN NOTTINGHAMSHIRE - EXAMPLES:

- One of the aims of the Greenwood Community Forest project is to encourage sustainable countryside tourism and leisure activities in the area.
- The County Structure Plan[3] contains a number of policies featuring commitments to avoid 'major adverse environmental impacts' of tourism and leisure.
- Tourists on BTCV's 'Natural Break' programme actively improve the environment by carrying out practical conservation projects.
- Designated wildlife sites are given varying degrees of statutory protection, and are protected under the planning system (sections 4.8 and 4.9).

4.8 THE LAND USE PLANNING SYSTEM

4.8.1 The UK's land use planning system regulates the development and use of land in the public interest. Planning permission is required to carry out development, and applications are normally considered by the Local Authority,

Release date: 1998

and decided in accordance with their development plans. Local planning authorities have a key role in conserving the diversity of wildlife, and are required to take full account of nature conservation in preparing their development plans, in accordance with domestic and international law. The relationship between statutory development plans, other local authority plans and Biodiversity Action Plans is discussed in section 6.

4.8.2 The Government has produced several guidance notes for Local Authorities relating to biodiversity conservation. Of these the most directly relevant to biodiversity is Planning Policy Guidance Note 9: Nature Conservation[8] (PPG9), which outlines the procedures for dealing with statutory and non-statutory wildlife sites and protected species, according to the relevant legislation. The PPG states that nature conservation objectives should be taken into account in all planning activities which affect rural and coastal land use, and in urban areas where there is wildlife of local importance. Nature conservation should be an important material consideration in many planning applications, especially in or near SSSIs, where there are statutory requirements to consult English Nature. Most importantly, planning permission should only be granted if 'other material factors' are sufficient to override nature conservation considerations, or if conditions can be imposed to prevent damage. The PPG also states that the Precautionary Principle (section 2.4) should guide all land use decisions.

4.8.3 Planning authorities have traditionally focused on avoiding damage to important sites, but Government guidance makes it clear that they

Release date: 1998

are now expected to take awider view of nature conservation. PPG9[8] states that planners should be concerned not only with designated areas but also with other land of conservation value and thepossible provision of new habitat. It goes on to say that:

Statutory and non-statutory sites, together with countryside features which provide wildlife corridors, links or stepping stones from one habitat to another, all help form a network necessary to ensure the maintenance of the current range and diversity of our flora, fauna, geological and land-form features and the survival of important species.

4.8.4 The Main Concerns Are:

- The continuing loss of designated wildlife sites and other areas of high value for biodiversity to development, including built development, mineral extraction and waste disposal.
- That the environmental consequences of development may not be accurately assessed. Natural systems are incredibly complex, and our knowledge of how they function is limited, making it difficult to predict the long-term effects of any impact on them. Unless the possible effects of a proposed development are systematically assessed, the consequences for biodiversity may be underestimated. The cumulative effect of the gradual erosion of the County's biodiversity must also be considered.
- Because natural features such as biodiversity are difficult to value in economic terms, they are often not given an appropriate weight in land use decisions.
- The pressure placed on urban and rural open space by the large housing and employment land allocation in the 1996 Structure Plan Review. Of particular concern is the intention to place much of this allocation on Green Belt land and other greenfield sites.
- The failure to take up opportunities for habitat creation arising from development schemes.
- The increase in transport infrastructure and traffic as urban areas spread and car-based out-of-town developments continue to proliferate.

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Release date: 1998

- The increased demand for minerals for new development, and the increased production of waste and use of energy and water as the number of dwellings and workplaces increases.
- The loss of opportunities for less intensive agriculture as farmland is lost.

4.8.5 Opportunities for enhancing biodiversity include:

- Ensuring that the impacts on biodiversity of all proposed developments (not just those on designated sites) are accurately assessed as early as possible in the planning process, so that adverse effects can be avoided or minimised. The Precautionary Principle must be central to this process.
- Weighing the international, national and local importance of species and habitats carefully against the need for a particular development.
- Maintaining and developing biological recording and site designation systems in the County to enable land use decisions to be based on the best possible information.
- Creating wildlife habitat and/or public open space as a requirement of planning permissions. (Habitat creation should never be seen as an adequate substitute for the loss of important habitats and species.)
- Concentrating on the renewal of urban areas, the re-use of existing buildings and the creation of desirable high density developments which promote sustainable living by reducing transport needs.
- Incorporating energy and water saving technology into all new development.

4.8.6 CURRENT ACTION IN NOTTINGHAMSHIRE -EXAMPLES:

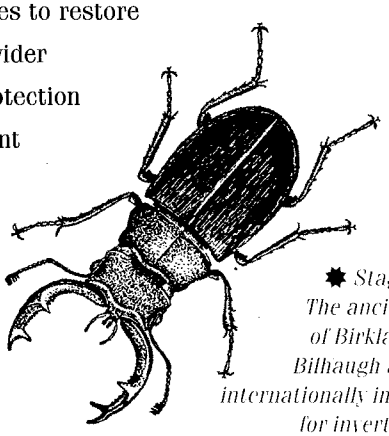
- The County Structure Plan[3] contains a number of policies aiming to minimise adverse environmental effects of housing, transport, shopping, tourism, minerals, energy and waste disposal developments.
- The Nottinghamshire Waste Local Plan has become one of the first in the country to include policies specifically relating to biodiversity conservation.
- Designated wildlife sites and certain species are given varying degrees of protection by law, and under the land use planning system (section 4.9).

Release date: 1998

- A number of positive gains for biodiversity have been achieved in the County through the effective use of planning obligations.
- Many organisations, including the RSPB, Nottinghamshire Wildlife Trust and the Council for the Protection of Rural England (CPRE) campaign against the adverse impacts of development on the countryside, reflecting growing public concern.

4.9 SITE BASED PROTECTION AND WILDLIFE LEGISLATION

4.9.1 Historically, nature conservation in the UK has concentrated on protecting important areas of habitat. The view was that if key sites were protected, the species would look after themselves. In recent years, however, it has been recognised that additional measures are needed for many species, resulting in legislation to protect them. It has also become apparent that small, often isolated, protected areas are inadequate to maintain healthy populations of most species. The basic importance of the protected area system remains, however, and will continue as the foundation of policies to restore biodiversity to the wider countryside. The protection of our most important wildlife sites is an absolute minimum requirement of this Biodiversity Action Plan.



Stag beetle: The ancient oaks of Birklands and Bilhaugh SSSI are internationally important for invertebrates.

4.9.2 Site Protection

- The ancient oak woodland of the Birklands and Bilhaugh SSSI in Sherwood Forest is a candidate Special Area of Conservation (SAC). SACs are designated under the EU Habitats and Species Directive as part of a network of sites of European

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Release date: 1998

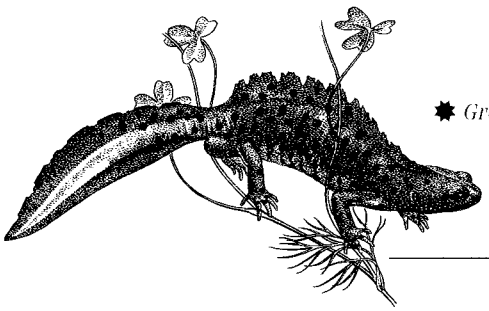
importance known as Natura 2000. The selection of sites is based on the presence of habitats and species listed in Annexes to the Directive as endangered vulnerable, rare or endemic. Sites enjoy a high level of statutory protection.

- National Nature Reserves (NNRs) are areas of national importance for nature conservation which are owned or leased by English Nature or other approved bodies, or managed by agreement with other land-owners and occupiers. All NNRs are also SSSIs. Nottinghamshire is the only Shire County without an NNR.
- The key designation used in the UK is Sites of Special Scientific Interest (SSSIs), designated under the Wildlife and Countryside Act 1981 (see below). SSSIs are selected by English Nature with the aim of safeguarding the best examples of habitat types, sites with notable species, and sites of geological importance. There are 64 SSSIs in Nottinghamshire, covering just 1.2% of the County. This is one of the lowest figures of all UK counties, indicating the extent to which Nottinghamshire's biodiversity has been degraded. SSSIs are given a high (although not absolute) level of protection in the planning system, and are administered by English Nature through a system of statutory consultation and management agreements.
- The most important sites for biodiversity and geology in Nottinghamshire are identified as Sites of Importance for Nature Conservation (SINC) by the Nottinghamshire Biological and Geological Records Centre, and afforded a degree of protection under the Structure and Local Plans. The importance of SINCs is emphasised by the Government in Planning Policy Guidance Note 9[6] (see section 4.8). A resurvey and review of the SINC system is currently under way in Nottinghamshire.
- Nottinghamshire currently has 12 Local Nature Reserves, which are designated by Local Authorities in conjunction with English Nature under the National Parks and Access to the Countryside Act 1949 (see below). These are generally close to centres of population, and provide visitor facilities and nature trails. They are usually owned and/or managed by the Local Authority or a local conservation organisation.

4.9.3 **The main legislatory instruments covering nature conservation in the UK are listed below. In addition to these, certain habitats and species (hedgerows and badgers, for example) have specific legislation to protect them.**

Release date: 1998

- The National Parks and Access to the Countryside Act 1949 introduced protection for wildlife habitats and landscapes for the first time. It gave statutory powers to the Nature Conservancy (now English Nature), which is the official government agency devoted to wildlife conservation in the UK, and also introduced the concept of SSSIs (section 4.9.2).
- The Countryside Act 1968 strengthened many of the powers given under the1949 Act and imposed on every public body a duty to have regard to the desirability of conserving the natural beauty of the countryside.



Great crested newts are given specific protection under the Wildlife and Countryside Act.

- The Wildlife and Countryside Act 1981, amended by a further Act of 1985, established a statutory framework for the conservation of land important for wildlife and natural features, and the protection of endangered wild plants and animals. All birds, bats, reptiles and amphibians, along with many other species of animal and plant, are given specific protection. Most species may not be killed or taken from the wild. The Act also contains measures to control the unauthorised release into the wild of certain non-native animal and plant species, and the importation of biological material which is a potential host to pests and diseases.
- The Environmental Protection Act 1990 divided the Nature Conservancy Council into three country agencies, including English Nature, and provided further protection for SSSIs.
- The Planning and Compensation Act 1991 improved local planning authorities' abilities to safeguard conservation areas by strengthening their planning enforcement and development control powers. It also required structure, local and unitary development plans to include policies in respect of the natural beauty and amenity of the land.

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Release date: 1998

- The Wildlife; Countryside: The Conservation (Natural Habitats etc.) Regulations 1994 (SI 1994 no.2716) transpose the requirements of the EC Habitats Directive[9] into UK law. They build on the existing legislation for the protection of habitats and species listed in the Directive, and apply its considerations in respect of development and pollution control legislation.

4.9.4 The above legislation, plus regulations governing air and water quality, and the land use planning system, are designed to enable the UK to address a number of international obligations. The *'Bern' Convention on the Conservation of European Wildlife and Natural Habitats*[10] imposes obligations to conserve endangered habitats and species, while the *Birds Directive*[11] protects all birds, their eggs, nests and habitats. The latter also requires the designation of Special Protection Areas (SPAs) to safeguard internationally important sites for birds. The *'Bonn' Convention*[12] gives specific protection to migratory animals.

4.9.5 Despite the amount of legislation that exists, however, there is widespread concern that laws are out of date, inadequately enforced, and therefore ineffective in maintaining biodiversity. The fact that the most important sites for wildlife in the UK, and in Nottinghamshire, are still being lost and damaged, and that so many of our species continue to decline, indicates that tougher measures are needed. In November 1997, twenty-two conservation organisations outlined the changes they believed were needed to wildlife law in order to create an effective system[13]. Ultimately, however, any statutory framework can only achieve so much. It must be bolstered by appropriate incentives, policies and actions.

Release date: 1998

4.10 EDUCATION AND AWARENESS

4.10.1 Biodiversity conservation ultimately depends on the actions of individuals. Raising awareness of the issues and encouraging everyone in the County to take action for wildlife is therefore an important function of this Local Biodiversity Action Plan. Everyone can do something for local biodiversity, whether it is joining a conservation group, gardening in a wildlife friendly way, or becoming a conservation volunteer. A significant proportion of the conservation work carried out in Nottinghamshire is done by volunteers. In addition to this, the benefits to global biodiversity of conserving water and energy, recycling, reducing car use, and generally adopting a more sustainable lifestyle are considerable.

4.10.2 People care about their environment. Recent surveys show that 82% of the British population is 'very' or 'quite' worried about the loss of UK plants and animals[14]. 40% also felt that the 'countryside' was one of the top three aspects of British quality of life (second only to freedom of speech)[15]. This concern is reflected in the continually growing membership of national conservation groups, which currently exceeds 5.5 million adults, about 12% of the UK population[16]. Many people are also members of local groups such as the Friends of Vicar Water, the Nottinghamshire Badger Group or the Leen Valley Conservation Volunteers.

4.10.3 Environmental education seeks to give individuals the opportunity to develop awareness, skills, knowledge, understanding and values, in order to make informed decisions about their lifestyles and the impacts they have on the environment. Education can

Release date: 1998

be both formal (in schools and colleges) and informal (through conservation groups, the media etc.).

4.10.4 Formal Education

The National Curriculum Council suggests that formal environmental education can be thought of as comprising three linked components:

- Education about the environment (knowledge).
- Education for the environment (values, attitudes, positive action).
- Education in or through the environment (a resource).

4.10.5 The environment is a cross-curricular theme in schools. Nottinghamshire County Council has an Environmental Education Service which aims to develop in pupils a strong interest in, an understanding of, and a caring attitude towards the environment. To achieve these aims, the Service provides a range of support for schools, including two residential centres, in-service training for teachers, and a range of curriculum materials.

4.10.6 A major environmental education initiative in Nottinghamshire schools is 'Trailblazer'. This is a record of achievement for pupils of all ages and abilities, which enables them to set targets for themselves and review experiences, while working towards a Trailblazer Award. To earn an award, pupils must build up time within the Field Studies, Outdoor Pursuits, Safety and Survival or Service to the Environment categories.

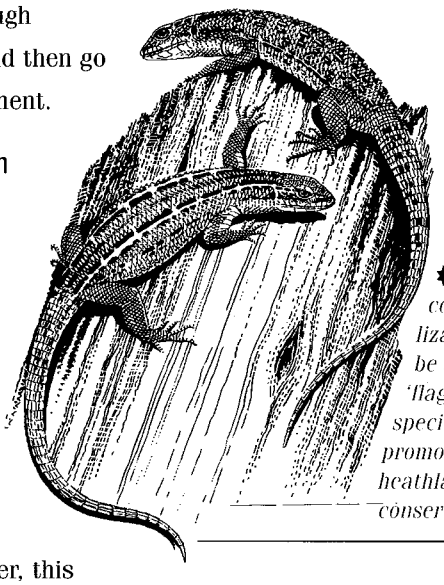
4.10.7 Further and higher education in Nottinghamshire encompasses two universities, as well as a large number of colleges of various types. These institutions have a major role to play in environmental education, particularly because

Release date: 1998

they are increasingly involved in activities such as community education, outreach and distance learning programmes and industrial training schemes in addition to their main course programmes. The environment in further and higher education was recently the subject of the Toyne Report[17], in which a series of recommendations were made which were subsequently endorsed by the UK Biodiversity Action Plan[2]. To achieve these recommendations, the report concluded that every institution should adopt and publicise:

- A comprehensive environmental policy statement.
- A policy and strategy for the development of environmental education.
- Action plans for their implementation.

4.10.8 There is growing trend towards non-college-based routes to training and education in environmental subjects. Organisations such as BTCV undertake programmes in local communities based on practical work in the environment. Many qualified but unemployed people are trained in the practical side of conservation through volunteer work, and then go on to find employment.



The common lizard will be a good 'flagship' species for promoting heathland conservation.

4.10.9 Informal Education

The traditional approach to environmental education is to provide the facts and assume that those in receipt of them will become concerned. However, this is likely to be successful only if the recipients already have some concern and feel that they

are able to do something about the problem. A more constructive approach involves informing people about the problem, explaining how their action is vital to solving it, and emphasising the benefits of a change in behaviour. We should be encouraging people to think of their environment as a system of many interacting factors, to realise the value of the natural habitats, species and processes inherent in it, and to consider their own impact on the environment in the light of these values.

4.10.10 Informal environmental education can take many forms, from newspaper articles and radio programmes to community projects and volunteer schemes. The activities of volunteers are a major way of influencing people - both those taking part and those observing the volunteers' commitment. Many of the activities which have the biggest impact involve doing something and learning through the experience, and education through involvement in this way can work on anyone. The fact that over 1,000 people in the County are conservation volunteers is a clear illustration of the importance of the natural environment to those living in Nottinghamshire.

4.10.11 Although the ultimate goal should be to make environmental education available to everyone, there are some sectors of society that should perhaps be targeted initially. These include those who have the greatest direct effect on biodiversity, such as planners and politicians. In order for these individuals to make informed, balanced decisions, they must be fully aware of the environmental consequences of their actions.

Release date: 1998

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Release date: 1998

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Release date: 1998

5 GENERIC ACTIONS FOR BIODIVERSITY IN NOTTINGHAMSHIRE

5.1 National

- Lobby the UK Government and the European Community for the integration of environmental objectives into the Common Agricultural Policy, and for the provision of adequate incentives to enable land managers to help achieve Biodiversity Action Plan targets.

  ACTION: BIODIVERSITY ACTION GROUP (BAG).

- Lobby the UK Government to tighten up nature conservation legislation, and bring it up to date with the UK Biodiversity Action Plan and local initiatives. Publicise case studies demonstrating the need for better legal protection.

  ACTION: BAG.

- Legislation to protect species and habitats must be effectively enforced.

  ACTION: ENGLISH NATURE (EN), ENVIRONMENT AGENCY (EA).

- Ensure that the implementation of the Nottinghamshire Local Biodiversity Action Plan is consistent with the UK Biodiversity Action Plan, and contributes to achieving national targets.

  ACTION: BAG.

5.2 Designated Sites

- Ensure no further loss of designated wildlife sites.

  ACTION: LOCAL AUTHORITIES (LAs), FORESTRY AUTHORITY (FA), BAG.

- The Nottinghamshire Sites of Importance for Nature Conservation (SINC) series should include at least one representative example of each Local Biodiversity Action Plan priority habitat.

  ACTION: LAs, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

- All Local Nature Reserves (LNRs) and other non-statutory nature reserves should have long-term management plans with clear objectives against which progress should be monitored.

  ACTION: LAs, ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

Release date: 1998

- All SINCs should be notified to land-owners, with the implications of the designation and the interest of the site explained. Advice should be available to encourage appropriate management.

  ACTION: LAs, NBGRC.

5.3 Land Management

- Explore the strategic use of agri-environment schemes such as Countryside Stewardship to create large areas of wildlife habitat, and to create corridors that link and buffer existing habitats, building on the experience of the pilot Habitat Restoration Scheme in Sherwood Forest.

  ACTION: FARMING AND RURAL CONSERVATION AGENCY (FRCA), BAG.

- Adopt a co-ordinated approach to the provision of advice to land-owners and managers.

  ACTION: FRCA, BAG, FA.

- In any scheme to create new areas of habitat or improve existing ones, use only species which occur naturally in the Regional Character Area and only stock of known local origin. Consider setting up nurseries to supply plants of local genetic stock.

  ACTION: BAG, LAs.

- Allow no further loss of designated wildlife sites, or other areas of importance for biodiversity to afforestation.

  ACTION: FA, EN, LAs, FOREST ENTERPRISE (FE).

The bittern is one of the UK's rarest birds, but may breed again in the County if its reedbed habitat is restored.

- Ensure no further loss of wetlands of importance for priority habitats and species to development, agriculture or over-abstraction, and restore damaged wetlands by reinstating water levels wherever possible.

  ACTION: EA, BAG, LAs.

Release date: 1998

- Ensure that the actual or potential value for biodiversity of public green space in urban areas is recognised and that biodiversity objectives are incorporated into the management of all such sites.

  ACTION: LAs, NWT.

- Explore the possibility of establishing a demonstration farm to illustrate environmentally sustainable techniques.

  ACTION: BAG.

5.4 Land Use Planning

- The Precautionary Principle (section 2.4) should guide every land use decision, as required by PPG9 and the County Structure Plan. This means that where there are significant risks of damage to the environment, the presumption should always be against development, even where accurate scientific information is unavailable.

  ACTION: LAs.

- Biodiversity should be a consideration in all land use decisions, not just those affecting designated sites. The possible effects of all development proposals on biodiversity must be systematically assessed, both within and beyond the proposed development's boundaries. The UK Biodiversity Action Plan stresses that the onus for assessing environmental impacts rests with those making the proposals.

  ACTION: LAs.

- The perceived local economic value of development proposals must be carefully weighed against the national and international status of species, habitats and sites.

  ACTION: LAs.

- The translocation of habitats and species should only be considered as a last resort.

  ACTION: LAs, BAG.

- Biodiversity conservation policies (not just those protecting key sites) should be incorporated into Regional Planning Guidance, the County Structure Plan and all Local Plans at the earliest possible opportunity, and must be effectively adhered to. This is in accordance with PPG9 and the EC Habitats Directive (sections 4.8 and 4.9).

  ACTION: GOVERNMENT OFFICE EAST MIDLANDS (GOEM), LAs.

CONTINUED OVER...

Release date: 1998

- All Local Authority strategic plans should be subject to Strategic Environmental Appraisal (as required by PPG12), to ensure they are consistent with sustainable development. This must take into account all effects on the environment, including those which cannot be given an economic value.

  ACTION: LAs.

5.5 Education

- Support environmental elements in school, community, further and higher education, and in business and professional training.

  ACTION: BAG, LAs.

- Ensure that all officials involved in decisions which affect biodiversity are adequately trained, or have sufficient access to expertise to make well-informed judgements.

  ACTION: LAs, BAG.

5.6 Public Awareness and Involvement

- Devise a public awareness strategy to explain the meaning and importance of biodiversity and how everyone in the County can play a part in conserving it.

  ACTION: BAG.

- Encourage, support and recognise the valuable work done by conservation volunteers working on environmental projects in the community.

  ACTION: BAG.

- Stimulate local action for biodiversity, and strengthen local pride in the environment by involving communities in setting conservation objectives and in managing protected sites wherever possible.

  ACTION: BAG, LAs.

- Provide interpretation on wildlife sites wherever appropriate.

  ACTION: NWT, LAs, RSPB, NBGRC.

- All Local Agenda 21 initiatives should incorporate strategies to enhance public awareness of biodiversity.

  ACTION: LAs.

Release date: 1998

5.7 Survey and Monitoring

- Establish and monitor inventories of existing sites for all Local Biodiversity Action Plan priority habitats through the County Audit, and ensure that these are regularly updated.

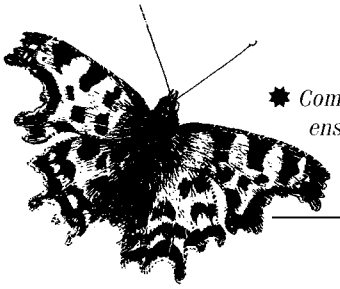
  ACTION: BAG.

- Establish partnership support for the NBGRC to enable it to serve future biodiversity recording and monitoring requirements.

  ACTION: BAG.

- Identify and remedy gaps in local environmental information.

  ACTION: BAG.



Comma: We must act now to ensure that today's common species do not become tomorrow's rarities.

Release date: 1998

6 IMPLEMENTATION AND MONITORING

6.1 A FRAMEWORK FOR ACTION

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6.1.2 This plan is designed to provide a framework for biodiversity conservation in Nottinghamshire. It cannot provide management prescriptions for individual sites, or detailed work plans for organisations, but instead provides a set of clear priorities and objectives around which more detailed work programmes can be based. The ultimate success of the plan in achieving its objectives depends on shared ownership by all partner organisations, and their long term commitment to its implementation.

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to be consistent with the UK Biodiversity Action Plan[1]. This will facilitate a major review and report to the UK Biodiversity Steering Group every five years.

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This will continue to be the steering group for the Local Biodiversity Action Plan, and will act as a central source of information and advice, a catalyst for fund-raising, and a mechanism for monitoring progress and carrying out reviews. It will continue to liaise with the UK Biodiversity Steering Group, and with neighbouring county biodiversity initiatives to ensure consistency, and will remain accountable to the wider Nottinghamshire biodiversity partnership through the annual Natural Environment Forum. The Biodiversity Action Group hopes to continue the Biodiversity Officer post into the implementation phase of the plan, to perform a co-ordinating role on behalf of the Group. One of the main roles of this officer will be to design and implement a monitoring programme to record progress against targets and action points.

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For each habitat and species action plan, an organisation has been nominated as lead agency. The main functions associated with this role are to provide a contact point for those with responsibilities under the plan, and to take a lead in its implementation. This means co-ordinating action between organisations and setting up working groups, etc., as appropriate. There may also be responsibilities under the monitoring programme.

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The partnership consists of all those organisations with agreed responsibilities under the plan. It will continue to widen as implementation progresses and cross-sectoral commitments are made. It is the responsibility of each of the partners to take forward their action points through their work, and to report progress to the Biodiversity Action Group. It is envisaged that many of the actions in the plan can be achieved through the partners' existing work, although some reassessment may be required. Co-ordination between the many organisations involved in nature conservation in the County will be facilitated by the plan. Partnerships between conservation groups, land- owners and managers, and local business and industry are vital if a truly cross- sectoral approach is to be achieved in the long term.

6.3 RELATIONSHIP TO OTHER PLANS AND PROGRAMMES

6.3.1 Statutory Development Plans

As described in section 4.8, Local Authorities have a key role in conserving biodiversity through the statutory planning process, and are required to take full account of nature conservation in preparing their development plans. The UK Biodiversity Action Plan[1] is official Government guidance, and as Local Biodiversity Action Plans become established, they are likely to have an increasingly important relationship with the planning process. Information generated both during the production of this document and as a result of monitoring will be useful during the review of development plans, and in turn statutory plans will be expected to make a significant

contribution to delivering UK and Local Biodiversity Action Plan targets. Policies should be put in place in all Local, Structure and Unitary Plans to ensure that Local Authorities' responsibilities under both UK and Local Biodiversity Action Plans are met. They should also be incorporated into Regional Planning Guidance.

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Some Local Authorities are undertaking State of the Environment Reports on a regular basis in order to gather information about the condition of the local environment in a structured and accessible way. This can be helpful in identifying environmental problems and in setting baseline information against which changes can be measured. The recording of progress towards Local Biodiversity Action Plan targets will provide the necessary monitoring element for nature conservation in this process.

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revising plans need to be aware of the targets and responsibilities identified in UK and Local Biodiversity Action Plans and consider how their own plans may contribute to the achievement of biodiversity objectives and *vice versa*. Consistency of approach is essential to ensure that resources are used as effectively as possible.

6.4 RELATIONSHIP TO AGRI-ENVIRONMENT SCHEMES

6.4.1 This Local Biodiversity Action Plan cannot in itself result in any new systems of grants or incentives for those managing land for nature conservation. Instead, it will rely on existing schemes to deliver national and local biodiversity objectives. There are a range of schemes offering grants to land managers for conservation, and the most influential of these in Nottinghamshire are the Countryside Stewardship and Nitrate Sensitive Areas Schemes, administered by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture Fisheries and Food (MAFF).

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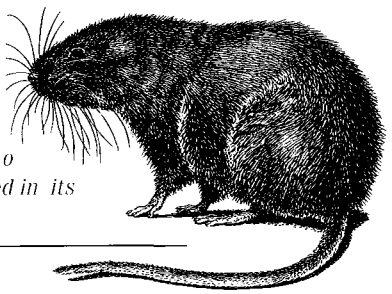
6.4.4 A range of other organisations provide grants for habitat management and creation, including Local Authorities, English Nature and the Greenwood Community Forest. All of these schemes could potentially deliver Biodiversity Action Plan objectives, and it is important that the organisations concerned consider how this might be achieved. In particular, one of the most important generic actions for biodiversity identified in section 5 is to explore the strategic use of such schemes in creating and restoring habitats in areas which link or buffer existing sites, building on the experience of the pilot Habitat Restoration Scheme in Sherwood Forest (section 4.4.4).

6.5 PUBLIC INVOLVEMENT: LOCAL AGENDA 21

6.5.1 The conservation of biodiversity is a crucial aspect of sustainable development, and it is for this reason that Biodiversity Action Plans are an integral part of the Agenda 21

Release date: 1998

process. Local action for biodiversity will be encouraged through the process of public participation, involvement and ownership developed by Local Agenda 21, and a co-ordinated approach across all partners will be encouraged by the Biodiversity Action Group, guided by the priorities and issues identified in this plan.



The water vole is very popular, and a county survey would be an excellent way to get people involved in its conservation.

6.5.2 A large number of initiatives are under way in Nottinghamshire to raise awareness of environmental issues and encourage local action. Many of these include a wildlife component, and can play a significant role in meeting biodiversity objectives. In addition, this plan provides an opportunity for a more focused strategy to achieve specific objectives, and a series of both county-wide and community projects will be initiated by the plan partnership as a result. The use of the 'flagship' species and habitats identified through the consultation process is one way in which action for biodiversity can be promoted, and habitat and species action plans also provide a means of inviting involvement. Surveys of easily identifiable species, practical site-based projects and publicity campaigns promoting individual action may all result from habitat or species plans.

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6.6 DATA COLLECTION AND MONITORING

6.6.1 There is an urgent need to establish an agreed baseline set of data for key aspects of biodiversity in Nottinghamshire (as in the rest of the UK) and to monitor this over time. A Local Biodiversity Action Plan, by identifying priorities and targets for data collection and monitoring, enables resources to be targeted to where they are most effective. The focus for biological data collection in the County is the Nottinghamshire Biological and Geological Records Centre (NBGRC), which will take the lead in this process, supported by many other organisations. A nationwide network of interlinked county record centres is being set up to facilitate national biodiversity monitoring, and the NBGRC is in the second tranche of centres to be included in this scheme. However, as has been said elsewhere in this plan, the system for handling biodiversity information in the County is at present seriously underfunded, and unless this situation changes, the provision of the data required for (for example) land use planning decisions, sustainability indicators, State of the Environment Reports, and the successful implementation of this plan will be extremely difficult.

6.6.2 There are a number of national, regional, county-wide and local programmes that can provide information for biodiversity survey and monitoring in Nottinghamshire, and it is essential that all the organisations involved in monitoring make information available through the NBGRC. In addition to this, monitoring schemes for action plan species and habitats which are not already monitored will need to be initiated.

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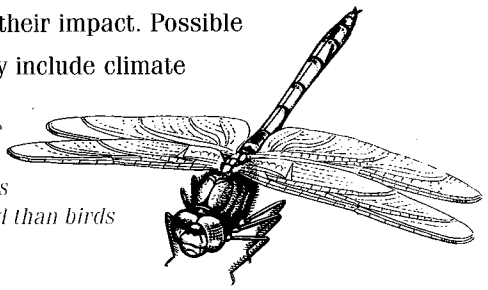
6.6.3 A biodiversity monitoring scheme should include the ability both to monitor the quality of the environment generally, and to quantify the extent of perceived threats by measuring their impact. Possible threats may include climate



✸ *Invertebrate groups are generally less well recorded than birds or mammals.*

change, changing agricultural systems or development. Where populations or habitats are very small, restricted, or fragmented, the risk of extinction from threats is increased, and although the impact of the loss of a single site may apparently be insignificant, the cumulative effects of land use change are very great. A system for monitoring the long-term effects of specific threats on biodiversity should be a priority, and is particularly important for local authorities, who need to monitor the effects of their policies on biodiversity as an indicator of sustainable development.

CURRENT BIODIVERSITY MONITORING - EXAMPLES

Nationwide (UK or Great Britain)

- BTO/RSPB/JNCC Breeding Bird Survey
- Butterfly Conservation 'Butterflies for the New Millennium' Atlas
- The National Bat Monitoring Programme
- Botanical Society of the British Isles 'Atlas 2000'
- JNCC Invertebrate Site Register

Nottinghamshire

- The County Audit (Phase 1 habitat survey)
- The Nottinghamshire Heathland Inventory
- Reptile and amphibian distribution surveys

Release date: 1998

6.7 RESOURCE IMPLICATIONS

6.7.1 The UK Biodiversity Action Plan[1] commits the Government to producing costed action plans for key species and habitats. Evaluating the costs and benefits of biodiversity is a very complex and rapidly evolving field, and a number of different approaches may be adopted. The Biodiversity Action Group awaits clear government guidance, and once this is forthcoming, it is envisaged that all Nottinghamshire habitat and species action plans will be costed.

6.7.2 What is becoming clear from the work being done nationally, however, is that choosing the route of conservation often *saves* money for the public purse and society as a whole.

6.7.3 The 'marketed benefits' of biodiversity are relatively straightforward to value. The value of timber generated from the expansion of native woodlands, for example, or the value of wetlands in waste water treatment systems. Wildlife is increasingly being recognised as an important output of rural land use, and this has already resulted in environmental schemes which have the added benefit of supporting rural employment and income. A further form of marketed biodiversity is 'green tourism', and studies of the value of this to local economies have revealed that biodiversity can support them in tangible and important ways[4].

6.7.4 Economists continue to grapple with the difficulties of evaluating non-market benefits, such as the value of an attractive, wildlife-rich countryside to a community, or the value of woods and hedges in preventing soil erosion. Because environmental benefits such as these are difficult to value in traditional

economic terms, they are often ignored or undervalued when decisions affecting them are made. This makes it all the more important that the Precautionary Principle (section 2.4) be adopted in all decisions where environmental considerations are involved.

6.7.5 This action plan makes it clear that much greater effort is needed if we are to stop and reverse the decline in Nottinghamshire's biodiversity. This will inevitably mean an increase in investment in nature conservation, although major gains can often be achieved at a relatively modest cost, or through the redirection of existing funds. The high profile of the global biodiversity initiative makes this plan an excellent platform for raising funds, and it will provide a means of ensuring that resources are targeted to maximum effect.

6.7.6 Too often, however, public expenditure is used to support activities that undermine biodiversity, leaving considerable problems which require further expenditure to address. Pursuing a more balanced, sustainable approach would therefore bring substantial savings. As stated in the first edition of 'Biodiversity Challenge'[5]:

"Some aspects of conservation do require greater effort and expenditure. However, the biggest threat to wildlife and the environment continues to come from publicly funded land-use and infrastructure programmes that fail to take sufficient, or accurate account of their consequences".

Release date: 1998

6

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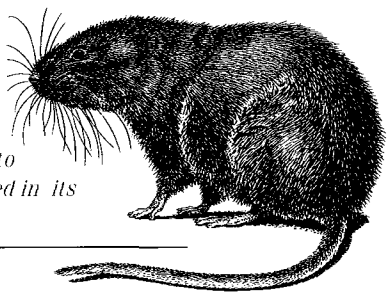

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Release date: 1998

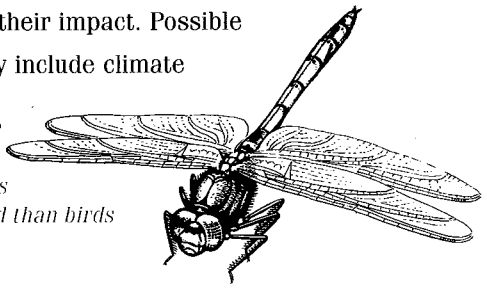
6.6 DATA COLLECTION AND MONITORING

6.6.1 There is an urgent need to establish an agreed baseline set of data for key aspects of biodiversity in Nottinghamshire (as in the rest of the UK) and to monitor this over time. A Local Biodiversity Action Plan, by identifying priorities and targets for data collection and monitoring, enables resources to be targeted to where they are most effective. The focus for biological data collection in the County is the Nottinghamshire Biological and Geological Records Centre (NBGRC), which will take the lead in this process, supported by many other organisations. A nationwide network of interlinked county record centres is being set up to facilitate national biodiversity monitoring, and the NBGRC is in the second tranche of centres to be included in this scheme. However, as has been said elsewhere in this plan, the system for handling biodiversity information in the County is at present seriously underfunded, and unless this situation changes, the provision of the data required for (for example) land use planning decisions, sustainability indicators, State of the Environment Reports, and the successful implementation of this plan will be extremely difficult.

6.6.2 There are a number of national, regional, county-wide and local programmes that can provide information for biodiversity survey and monitoring in Nottinghamshire, and it is essential that all the organisations involved in monitoring make information available through the NBGRC. In addition to this, monitoring schemes for action plan species and habitats which are not already monitored will need to be initiated.

Release date: 1998

6.6.3 A biodiversity monitoring scheme should include the ability both to monitor the quality of the environment generally, and to quantify the extent of perceived threats by measuring their impact. Possible threats may include climate



✸ *Invertebrate groups are generally less well recorded than birds or mammals.*

change, changing agricultural systems or development. Where populations or habitats are very small, restricted, or fragmented, the risk of extinction from threats is increased, and although the impact of the loss of a single site may apparently be insignificant, the cumulative effects of land use change are very great. A system for monitoring the long-term effects of specific threats on biodiversity should be a priority, and is particularly important for local authorities, who need to monitor the effects of their policies on biodiversity as an indicator of sustainable development.

CURRENT BIODIVERSITY MONITORING - EXAMPLES

Nationwide (UK or Great Britain)

- BTO/RSPB/JNCC Breeding Bird Survey
- Butterfly Conservation 'Butterflies for the New Millennium' Atlas
- The National Bat Monitoring Programme
- Botanical Society of the British Isles 'Atlas 2000'
- JNCC Invertebrate Site Register

Nottinghamshire

- The County Audit (Phase 1 habitat survey)
- The Nottinghamshire Heathland Inventory
- Reptile and amphibian distribution surveys

Release date: 1998

6.7 RESOURCE IMPLICATIONS

6.7.1 The UK Biodiversity Action Plan[1] commits the Government to producing costed action plans for key species and habitats. Evaluating the costs and benefits of biodiversity is a very complex and rapidly evolving field, and a number of different approaches may be adopted. The Biodiversity Action Group awaits clear government guidance, and once this is forthcoming, it is envisaged that all Nottinghamshire habitat and species action plans will be costed.

6.7.2 What is becoming clear from the work being done nationally, however, is that choosing the route of conservation often *saves* money for the public purse and society as a whole.

6.7.3 The 'marketed benefits' of biodiversity are relatively straightforward to value. The value of timber generated from the expansion of native woodlands, for example, or the value of wetlands in waste water treatment systems. Wildlife is increasingly being recognised as an important output of rural land use, and this has already resulted in environmental schemes which have the added benefit of supporting rural employment and income. A further form of marketed biodiversity is 'green tourism', and studies of the value of this to local economies have revealed that biodiversity can support them in tangible and important ways[4].

6.7.4 Economists continue to grapple with the difficulties of evaluating non-market benefits, such as the value of an attractive, wildlife-rich countryside to a community, or the value of woods and hedges in preventing soil erosion. Because environmental benefits such as these are difficult to value in traditional

Release date: 1998

economic terms, they are often ignored or undervalued when decisions affecting them are made. This makes it all the more important that the Precautionary Principle (section 2.4) be adopted in all decisions where environmental considerations are involved.

6.7.5 This action plan makes it clear that much greater effort is needed if we are to stop and reverse the decline in Nottinghamshire's biodiversity. This will inevitably mean an increase in investment in nature conservation, although major gains can often be achieved at a relatively modest cost, or through the redirection of existing funds. The high profile of the global biodiversity initiative makes this plan an excellent platform for raising funds, and it will provide a means of ensuring that resources are targeted to maximum effect.

6.7.6 Too often, however, public expenditure is used to support activities that undermine biodiversity, leaving considerable problems which require further expenditure to address. Pursuing a more balanced, sustainable approach would therefore bring substantial savings. As stated in the first edition of 'Biodiversity Challenge'[5]:

"Some aspects of conservation do require greater effort and expenditure. However, the biggest threat to wildlife and the environment continues to come from publicly funded land-use and infrastructure programmes that fail to take sufficient, or accurate account of their consequences".

Release date: 1998

6

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Release date: 1998

7 HABITAT ACTION PLANS

7.1 INTRODUCTION

7.1.1 The list of Local Biodiversity Action Plan priority habitats may be found in Appendix B. The aim is to produce habitat action plans for all of these habitats, in order to meet the needs of as many species as possible. On initial publication, this document will contain six habitat action plans, and the remainder will be added at periodic reviews.

7.2 FORMAT

7.2.1 The format used for habitat action plans is derived from the UK Biodiversity Steering Group Report[1] and 'Biodiversity Challenge'[2]. The main elements are as follows:

7.2.2 Current Status

A brief definition of the habitat, and description of its status in Nottinghamshire, relating this to the national picture.

7.2.3 Threats

A list of the main factors threatening and/or causing the decline of the habitat in Nottinghamshire.

7.2.4 Current Initiatives - Examples

A list of examples of conservation initiatives currently underway in the County which are relevant to the habitat.

7.2.5 Targets

A list of conservation targets to be met, giving the timescales over which they are to be achieved. Targets are formulated according to Government guidance[3], and where a habitat has a UK action plan, local targets reflect

Release date: 1998

national ones. Targets must be ambitious but realistic, and measurable to allow progress to be monitored. Timescales are in multiples of five years from 1995 to facilitate recording and reporting, and to reflect UK biodiversity targets so that national monitoring is possible.

7.2.6 Proposed Action

A list of the actions needed to achieve the targets. Where there is a national habitat action plan, any relevant action points from this have been included in the local one, and then additional actions needed in Nottinghamshire added. This is to enable us to fulfil our responsibilities under the UK Biodiversity Action Plan[4].

7.2.7

Many organisations have a key part to play in delivering the actions, and although it is obviously inappropriate to make prescriptions for individual land managers, their central role in the implementation process cannot be over-emphasised. Only a selection of organisations have been listed against each action point (in no particular order), and it is important to recognise that the success of this plan depends on the commitment of all those who have an impact on biodiversity, not just those already involved in nature conservation.

7.2.8 What You Can Do

This section is unique to the Nottinghamshire Local Biodiversity Action Plan, and has been added to make action plans more relevant to individual people living in the County, as well as organisations. It contains a few examples of things that individuals can do to participate in the conservation of the habitat.

7.2.9 Species List

Examples of priority species (Appendix A), which will benefit from the habitat action plan.

Release date: 1998

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REFERENCES

1 UK Biodiversity Steering Group. (1995). *Biodiversity: The UK Steering Group Report, Volume 2: Action Plans*. HMSO, London

2 Wynne, G, Avery, M, et al. (1995). *Biodiversity Challenge* (2nd edition). RSPB, Sandy

3 UK Local Issues Advisory Group. (1997). *Guidance Notes For Local Biodiversity Action Plans*. Local Government Management Board / UK Biodiversity Steering Group

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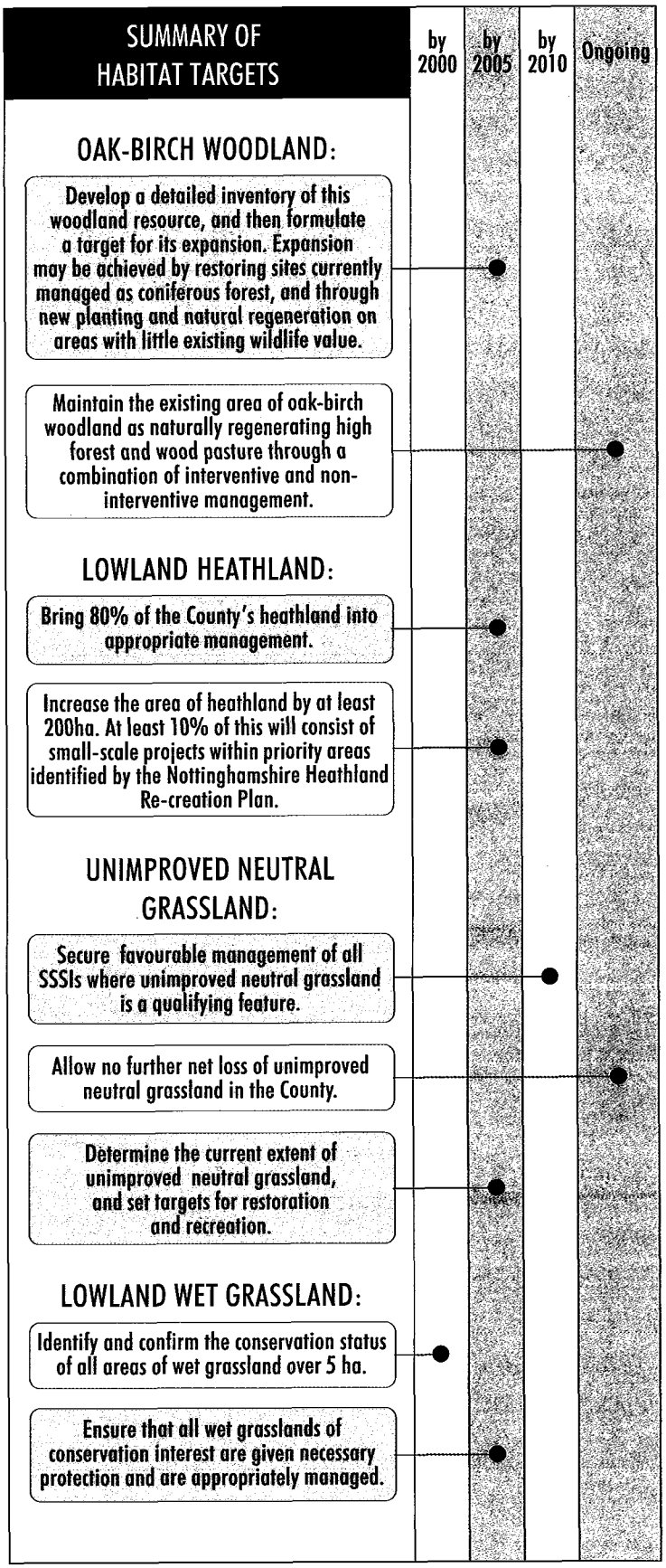

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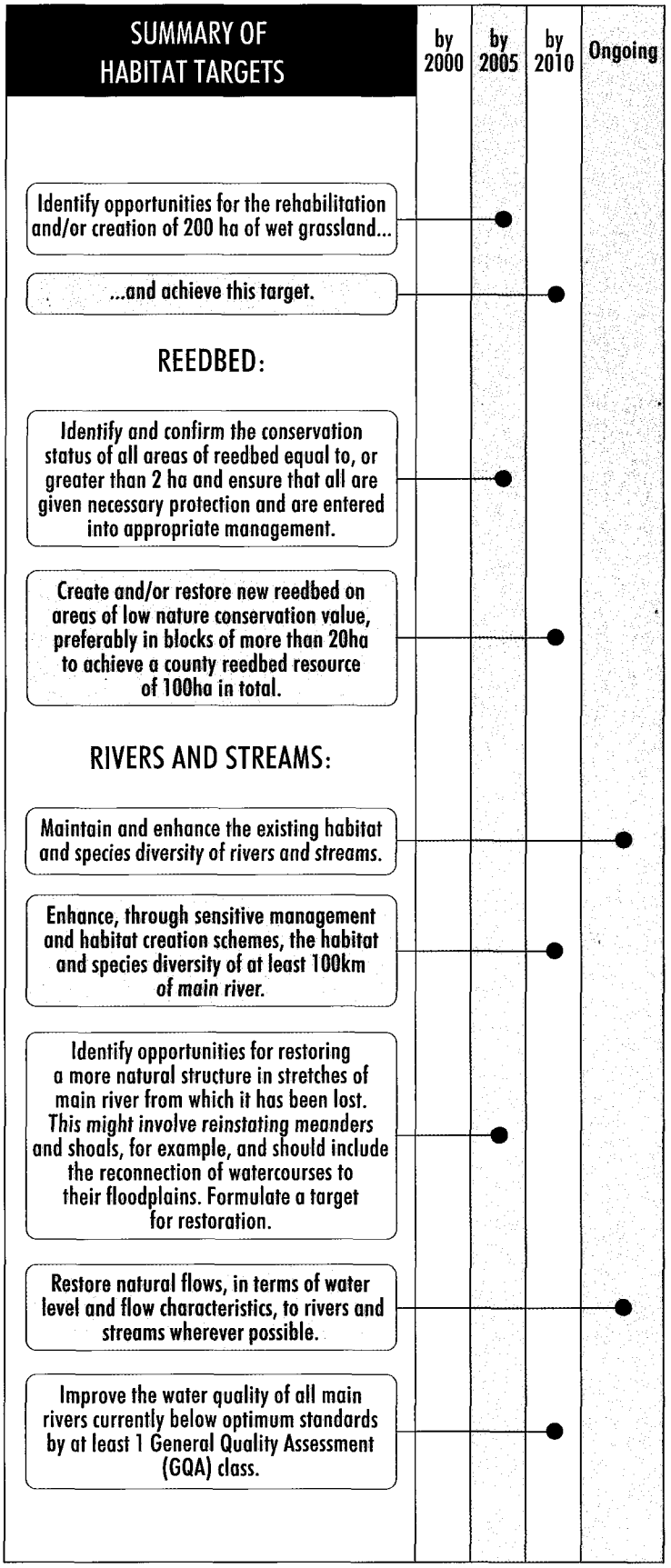

Release date: 1998

OAK-BIRCH WOODLAND

AUTHOR: **Dr Peter Shepherd**

LEAD AGENCY: The Forestry Authority
The Stables
Strelley Hall
Strelley
Nottingham
NG8 6PE

MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

Oak-birch woodlands are those on acid soils in which pedunculate oak and silver birch are the principal tree species. On very acid sandy soils oak and birch dominate the canopy, with occasional yew and rowan. The understorey is sparse and patchy, with saplings of the main canopy trees plus species such as holly, and the ground flora is dominated by wavy hair grass and bracken with a range of other grasses and herbs. Ling heather, bell heather and bilberry occur infrequently in glades. On less acidic brown earths a greater variety of trees may be present, and the understorey may include shrubs such as hazel, hawthorn and holly. The ground flora is usually dominated by a combination of bramble and bracken, with climbers such as honeysuckle and grasses including Yorkshire fog and creeping soft grass. Bluebell and wood anemone may also occur.

Before man began to have a significant impact on the landscape, much of England would have been wooded. With the exception of Sherwood, however, modern Nottinghamshire is not a well wooded County, and even Sherwood Forest now consists largely of conifer plantations. Ancient

Release date: 1998

woodland constitutes only 14% of the total, and ancient oak-birch woodland is restricted to a few isolated fragments. The total area of ancient and recent oak-birch woodland in the County is not yet known.

Nottinghamshire's oak-birch woodlands support a high diversity of wildlife, and ancient woodland sites are especially valuable for their ancient trees, which are often lacking in modern woodlands. Bats such as noctule and brown long-eared bat roost and hibernate in the trees, while the dead wood supports some of the most important invertebrate assemblages in the UK, with many rare species of spider, moth and beetle. The rich supply of invertebrates provides food for birds, and typical woodland species include jays, woodpeckers and birds of prey such as the sparrowhawk and tawny owl.

The woodlands also support a diverse fungal community. Commoner species include stinkhorn and typical associates of birch such as fly agaric. As well as fungi associated with the root systems of trees there are the bracket fungi of dead and dying trees such as beefsteak fungus, sulphur tuft and birch polypore. A number of fungi are rare and indicative of long established and ancient woodland sites. Hoof fungus occurs in the Birklands and Bilhaugh SSSI at its southern limit in the UK.

▶ THREATS

The main factors currently affecting the County's oak-birch woodlands are:

- **The loss of forest to agriculture, mineral extraction and development.**
- **The replacement of native broad-leaved trees with non-native conifers and hardwoods such as red oak and beech**

Release date: 1998

- The invasion and spread of non-native trees and shrubs such as rhododendron.
- The increasing dominance of the woodland ground flora by bracken, which creates a fire hazard, causes water stress for ancient trees, and smothers regeneration.
- The tendancy of woodland managers to 'tidy up' by removing dead wood, which is an essential part of any woodland habitat.
- Increasing summer droughts and reduction of water levels in the sandstone aquifer.
- Air pollution, in particular atmospheric enrichment through nitrogen deposition.
- Deer grazing preventing regeneration in some areas. This needs to be balanced with the need to increase grazing in other areas for bracken control and heathland management.
- Lack of management of many woods in private ownership.
- Conflicting interests between tourism and the conservation management of key 'honey pot' sites. In particular increasing visitor pressure can cause undue disturbance and impact on the ecology of this habitat.

▶ CURRENT INITIATIVES - EXAMPLES

- Many private landowners manage areas of oak-birch woodland, and have a vital part to play in its conservation.
- Nottinghamshire County Council, Forest Enterprise and RJB Mining are planting oak-birch woodland as part of the restoration of colliery spoil tips.
- Forest Enterprise are restoring 150ha of oak-birch woodland and rehabilitating surviving ancient oak hulks by the gradual removal of coniferous plantation in the Birklands and Bilhaugh SSSI and adjacent land. Management plans for both SSSI and non-SSSI parts of the site have been finalised.
- The Woodland Trust seeks to acquire sites on which to establish new oak-birch woodlands, or manage existing ones, in appropriate parts of the County.
- Oak-birch woodland on several sites is managed under the Woodland Grant Scheme.
- Center Parcs, the Thoresby Estate, English Nature and RJB Mining are all involved in oak-birch woodland restoration and management projects.

Release date: 1998

- Ancient woodland sites are given specific protection under the Nottinghamshire Structure Plan
- English Nature have recorded the location and condition of all the ancient oak hulks within the Birklands and Bilhaugh SSSI and Forest Enterprise have undertaken a similar exercise in the adjacent oak-birch restoration project area.
- The Greenwood Community Forest and the Sherwood Forest Trust are promoting the planting of new woodland and the management of existing sites.
- English Nature and the Sherwood Forest Trust are looking at how to solve the ecological problems associated with habitat fragmentation in the Sherwood area, and have developed bracken rollers for the management of bracken in oak-birch woodland.
- The ancient oak-birch woodland within the Birklands and Bilhaugh SSSI is a candidate Special Area for Conservation under the European Habitats and Species Directive, mainly due to its important dead wood invertebrate communities.
- Other SSSIs also support oak-birch woodland, including Strawberry Hill SSSI, Sherwood Golf Course SSSI and Rainworth Heath SSSI.
- Woodlands can be protected by Tree Preservation Orders.
- National forestry policies include a presumption against the clearance of any broad-leaved woodland for conversion to other land uses, and seek in particular to maintain the ecological interest of ancient semi-natural woodland.
- English Nature have compiled a provisional ancient woodland inventory for Nottinghamshire.

▶ TARGETS

- Develop a detailed inventory of this woodland resource, and formulate a target for its expansion by 2005. Expansion may be achieved by restoring sites currently managed as coniferous forest, and through new planting and natural regeneration on areas with little existing wildlife value.
- Maintain the existing area of oak-birch woodland as naturally regenerating high forest and wood pasture through a combination of interventive and non-interventive management.

Release date: 1998

▶ PROPOSED ACTION

Policy and Legislation

1 Encourage the uptake of Indicative Forestry Strategies or similar landscape planning devices to provide a context for and to promote expansion and positive management of oak-birch woodland.

ACTION: FORESTRY AUTHORITY (FA), ENGLISH NATURE (EN), SHERWOOD FOREST TRUST (SFT) LOCAL AUTHORITIES (LAs), GREENWOOD COMMUNITY FOREST (GCF).

2 Ensure the "Guidelines for Sustainable Forestry" agreed at the 1993 Helsinki Conference are incorporated into future forestry policy.

ACTION: FA.

3 Through planning control, allow no further loss of ancient oak-birch woodland to development or other land-use change, and seek opportunities to create new areas of oak-birch woodland through approved developments.

ACTION: LAs.

4 Declare Local Nature Reserves on relevant areas of oak-birch woodland or instigate other appropriate measures for their protection.

ACTION: LAs, EN.

5 Review the SSSI coverage of oak-birch woodland in Nottinghamshire by 2000. Designate any new sites which meet the required criteria by 2005.

ACTION: EN.

Site Safeguard and Management

6 Complete the designation of the proposed Special Area for Conservation at the Birklands and Bilhaugh SSSI by 2005.

ACTION: DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS.

7 Promote the management and restoration of oak-birch woodland in Forest Design Plans, especially where the impacts of habitat fragmentation can be reduced or collections of ancient trees protected.

ACTION: FA, FOREST ENTERPRISE (FE).

8 Develop criteria to select priority target areas in which to create and restore damaged or former ancient oak-

CONTINUED OVER...

Release date: 1998

birch woodland by 2005. The criteria should be consistent with the lowland heathland re-creation plan.

ACTION: SFT, FA, EN, GCF, NOTTINGHAMSHIRE COUNTY COUNCIL (NCC), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

9 Promote the uptake of the Woodland Grant Scheme and other funding mechanisms to achieve desirable woodland management and creation opportunities in targeted areas.

ACTION: FA, EN, SFT, GCF, LAs, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

10 Undertake a review of the condition of the oak-birch woodland resource managed by Forest Enterprise by 2000.

ACTION: FE.

11 Review and update the ancient woodland inventory for Nottinghamshire by 2005.

ACTION: EN, NWT, NCC, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

Advisory

12 Provide informal and formal training at a local level on the ecology, conservation and management of oak-birch woodland in Nottinghamshire.

ACTION: SFT, GCF, EN, NWT, FE, NCC, BTCV.

13 Establish a number of demonstration sites to show good practice in woodland management.

ACTION: LAs, NWT, EN, FE, WOODLAND TRUST (WT), NATIONAL TRUST (NT).

14 Organisations with experience of woodland management should continue to provide advice to land managers on the management of oak-birch woodland.

ACTION: EN, NWT, NCC, FE, ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB).

Future Research and Monitoring

15 Prepare an inventory of woodland and non-woodland ancient trees within the Sherwood area building on the survey of Birklands and Bilhaugh SSSI by English Nature.

ACTION: SFT, FA, FE, GCF, NWT, LAs, EN.

Release date: 1998

16 Undertake practical trials for restoring oak-birch woodland following the removal of coniferous plantation.

ACTION: SFT, FE, NWT, EN.

17 Establish a series of bracken management monitoring sites to determine the most effective method by which bracken dominance in oak-birch woodland, particularly around ancient trees, can be controlled.

ACTION: SFT, FE, NWT, EN.

18 Undertake practical trials for re-introducing grazing in parts of the Birklands and Bilhaugh SSSI and other selected oak-birch woodlands. Monitor the impact of grazing on natural regeneration and woodland ground flora.

ACTION: EN , SFT, FE, NWT, NCC.

19 Investigate the importance of ancient trees in the Sherwood Forest area for roosting bats.

ACTION: EN, NOTTINGHAMSHIRE BAT GROUPS.

20 Investigate future potential markets for non-timber woodland products from oak-birch woodland in the Sherwood Forest area.

ACTION: SFT, GCF, FA, EN, FARMING AND WILDLIFE ADVISORY GROUP (FWAG), NWT, BTCV.

21 Establish a monitoring procedure to compare achievements to habitat and species targets and revise this Action Plan as necessary.

ACTION: BIODIVERSITY ACTION GROUP, FA, SFT, NCC

Communications and Publicity

22 Devise a strategy for the distribution of existing advisory material to woodland owners and managers and fill any gaps in the advisory material available by 2000.

ACTION: FA, EN, NWT, LAs, SFT, FWAG.

23 Efforts should be made to improve public appreciation of the importance of oak-birch woodland in the Sherwood area and the potential harm that can be caused by high visitor pressure and undesirable activities.

ACTION: FA, EN, NWT, LAs, SFT, FWAG, NCC.

Release date: 1998

▶ WHAT YOU CAN DO

- If you are planning to do any tree planting, try to use native species appropriate to the area, as these are much more valuable for wildlife than non-native species. Advice is available from a range of sources.
- Adopt a local ancient tree or oak-birch woodland and help towards its good management.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Noctule bat**
- **Speckled bush cricket**
- **Brown long-eared bat**
- **Great oak beauty moth**
- **Fallow deer**
- **Pearl bordered fritillary butterfly**
- **Tawny owl**
- **Alternate leaved golden saxifrage**
- **Nuthatch**
- **Great wood rush**
- **Treecreeper**
- **Herb Paris**
- **Lesser spotted woodpecker**
- **Wood dog violet**
- **Green woodpecker**
- **Bluebell**
- **Great spotted woodpecker**

Release date: 1998

LOWLAND HEATHLAND

LEAD AGENCY: The Sherwood Forest Trust
c/o English Nature
The Maltings
Wharf Road
Grantham
Lincolnshire
NG31 6BH

MOST RECENT UPDATE: May 1998

CURRENT STATUS

Lowland heathland is characterised by the presence of plants of the heather family, and is found below 300m in altitude. Nottinghamshire heathlands are generally of a 'grass heath' type, with ling and bell heather interspersed with fine grasses such as wavy hair-grass, and shrubs such as gorse. They are characteristic of the poor acid soils of the Sherwood and East Nottinghamshire Sandlands areas.

Lowland heathland is an internationally rare and threatened habitat, identified as a priority under European law. Britain supports one fifth of the world's lowland heathland, despite a decline of 75% in the national resource since 1800. In Nottinghamshire we have lost around 90% of our heathland since 1922, and today only about 250ha exists within the County, (0.4% of the total UK area). In addition to this, 120ha of forestry plantation will be restored to heathland by Forest Enterprise by 2002, and 124ha of new heathland is being created on old colliery land by RJB Mining.

Release date: 1998

THREATS

The main factors currently affecting the County's heathlands are:

- Encroachment of bracken, trees and scrub, and the loss of species diversity due to a lack of traditional management such as light grazing, controlled burning and cutting.
- Fragmentation and disturbance from development such as mineral extraction, housing and roads.
- Conversion to forestry or agriculture (mainly historical).
- Recreational pressure.

CURRENT INITIATIVES - EXAMPLES

- A national Habitat Action Plan for Lowland Heathland has been prepared.
- Many private landowners manage areas of heathland, and have a vital part to play in its conservation.
- The Nottinghamshire Heathland Strategy (of which this plan will form a part) establishes a framework for the conservation of heathland in the County.
- The Nottinghamshire Lowland Heathland Inventory was published in 1995 by the RSPB and English Nature, and a more detailed Heathland Register is currently in preparation.
- A Heathland Re-creation Plan for the County was published in 1997.
- Forest Enterprise will not seek further afforestation of heathland in the County. It is planned to restore and manage 120ha of heathland on Forestry Commission land in Nottinghamshire by 2002. 87ha have been restored so far.
- 124ha of heathland are being created by 2015 at Rufford, Thoresby and Clipstone Collieries by RJB Mining. 30ha has been created so far.
- The National Trust manage lowland heathland at Clumber Park, and extensive heathland re-creation is planned over the next ten years.
- The majority of the best existing heathland areas are within Sites of Special Scientific Interest (SSSIs), notified by English Nature.
- Sherwood Heath, managed by Newark and Sherwood District Council, is a Local Nature Reserve (LNR). Other heaths are Sites of Importance for Nature Conservation (SINC).

Release date: 1998

- **Nottinghamshire Wildlife Trust manages 10ha of heathland in its Nature Reserves. BTCV is involved in heathland management at a variety of sites.**
- **Mansfield District Council (Oak Tree Heath), English Nature (Clipstone Heath), and Sherwood Forest Golf Club all manage heathland sites for nature conservation.**
- **All significant areas of heathland are given a degree of protection as SSSIs or SINCs .**
- **A total of 206ha of heathland is managed under the Countryside Stewardship and Reserves Enhancement Schemes, or English Nature management agreements. 4 areas on the Sherwood sandstone aquifer are covered by the Nitrate Sensitive Areas Scheme.**
- **Sherwood Forest is one of four trial areas in the English Nature Habitat Restoration Project. EN and the Sherwood Forest Trust are working together to tackle the problems associated with habitat fragmentation in the area.**

▶ TARGETS

To contribute towards the UK habitat action plan by:

- Bringing 80% of the County's heathland into appropriate management by 2005.
- Increasing the area of heathland by at least 200ha by 2005. At least 10% of this will consist of small-scale projects within priority areas identified by the Nottinghamshire Heathland Re-creation Plan.

▶ PROPOSED ACTION

Policy and Legislation

1 Through planning control, allow no further loss of heathland to development or other land use change, and seek opportunities to create new areas of heathland through approved developments.

ACTION: LOCAL AUTHORITIES (LAS), FORESTRY AUTHORITY (FA).

2 In Regional Character Areas that support lowland heathland, there should be a presumption in favour of re-establishing heathland on derelict land or land that has been used for mineral extraction.

ACTION: LAS.

Release date: 1998

Site Safeguard and Management

3 No further areas of heathland will be afforested. Restoration of heathland on Forestry Commission land will be in accordance with approved Forest Design Plans and management plans endorsed by English Nature.

ACTION: FOREST ENTERPRISE (FE), FA.

4 Declare Local Nature Reserves on relevant areas of heathland or instigate other appropriate measures for their protection.

ACTION: LAS, ENGLISH NATURE (EN)

5 Where significant gaps in the SSSI coverage of lowland heathland are identified, the appropriate procedure should be implemented by 2000.

ACTION: EN.

6 The long term funding of a county heathland management project needs to be addressed.

ACTION: THE NOTTS HEATHLAND FORUM (NHF), THE SHERWOOD FOREST TRUST (SFT).

7 Projects to establish heathland vegetation should be initiated in areas identified by the Nottinghamshire Heathland Re-creation Plan, giving priority to areas that interlink or extend existing heaths. The MAFF Countryside Stewardship Scheme presents opportunities for habitat creation, and colliery tips in particular have a great deal of potential.

ACTION: NHF, SFT, MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF), FARMING AND RURAL CONSERVATION AGENCY (FRCA).

Advisory

8 Organisations with experience of heathland management should continue to provide advice to land managers on how to manage and restore lowland heathland, and co-ordinate their efforts through the Notts Heathland Forum.

ACTION: EN, FE, LA S, FARMING AND WILDLIFE ADVISORY GROUP (FWAG), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB), SFT.

Release date: 1998

Future Research and Monitoring

9 Establish a monitoring programme to compare achievements to habitat and species targets and revise the Action Plan if necessary.

ACTION: BIODIVERSITY ACTION GROUP (BAG), NHF.

10 Ensure that the Nottinghamshire Heathland Register is periodically updated.

ACTION: NHF.

11 Analyse and apply the results of the Notts Heathland Register and Re-creation Plan so that resources can be targeted effectively.

ACTION: NHF.

12 Ensure that heathland sites are periodically resurveyed as part of the Notts Nature Conservation Audit and its successors, and information lodged with the County Records Centre.

ACTION: NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC), AUDIT STEERING GROUP, NWT.

Communications and Publicity

13 Efforts should be made to improve public appreciation of heathlands by appropriate interpretation and education. Public access to sites should be encouraged where this does not conflict with the nature conservation status, other uses of the site, or the wishes of the *landowner.*

ACTION: NHF, LAs.

▶ WHAT YOU CAN DO

- Volunteer as a warden on a heathland site.
- When walking on a heath, make a note of the plants and animals you see, and send your records to the Nottinghamshire Biological and Geological Records Centre at Wollaton Hall. Expert knowledge is not required!

Release date: 1998

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Adder**
- **Ling pug moth**
- **Common lizard**
- **Small chocolate tip moth**
- **Grey partridge**
- **Smoky wave moth**
- **Hen harrier**
- **Annulet moth**
- **Nightjar**
- **White colon moth**
- **Common ground hopper**
- **Creeping willow**
- **Clouded buff moth**
- **Cross-leaved heather**
- **Grass wave moth**
- **Greater broomrape**
- **Large red-belted clearwing moth**
- **Heath cudweed**

Release date: 1998

UNIMPROVED NEUTRAL GRASSLAND

LEAD AGENCY: Nottinghamshire Wildlife Trust
The Old Ragged School
Brook Street
Nottingham
NG1 1EA

MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

The vast majority of Nottinghamshire's grasslands have been 'improved' by the use of fertilisers and/or reseeding with rye grass. Traditional 'unimproved' grasslands occur in small fields as hay meadows and pastures, and as fragments on road verges, golf courses, churchyards and other non-agricultural land. They are characterised by a colourful mixture of grasses and herbaceous species such as cowslip, ox-eye daisy and meadow vetchling, with rushes, marsh marigold and ragged robin in wetter areas. These grasslands are typical of areas such as the mid-Nottinghamshire Farmlands, with neutral soils. This plan does not cover the extensive floodplain grasslands of the river valleys, which fall under the Lowland Wet Grassland habitat action plan, although there is some overlap in vegetation type.

Between 1930 and 1984 unimproved lowland grassland of all types decreased by an estimated 97% in England and Wales, as a result of agricultural intensification. Losses have continued during the 1980s and 90s, and have been recorded at 2-10% per annum in some counties. The East Midlands has a particularly high rate of loss, and although the

Release date: 1998

current extent is not accurately known, it is estimated that Nottinghamshire's unimproved grassland has declined by 97-99% since 1930. Lowland hay meadow is an internationally rare and threatened habitat, and some types are identified as a priority under European law.

▶ THREATS

The main factors currently affecting the County's unimproved neutral grasslands are:

- **Agricultural improvement through drainage, ploughing, re-seeding and fertiliser treatment.**
- **The shift from hay making to silage production, with more frequent and often earlier annual cutting, reducing seeding opportunities for plants and hence eventually species richness.**
- **Lack of management, leading to bracken and scrub encroachment.**
- **Lack of aftermath grazing following cutting, leading to a loss of species richness.**
- **Supplementary stock feeding, which introduces more nutrients than are removed, leading to fertilisation.**
- **Application of herbicides and pesticides.**
- **Atmospheric nutrient input.**
- **Loss of species due to heavy grazing pressure.**

▶ CURRENT INITIATIVES - EXAMPLES

- **A UK Habitat Action Plan for Lowland Hay Meadows has been prepared, which covers the same habitat types as this plan.**
- **English Nature has compiled a lowland grassland inventory, and the County's most important sites are designated as SSSIs.**
- **Road verges of value for biodiversity are designated as Notified Road Verges by the County Council.**
- **Many private landowners manage areas of unimproved neutral grassland, and have a vital part to play in its conservation.**
- **Nottinghamshire Wildlife Trust manages 75ha of unimproved neutral grassland in its Nature Reserves.**

Release date: 1998

- **Newark and Sherwood District Council manages 2ha of unimproved neutral grassland within Devon Park Pastures Local Nature Reserve.**
- **Areas of unimproved neutral grassland designated as SINCs are given a degree of protection under the planning system.**
- **Advice on grassland management is available from a variety of sources.**

▶ TARGETS

To contribute towards the UK habitat action plan by:

- Securing *favourable management of all SSSIs where* unimproved neutral grassland is a qualifying feature by 2010.
- Allowing no further loss of unimproved neutral grassland in the County.
- Determining the current extent of unimproved neutral grassland, and setting targets for restoration and re-creation by 2005.

▶ PROPOSED ACTION

Policy and Legislation

1 **Through planning control, allow no further loss of significant areas of unimproved neutral grassland to development or other land use change, and seek opportunities to create new areas through approved developments.**

ACTION: LOCAL AUTHORITIES (LAs), BIODIVERSITY ACTION GROUP (BAG).

2 **Ensure that agri-environment schemes include appropriate management regimes; design measures to suit local needs and in particular target schemes on local concentrations of remnant unimproved neutral grasslands.**

ACTION: MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (MAFF), FARMING AND RURAL CONSERVATION AGENCY (FRCA).

3 **Develop a strategy to restore and expand cover of unimproved neutral grassland, taking into account the need to counter the negative effects of fragmentation and isolation.**

ACTION: BAG, FRCA/MAFF.

Release date: 1998

Site Safeguard and Management

4 **Declare Local Nature Reserves on relevant areas of unimproved neutral grassland or instigate other appropriate measures for their protection.**

ACTION: LAs.

5 **Review the extent of SSSI coverage and consider notifying further sites as necessary to fill significant gaps.**

ACTION: ENGLISH NATURE (EN).

6 **Promote the uptake of positive management with managers of SSSIs and other wildlife sites.**

ACTION: EN, LAs, FARMING AND WILDLIFE ADVISORY GROUP (FWAG).

7 **Ensure that all Notified Road Verges are managed appropriately.**

ACTION: NOTTINGHAMSHIRE COUNTY COUNCIL (NCC).

Advisory

8 **Organisations with experience of grassland management should continue to provide advice to land managers on how to manage and restore it, and co-ordinate their efforts through effective liason.**

ACTION: EN, FWAG, LAs, NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB).

9 **Establish strategically located sites to demonstrate grassland management techniques.**

ACTION: BAG.

Future Research and Monitoring

10 **Establish a monitoring programme to compare achievements to habitat and species targets and revise the Action Plan if necessary.**

ACTION: BAG.

11 **Ensure that unimproved neutral grassland sites are periodically resurveyed as part of the Notts Nature Conservation Audit and its successors, with information lodged with the County Records Centre.**

ACTION: NWT, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE, AUDIT STEERING GROUP.

Release date: 1998

Communications and Publicity

12 Efforts should be made to improve public appreciation of unimproved neutral grasslands by appropriate interpretation and education. Public access to sites should be encouraged where this does not conflict with the nature conservation status, other uses of the site, or the wishes of the landowner.

ACTION: BAG.

▶ WHAT YOU CAN DO

- Create a wildflower 'meadow' in your garden by planting with wildflowers and grasses, and then cutting only after flowering has finished. Advice is available from Nottinghamshire Wildlife Trust.
- Encourage those responsible for managing your local churchyard or park to set aside an area to be managed for wildflowers. Encourage your Parish Council to be sympathetic to the management needs of Notified Road Verges.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Brown hare**
- **Green hairstreak butterfly**
- **Harvest mouse**
- **Green winged orchid**
- **Stoat**
- **Lesser stitchwort**
- **Barn owl**
- **Lesser trefoil**
- **Common buzzard**
- **Narrow-leaved meadow grass**
- **Corn bunting**
- **Narrow-leaved pepperwort**
- **Skylark**
- **Smith's cress**

Release date: 1998

LOWLAND WET GRASSLAND

LEAD AGENCY: Royal Society for the Protection of Birds
Westleigh Mews
Wakefield Road
Denby Dale
Huddersfield
West Yorkshire
HD8 8QD

MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

Lowland wet grassland may be defined as periodically flooded pasture or meadow, and includes floodplain grassland, washlands and water meadows. Almost all areas are grazed and some are cut for hay or silage. Sites typically possess ditches, and may contain seasonal water-filled hollows and permanent ponds. Lowland wet grassland falls within the UK Biodiversity Action Plan Coastal and Floodplain Grazing Marsh key habitat type.

The exact extent of lowland wet grassland in the UK is not known, although the UK Biodiversity Action Plan estimates some 300,000 ha of grazing marsh (including that in coastal areas) nationwide. It is a habitat that has decreased in extent by more than 40% since 1930, primarily as a result of drainage and agricultural improvements.

In Nottinghamshire, it is not clear what the distribution and extent of wet grassland ever was. However, before the post World War Two land drainage, flood protection and agricultural intensification schemes, the immense floodplain of the River Trent, along with those of its key

Release date: 1998

tributaries are likely to have included significant areas of wet grassland.

Wet grassland is now a very scarce resource in Nottinghamshire, and in 1993 English Nature (EN) estimated that only 2701ha existed within the County (this is likely to be an over-estimate). The key locations are currently in the Idle Valley, the Erewash floodplain and Smithy Marsh in the Trent Valley. Other smaller areas of wet grassland exist beside lakes, ponds and other waterbodies, particularly in the floodplains.

▶ THREATS

The main factors currently affecting Nottinghamshire's lowland wet grasslands are:

- **Lack of knowledge about extent and quality of resource.**
- **Small size and fragmented nature of the overall resource and individual sites.**
- **Agricultural intensification, including land drainage, and switches from extensive grassland management to silage or arable regimes.**
- **Insufficient water supply and inappropriate hydrological regimes for wet grassland sites, generally as a result of insensitive flood protection schemes, land drainage, and water abstraction.**
- **Poor water quality at some sites due to pollution of water courses from industry, domestic sewage and agricultural run-off (although water quality is generally improving).**
- **Lack of appreciation of the wildlife and wider benefits (eg flood water storage, aquifer re-charge) of wet grassland habitats.**
- **Lack of funds for the rehabilitation of wet grassland and for longer-term management.**

▶ CURRENT INITIATIVES - EXAMPLES

- **A UK Habitat Action Plan for Coastal and Floodplain Grazing Marsh has been prepared, which covers this habitat type.**

Release date: 1998

- Many private landowners manage areas of lowland wet grassland, and have a vital part to play in its conservation.
- The Environment Agency (EA) are incorporating wet grassland protection, management and rehabilitation into Local Environment Agency Plans (LEAPs).
- The Ministry of Agriculture Fisheries and Food (MAFF) have included wet grassland as one of the wetland habitats/features to be targeted through Countryside Stewardship in the County.
- A partnership of organisations have just launched The Wet Grassland Guide.This is to be promoted to a variety of audiences in the County, including key decision makers and land use advisers.
- Plans are under discussion to prepare a 'strategy' for the Trent Valley floodplain, with wet grassland as a target habitat for management and rehabilitation.
- Notts Wildlife Trust, the RSPB, EN and EA are involved in nature reserve management and rehabilitation projects for wet grassland in the Trent, Idle and Erewash Valleys.

▶ TARGETS

To contribute towards the UK habitat action plan by:

- Identifying and confirming the conservation status of all areas of wet grassland over 5 ha by 2000.
- Ensuring that all wet grasslands of conservation interest are given necessary protection and are appropriately managed by 2005.
- Identifying opportunities for the rehabilitation and/or creation of 200 ha of wet grassland by 2005, and achieving this target by 2010.

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure that lowland wet grassland opportunities are promoted through appropriate Environment Agency LEAPs and Water Level Management Plans.

ACTION: ENVIRONMENT AGENCY (EA).

2 Ensure that lowland wet grassland opportunities are promoted through appropriate regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LOCAL AUTHORITIES (LAS).

Release date: 1998

3 Take account of the conservation requirements of *wet grassland habitats in developing and adjusting* agri-environment schemes.

ACTION: MAFF, FARMING AND RURAL CONSERVATION AGENCY (FRCA).

4 Promote lowland wet grassland creation/restoration as an afteruse for mineral extraction sites.

ACTION: LAs, EA, SHERWOOD FOREST TRUST (SFT), RSPB, ENGLISH NATURE (EN), NOTTS WILDLIFE TRUST (NWT).

5 Continue to ensure that flood defence works are carried out in an ecologically sensitive manner.

ACTION: EA.

Site Safeguard and Management

6 Designate all lowland wet grassland sites which meet the relevant criteria as SSSI, LNR and/or Sites of Importance for Nature Conservation (SINCs).

ACTION: EN, LAs.

7 Oppose all developments or practices that are likely to adversely affect any recognised site of conservation value and sites identified as priorities for lowland wet grassland rehabilitation/restoration.

ACTION: LAs, EA, EN, RSPB, NWT.

8 Promote and secure the appropriate management of all designated lowland wet grassland sites, and others of significant conservation value.

ACTION: EN, EA, LAs, RSPB, NWT, FRCA, SFT.

Site Safeguard and Management

9 Consider acquisition of land of low nature conservation value for lowland wet grassland restoration.

ACTION: NWT, RSPB, SFT, EN.

10 Ensure appropriate management of lowland wet grassland sites under ownership/lease as nature reserves.

ACTION: NWT, EN, EA, LAs, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

Release date: 1998

Advisory

11 Provide advice on the rehabilitation and management of lowland wet grassland, particularly to owners and managers of sites over 10 ha.

ACTION: FARMING AND WILDLIFE ADVISORY GROUP (FWAG), RSPB, EN, NWT, EA, SFT.

Future Research and Monitoring

12 Complete and maintain a county inventory of wet grassland sites over 5 ha.

ACTION: NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

13 Monitor quality and management of wet grassland sites larger than 5 ha.

ACTION: RSPB, EN, NWT, NBGRC.

14 Monitor key lowland wet grassland species.

ACTION: RSPB, EN, NWT, NBGRC.

15 Identify suitable areas for lowland wet grassland rehabilitation and restoration.

ACTION: EA, LAs, RSPB, NWT, EN.

Communications and Publicity

16 Raise awareness and understanding of the importance of lowland wet grasslands and their conservation.

ACTION: BIODIVERSITY ACTION GROUP.

▶ WHAT YOU CAN DO

- Help your local branch of RSPB or the Nottinghamshire Bird Watchers to monitor birds on wet grassland sites.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Otter**
- **Wigeon**
- **Water vole**

CONTINUED OVER...

Release date: 1998

SPECIES LIST continued...

- **Teal**
- **Grass snake**
- **Bewick's swan**
- **Snipe**
- **Spined loach**
- **Lapwing**
- **Early marsh orchid**
- **Curlew**
- **Parsley water dropwort**
- **Redshank**

Release date: 1998

REEDBEDS

LEAD AGENCY: Royal Society for the Protection of Birds
Westleigh Mews
Wakefield Road
Denby Dale
Huddersfield
West Yorkshire
HD8 8QD

MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

Reedbeds are composed largely of common reed, and are often associated with areas of open water, ditches, and other wetland habitats. Reedbeds can be wet or dry at their base but the water table generally needs to be at or near ground level for most of the year. They provide important habitats for a wide range of species.

Nationally reedbeds have suffered huge declines in postwar years as a result of flood protection schemes, land drainage, agricultural intensification and abstraction. Due to loss of water and lack of management, many of the remaining reedbeds have also declined substantially in terms of habitat quality.

A national survey of UK reedbeds in 1993 estimated some 5,000 ha nationwide, with only 53 sites greater than 20 ha in size. This resource is concentrated mainly in coastal areas, and large inland reedbeds are extremely rare.

In Nottinghamshire, it is not clear what the distribution and extent of reedbed ever were. Before the intense land drainage, flood

Release date: 1998

protection and agricultural intensification schemes of the 20th century, the immense floodplain of the River Trent, along with those of its key tributaries are likely to been characterised by significant areas of wet fen, swamp and reedbed. However, it is now a very scarce resource in the County. A 1979 national survey identified only one reedbed site over 2 ha within Nottinghamshire, at West Burton (2.4 ha). In addition to this site, the 1993 survey identified a further 4 sites (all SSSIs and totalling about 44 ha) that contained an area of reedbed alongside other habitat types.

▶ THREATS

The main factors currently affecting Nottinghamshire's reedbeds are:

- **Lack of knowledge about extent and quality of resource.**
- **Small size and fragmented nature of the overall reedbed resource and most reedbed sites.**
- **Insufficient water supply to reedbed sites due to flood protection schemes, land drainage and abstraction, leading to the drying out of reedbeds and eventual succession to scrub.**
- **Poor water quality at some sites due to pollution of water courses from industry, domestic sewage and agricultural run-off.**
- **Lack of appreciation of the wildlife and economic benefits (eg. water purification, thatching) of reedbeds.**

▶ CURRENT INITIATIVES - EXAMPLES

- **The Environment Agency are incorporating reedbed protection, management and creation into Local Environment Agency Plans (LEAPs).**
- **The Ministry of Agriculture Fisheries and Food have been encouraged to include reedbed as one of the wetland habitats/features to be targeted through Countryside Stewardship in the County.**
- **A 'Reedbed Management Handbook', produced by a partnership of organisations including the RSPB and English Nature has been promoted to a variety of**

Release date: 1998

audiences in the County, including key decision makers and land use advisers.

- Plans are under discussion to prepare a 'strategy' for the Trent Valley floodplain, with reedbed as a target habitat for management, restoration and creation.
- Notts Wildlife Trust and RSPB are involved in nature reserve management and wetland restoration projects, including reedbed creation, in the Trent Valley floodplain, at Attenborough Gravel Pits, Besthorpe, Langford Lowfields and land in the Idle Valley.
- Many private landowners manage areas of reedbed, or potential reedbed sites, and have a vital part to play in its conservation.

▶ TARGETS

To contribute towards the UK habitat action plan by:

- Identifying and confirming the conservation status of all areas of reedbed equal to, or greater than 2 ha and ensuring that all are given necessary protection and are entered into appropriate management by the year 2005.
- Creating and/or restoring new reedbed on areas of low nature conservation value, preferably in blocks of larger than 20 ha to achieve a county reedbed resource of 100 ha in total by the year 2010.

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure reedbed opportunities are promoted through appropriate Environment Agency LEAPs and Water Level Management Plans.

ACTION: ENVIRONMENT AGENCY (EA), RSPB, ENGLISH NATURE (EN), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

2 Ensure that reedbed opportunities are promoted through appropriate regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LOCAL AUTHORITIES (LAs), RSPB, EN, NWT.

3 Encourage the use of agri-environment incentives for reedbed restoration and creation.

ACTION: MAFF, FARMING AND RURAL CONSERVATION AGENCY (FRCA), SHERWOOD FOREST TRUST (SFT), BIODIVERSITY ACTION GROUP (BAG).

CONTINUED OVER...

Release date: 1998

4 Promote reedbed creation/restoration as an afteruse for mineral extraction sites.

ACTION: LAs, EA, RSPB, EN, NWT, SFT.

Site Safeguard and Management

5 Designate all reedbeds of significant conservation value as SSSI, LNR and/or Sites of Importance for Nature Conservation (SINC).

ACTION: EN, LAs.

6 Ensure that development schemes do not affect the integrity or conservation interest of reedbeds.

ACTION: LAs, EA.

7 Promote and secure the appropriate management of all reedbed sites of significant conservation value.

ACTION: EN, EA, LAs, RSPB, NWT, SFT, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

8 Consider acquisition of land of low nature conservation value for reedbed creation.

ACTION: RSPB, NWT, SFT, LAs.

Advisory

9 Provide management advice to owners and managers of reedbeds over 2ha.

ACTION: RSPB, EN, NWT, SFT, EA , FARMING AND WILDLIFE ADVISORY GROUP (FWAG).

10 Provide advice to bodies or individuals on reedbed creation.

ACTION: FWAG, RSPB, EN, NWT, EA, SFT.

Future Research and Monitoring

11 Complete and maintain a county inventory of reedbed sites over 2 ha.

ACTION: RSPB, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

12 Monitor quality and management of reedbeds larger than 2 ha.

ACTION: RSPB, EN, NWT, NBGRC.

13 Monitor key reedbed species.

ACTION: RSPB, EN, NWT, EA.

Release date: 1998

14 Identify suitable areas for a total of 100ha of reedbed creation by 2000, and initiate projects on these sites by 2005

ACTION: EA, LAs, RSPB, NWT, EN.

Communications and Publicity

15 Raise awareness and understanding of the importance of reedbeds and their conservation.

ACTION: BAG.

▶ WHAT YOU CAN DO

- Use water wisely. A reduction in demand would help prevent the loss of habitats and species to over-abstraction.
- Join in a practical reedbed management event with BTCV or the Nottinghamshire Wildlife Trust.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Bearded tit**
- **Reed bunting**
- **Bittern**
- **Short eared owl**
- **Black-necked grebe**
- **Water rail**
- **Common tern**
- **Common hawker dragonfly**
- **Fieldfare**
- **Black-tailed skimmer**
- **Grey heron**
- **Obscure wainscot moth**
- **Jack snipe**
- **Brown-veined wainscot moth**
- **Kingfisher**
- **Silky wainscot moth**
- **Marsh harrier**

CONTINUED OVER...

Release date: 1998

SPECIES LIST continued...

- **Sea club rush**
- **Redshank**
- **Cyperus sedge**

Release date: 1998

RIVERS AND STREAMS

AUTHOR: **Steve Betts**

LEAD AGENCY: Environment Agency
Trentside Offices
Scarrington Road
West Bridgford
Nottingham
NG2 5FA

MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

Within Nottinghamshire there are 20 rivers designated as 'main river' by the Environment Agency. Of these only the Trent, Soar and Idle could be classed as lowland rivers, with deep wide profiles and slow flows. The remaining watercourses are generally faster flowing with a mixture of habitat types.

Whilst a water course itself provides important habitat for wildlife, it is important that the marginal and adjoining habitats, extending to the whole floodplain, are also considered. Many species need marsh and pond habitat as well as the watercourse itself in order to survive, and there will therefore be areas of overlap between this action plan and others, for example lowland wet grassland, otter and white clawed crayfish.

Many of Nottinghamshire's rivers have been subject to modification for flood defence or land drainage purposes. In some cases meanders have been removed and the channel straightened, the flood plain has been isolated by constructing flood banks, the channel has been deepened by dredging and trees and other

Release date: 1998

vegetation have been removed. Development in floodplains compounds this problem by further disrupting the natural river system.

There are no river SSSIs in Nottinghamshire, but there are a number of wetland SSSIs which abut some of the watercourses. Very few sections of watercourse have been designated of conservation interest at the county level, the Halloughton Dumble being the most significant in terms of length. The Dumbles are watercourses that have become deeply incised into the underlying Mercia Mudstone creating a unique micro-climate of high conservation value.

▶ THREATS

The main factors currently affecting rivers and streams in Nottinghamshire are:

- **Physical modification and management for drainage, flood prevention and navigation.**
- **Abstraction of water from the river or groundwater, leading to low flows, exacerbating pollution, and damaging habitats which need high water levels.**
- **Diffuse or point source pollution by domestic sewage, agricultural run-off and industrial pollutants.**
- **Use of adjoining land for intensive agriculture, urban or industrial use leading to habitat loss, pollution and reduced siltation rates.**
- **Mineral extraction, leading to the re-alignment of watercourses, reductions in flow, and the loss of floodplain habitat.**
- **The spread of non-indigenous species.**

▶ CURRENT INITIATIVES - EXAMPLES

- **Rivers and streams are a key habitat in the UK Biodiversity Action Plan, and a habitat action plan will be prepared.**
- **Internal Drainage Boards and many private landowners manage watercourses and adjacent land and have a vital part to play in the implementation of this plan.**

Release date: 1998

- The Environment Agency has a statutory duty to further conservation in relation to its water management functions, whilst its pollution control functions include a duty to have regard to the desirability of conserving and enhancing features of special interest.
- Where possible, the Agency carries out maintenance work on watercourses in such a way as to enhance the conservation value of the site.
- Regular monitoring of river water quality ensures that it stays within its General Quality Assessment (GQA) class.
- The control of activities which impact on rivers and their floodplains is regulated by the following legislation: The Environment Act 1995, The Water Resources Act 1991, Land Drainage Act 1991. The Agency is also empowered to declare bye-laws where necessary.
- Riparian land owners and county and district planning authorities all have duties and obligations under various acts and local plans to protect watercourses for nature conservation.
- The EA has prepared Local Environment Agency Plans (LEAPs)for the Rivers Erewash, Idle and Torne. LEAPs will also be prepared for other Nottinghamshire rivers.
- The EA has recently contracted out surveys for water vole and otter in Nottinghamshire.

▶ TARGETS

- Maintain and enhance the existing habitat and species diversity of rivers and streams.
- Enhance, through sensitive management and habitat creation schemes, the habitat and species diversity of at least 100km of main river by 2010.
- Identify opportunities by 2005 for restoring a more natural structure in stretches of main river from which it has been lost. This might involve reinstating meanders and shoals, for example, and should include the reconnection of watercourses to their floodplains. Formulate a target for restoration.
- Restore natural flows, in terms of water level and flow characteristics, to rivers and streams wherever possible.
- Improve the water quality of all main rivers currently below optimum standards by at least 1 General Quality Assessment (GQA) class by 2010.

Release date: 1998

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure that the ecological requirements of rivers and streams are fully considered as part of the Abstraction Licensing Review.

Action: Environment Agency (EA).

2 Ensure that the actions recommended in LEAPs are implemented.

Action: EA, Biodiversity Action Group (BAG).

Site Safeguard and Management

3 Ensure that all proposed development likely to impact upon river systems is minimised and mitigated against.

Action: EA, Local Authorities (LAs).

4 Encourage and promote the sympathetic management of watercourses and their catchments with landowners, managers and river users.

Action: EA, LAs, Farming and Wildlife Advisory Group (FWAG), Ministry of Agriculture, Fisheries and Food (MAFF), English Nature (EN), British Trust for Conservation Volunteers (BTCV), Farming and Rural Conservation Agency (FRCA), Sherwood Forest Trust (SFT).

5 Ensure that environmental best practice guidelines are followed for all river maintenance work and that opportunities for enhancement are utilised.

Action: EA.

Advisory

6 Promote the best approaches to watercourse and catchment management to protect and enhance biodiversity.

Action: BAG, EA.

7 Promote the use of buffer strips along watercourses to protect against livestock and agricultural discharge.

Action: MAFF/FRCA, FWAG, EA, EN, SFT, Royal Society for the Protection of Birds (RSPB).

Future Research and Monitoring

8 Monitor river quality within a General Quality Assessment (GQA).

Action: EA.

Release date: 1998

9 Continue research on the benefits of buffer strips, the rehabilitation of degraded habitats, wetland conservation and protected species management. Encourage buffers strips through the MAFF Water Fringe Habitat Scheme.

ACTION: MAFF/FRCA, EA, FORESTRY AUTHORITY (FA), RSPB.

10 Collect baseline data for watercourses using River Habitat Surveys, invertebrate and fish population surveys.

ACTION: EA, NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

11 Appraise the progress of existing projects and select best practice for application to the remaining water courses.

ACTION: EA, EN, NOTTINGHAMSHIRE WILDLIFE TRUST.

Communications and Publicity

12 Increase public awareness of the importance of and threats to wetlands and the need for positive action.

ACTION: EA, BAG, SFT.

13 Publicise examples of good environmental management, habitat rehabilitation and enhancement projects.

ACTION: BAG, SFT, EA.

▶ WHAT YOU CAN DO

- Use water wisely. A reduction in demand would help prevent the loss of habitats and species to over-abstraction.
- Never pour used engine oil, paint or other chemicals down the drain. They will often end up in watercourses.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Daubenton's bat**
- **Common hawker dragonfly**
- **Natterer's bat**

CONTINUED OVER...

Release date: 1998

SPECIES LIST continued...

- **Balsam carpet moth**
- **Otter**
- **Butterbur moth**
- **Water shrew**
- **Dentated pug moth**
- **Water vole**
- **Narrow-leaved water plantain**
- **Grey heron**
- **Sea aster**
- **Kingfisher**
- **Winter cress**
- **Oystercatcher**
- **Tufted sedge**
- **Ringed plover**
- **Yellow sedge**
- **Brook lamprey**
- **Whorl grass**
- **Brown trout**
- **Hemlock water-dropwort**
- **Salmon**
- **Fen pondweed**
- **White clawed crayfish**
- **Water crowfoot**

Release date: 1998

MIXED ASH-DOMINATED WOODLAND

AUTHOR: **Julian Branscombe**

LEAD AGENCY: Nottinghamshire Wildlife Trust
The Old Ragged School
Brook Street
Nottingham
NG1 1EA

MOST RECENT UPDATE: June 1999

▶ CURRENT STATUS

Before man began to have a significant impact on the landscape, much of England would have been wooded. With the exception of Sherwood, however, modern Nottinghamshire is not a well wooded county. Ancient woodland constitutes only 14% of the total woodland area, and is restricted to isolated fragments.

Much of Nottinghamshire's ancient woodland has ash as a significant proportion of the canopy. This woodland type dominates in the absence of human interference on the calcareous soils found in areas such as the Magnesian Limestone Ridge, the Mid-Nottinghamshire Farmlands and the Vale of Belvoir. Pedunculate oak is the other main canopy species in the majority of ancient or long-established ash woodland sites. Elms were once a major constituent of some ash woods in Nottinghamshire, but have been severely affected by Dutch Elm Disease. New secondary ash woodland can develop on post-industrial sites and abandoned arable fields and grassland. The total area of ancient and recent ash dominated woodland in the County is not yet known.

Release date: 1999

Ancient ash woodland is the most botanically diverse woodland in Nottinghamshire. A wide range of trees and shrubs can be found, including small-leaved and large-leaved limes, Midland hawthorn, dogwood and spindle. The rich ground flora can be dominated by dog's mercury, wood sorrel and wood anemone, with carpets of bluebell in pockets of deeper more organic soils. County rarities such as herb Paris, spurge laurel, stinking iris and several species of orchids are a key feature of a number of the ancient ash woods. Old trees and fallen or standing dead wood support fungi and specialist invertebrates.

Ash woodlands teem with bird life. Tawny owls, woodpeckers, nuthatches and treecreepers are some of the characteristic bird species to be found all year. In spring resident thrushes, tits and finches are joined by up to five species of warbler. However, bird life represents a tiny if striking fragment of the enormously diverse fauna of woodland. Some species such as roe deer, badger and bats are elusive. Insects and other invertebrates occupy every possible space offered, from the soil and leaf litter of the woodland floor to the leaves, flowers, fruit, branches and rot-holes high in the canopy.

▶ THREATS

The main factors currently affecting the County's mixed ash-dominated woodland are:

- **The invasion and spread of non-native species such as sycamore.**
- **The tendency of woodland managers to 'tidy up' by removing dead wood, which is an essential part of any woodland habitat.**
- **The lack of management of many woods in private ownership.**
- **The use of inappropriate planting designs and species mixes for woodland creation.**

Release date: 1999

- The historical replacement of native broad-leaved trees with non-native conifers or hardwoods. Forestry Commission policy has worked to prevent this since 1984.
- Loss to development remains a potential threat, but one which is generally well-defended by the planning system. Recreational development such as log cabins in woodland is a particular concern, which may prove harder to stem.
- Air pollution, which results in the loss of sensitive lichens, mosses and liverworts.
- Impoverishment of surrounding countryside, leaving woods as islands lacking complementary habitats such as grassland, and linking features such as hedges or green lanes.
- Muntjac deer, although not yet present in large numbers in the County, are likely to be in the near future, and present a considerable potential threat to the woodland ground flora and tree regeneration.

▶ CURRENT INITIATIVES - EXAMPLES

- Many private landowners manage areas of mixed ash woodland, and have a vital part to play in its conservation.
- The Government's England Forestry Strategy (1999) sets a series of national targets and programmes for protecting and restoring woodlands, including a commitment to reversing the fragmentation of ancient woodlands.
- The Nottinghamshire Wildlife Trust manages many important ash woodlands, including Bunny, Dyscarr, Eaton, Gamston, Kirton, Sellers and Treswell Woods.
- The Forestry Commission have habitat management and restoration projects underway at Wellow Park SSSI and Bevercotes Park SSSI.
- Ash woodland on a number of privately owned sites is managed under the Woodland Grant Scheme, elements of which are targeted to encourage the sensitive management of ancient semi-natural sites.
- English Nature has compiled a provisional Ancient Woodland Inventory for Nottinghamshire.
- Some woods are designated as Sites of Special Scientific Interest.

CONTINUED OVER...

Release date: 1999

- Ancient woodlands are given specific protection in the Nottinghamshire Structure Plan, whilst the emotive, amenity and landscape value of all woodland is such that this habitat is very rarely lost to built development.
- Woodlands receive protection under the Forestry Act, which requires a felling licence to be obtained from the Forestry Commission for felling of more than $5m^3$. Tree Preservation Orders, administered by Local Authorities, provide an additional avenue for protection where particular local threats are perceived.
- The Woodland Trust seeks to acquire sites on which to establish new woodland, or manage existing woods.
- The Greenwood Community Forest aims to work with partners to create well designed woodland and bring existing woods back into management throughout the Forest area.
- High standards for woodland management are encouraged by the UK Forestry Standard.

▶ TARGETS

- Develop a detailed inventory of this woodland resource, and formulate a target for its expansion by 2005. Expansion may be achieved by restoring sites currently managed as coniferous forest, and through natural regeneration and planting in areas with little existing wildlife value.
- Maintain the existing area of mixed ash woodland through a combination of management and non-intervention.

▶ PROPOSED ACTION

Policy and Legislation

1 Through planning control, allow no further loss of ash woodland to development or other land use change, and seek opportunities to create new areas through approved developments.

ACTION: LOCAL AUTHORITIES (LAs), BIODIVERSITY ACTION GROUP (BAG).

Release date: 1999

2 Ensure that ash woodland creation and management opportunities are promoted through appropriate Regional and local planning policy instruments.

Action: Government Office East Midlands, LAs.

3 Incorporate within the Greenwood Community Forest Plan (to be published in 1999) the need to halt the loss of ancient ash woodland, create new sites and bring existing areas into management.

Action: Greenwood Community Forest (GCF).

Site Safeguard and Management

4 Declare Local Nature Reserves on areas of ash woodland, or instigate other appropriate measures for their protection.

Action: LAs, English Nature (EN).

5 Promote the management and restoration of ash woodland, especially where ancient woodland sites have been replanted in recent years. Such work is eligible for grants under the Woodland Grants Scheme. Consider establishing a demonstration wood to illustrate good practice.

Action: GCF, Forestry Commission (FC), Woodland Trust (WT), Nottinghamshire Wildlife Trust (NWT), National Farmers Union (NFU), Country Landowners Association (CLA).

6 Promote woodland restoration and habitat creation within the Greenwood Community Forest area, for the twin purposes of enhancing biodiversity and providing access to the countryside.

Action: FC, GCF

7 Explore the opportunities for a large scale woodland creation project in a location where it would link or add to areas of existing woodland. Any such project should include complementary habitats such as species-rich grassland, marsh and open water.

Action: FC, GCF, NWT, LAs, WT.

8 Improve connections between areas of woodland and the surrounding countryside by the protection, enhancement and creation of complementary habitats and linking features. Work with land managers and encourage action by local communities to achieve this.

Action: GCF, NWT, LAs, Farming and Wildlife Advisory Group (FWAG), Agriculture and Development Advisory Service (ADAS).

9 Create new areas of ash woodland by managing areas of secondary woodland appropriately, particularly by planting maturing sycamore-dominated stands with ash.

Action: NWT, FC, GCF.

Release date: 1999

Advisory

10 Provide training in woodland management, and develop the advisory service available to woodland owners in the County, including the use of existing sites for demonstration and promotional purposes.

ACTION: NWT, FC, GCF, FWAG, ADAS, WT, LAs, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

11 Devise a strategy for the distribution of existing advisory material to woodland owners and managers and fill any gaps in the advisory material available by 2000.

ACTION: LAs, FC, GCF, NWT, EN, FWAG, NFU, CLA, NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

12 Consider contacting the owners or managers of replanted ancient woodland sites. On those replanted with conifers, encourage early restoration to broadleaved woodland. On those replanted with broadleaves, identify the best way to ensure maintenance or enhancement of the ecological value.

ACTION: NWT.

Future Research and Monitoring

13 Review the provisional Ancient Woodland Inventory, incorporating previously excluded areas of ancient woodland.

ACTION: EN, FC, GCF, NBGRC, NWT.

14 Ensure that ash woodland sites are periodically re-surveyed as part of the Notts Nature Conservation Audit, and information lodged with the County Records Centre.

ACTION: NBGRC, LAs, NWT.

15 Develop guidance on what management regime(s) are most appropriate in different circumstances.

ACTION: FC, EN, NWT, GCF, WT, NBGRC.

16 Investigate the value of ash woodland for overlooked interest, particularly fungi, lichens, mosses and invertebrates, through detailed survey.

ACTION: EN, NWT, WT, NBGRC.

17 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Release date: 1999

Communications and Publicity

18 Build on the high value which people generally place on woodland to increase understanding of the importance of woodland conservation and management, and the economic and environmental benefits that result.

ACTION: NWT, BTCV, GCF, WT, NFU, CLA.

19 Increase the economic viability of sustainable woodland management, and increase rural employment, through research and marketing initiatives for fuel, timber and other wood products. There should be a particular emphasis on charcoal and hardwood, as importing these products promotes destruction of woodland elsewhere in the world.

ACTION: BTCV, LAs, NWT, FC, GCF, NFU, CLA.

▶ WHAT YOU CAN DO

- Buy locally produced woodland produce, such as charcoal, basketry, hurdle fencing, trellis work and pea sticks.
- Plant the right tree in the right place! Seek advice from organisations such as Nottinghamshire Wildlife Trust, the British Trust for Conservation Volunteers or Nottinghamshire County Council on the suitability of your site for tree planting, what species are appropriate and how to maintain them.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Noctule bat**
- **Speckled bush cricket**
- **Nuthatch**
- **Lesser spotted woodpecker**
- **Early purple orchid**
- **White letter hairstreak**
- **Greater butterfly orchid**
- **Purple hairstreak**
- **Fly orchid**
- **Herb Paris**

Release date: 1999

WET BROADLEAVED WOODLAND

AUTHOR: **Eric Palmer**
Nottinghamshire Wildlife Trust

LEAD AGENCY: The Forestry Commission
Midlands Conservancy
Station Road
East Leake
Nr Loughborough
LE12 6LQ

MOST RECENT UPDATE: June 1999

CURRENT STATUS

Wet broadleaved woodlands occur on poorly drained or seasonally wet soils. They are generally found along river valley floodplains and in close association with running and standing water, although they may also occur in wet hollows within dry woodland. Large areas of secondary wet woodland have arisen through natural colonisation of old gravel pits and areas of mining subsidence. Plantations of poplar and willow also fall within this action plan. At least six wet woodland types occur in Nottinghamshire, with rare types being particularly well represented on the Misson Training Area SSSI in the north of the County.

Wet woodlands are generally characterised by a canopy of alder or willow, with a wide variety of plant species making up the ground flora. A high diversity of invertebrates, such as craneflies, hoverflies and snails, are associated with wet woodland, whilst plantations of poplar in the County have been found to harbour a number of scarce moth species. In addition, the habitat provides food

Release date: 1999

and shelter for a wide variety of vertebrates. Insect-feeding birds such as tits find bountiful winter feeding in the trees whilst the dense ground layer and tree roots can provide cover for otters and woodcock. Wet woodland can also provide shelter for fish fry during floods of the main river channel.

Due to its fragmentary nature, it is difficult to quantify accurately the wet woodland resource in Nottinghamshire. Before man began to have a significant impact on the landscape, much of England would have been wooded. With the exception of Sherwood, however, modern Nottinghamshire is not a well wooded county. Ancient woodland constitutes only 14% of the total woodland area, and ancient wet woodland is restricted to isolated fragments. Although riverside tree stands can be quite extensive, they are generally narrow strips and the total extent of ancient wet woodland is likely to be low. With floodplain modification over the last hundred years, all ancient woodland has been lost from the floodplain of the main Trent course, leaving stands which are much younger and smaller than those which might be found in pristine lowland river systems. A number of examples of old willow holts are still in existence, but many of them are neglected.

▶ THREATS

The main factors currently affecting the County's wet woodlands are:

- **The loss of woodland to agriculture, development or mineral extraction.**
- **Excessive abstraction from aquifers and surface waters, which can take away the water supply for wet woodlands, as can agricultural drainage adjacent to**

Release date: 1999

a site. Mineral extraction and river engineering can further disrupt water tables.

- Flood prevention measures, river control and canalisation, leading to the loss of the dynamic river systems which maintained a mosaic of wetland habitats, as well as the direct loss of wet woodland.
- The excessive grazing of wet woodlands, leading to a lack of regeneration.
- The tendency of woodland managers to 'tidy up' by removing dead wood, which is an essential part of any woodland habitat.
- A lack of appropriate management such as rotational felling or coppicing. The decline of pollarding has led to a subsequent decline in dead wood habitats.
- The threat to alder from Phytophthora root disease.
- Invasive or introduced species such as Himalayan balsam and Japanese knotweed can threaten the flora and fauna of wet woodland.
- Poor water quality, leading to changes in the composition of ground flora and invertebrate communities.

▶ CURRENT INITIATIVES - EXAMPLES

- A national Habitat Action Plan for Wet Broadleaved Woodland has been prepared.
- Many private landowners manage areas of wet woodland, and have a vital part to play in its conservation.
- The Government's England Forestry Strategy (1999) sets a series of national targets and programmes for protecting and restoring woodlands, including a commitment to reverse the fragmentation of ancient woodlands.
- National forestry policies include a presumption against the clearance of woodland for conversion to other land uses, while a felling licence is required for any felling of over $5m^3$ of timber. Any approval is likely to require the restoration of felled areas.
- The Forestry Commission provides support for the management of woodlands through its Woodland Grant Scheme.
- A key objective of the Countryside Stewardship Scheme in the Trent and Belvoir Vales is the establishment of wet woodland.

CONTINUED OVER...

Release date: 1999

- The Greenwood Community Forest aims to work with partners to create well designed woodland and bring existing woods back into management throughout the Forest area.
- Severn Trent Water and the Wildlife Trusts' Otters and Rivers Project offers advice to riverside landowners. Cover for otters is a critical habitat consideration, and the planting of riverside trees and maintenance of ancient pollards is a priority.
- A partnership of organisations is involved in the Trent Floodplain Initiative to protect and restore habitats along the whole of the Trent Valley.
- The Forestry Commission manage wet woodland at Elkesley Wood on the River Poulter. A project is underway at Rainworth Water to restore wet woodland habitats.
- The Joint Nature Conservation Committee has a national database of woodland distribution, while English Nature have compiled a provisional ancient woodland inventory for the County.

▶ TARGETS

To contribute to the UK habitat action plan by:

- Developing a detailed inventory of this woodland resource and formulating a target for its expansion by 2005. Expansion should not be at the expense of other valuable wetland habitats.
- Maintaining the existing resource, and initiating the restoration of degraded examples by 2005. Control of invasive alien species and achieving appropriate water levels should be priorities.

▶ PROPOSED ACTION

Policy and Legislation

1 Through planning control, allow no further loss of wet woodland to development or other land use change. Seek opportunities to create new areas of wet woodland through approved development.

ACTION: LOCAL AUTHORITIES (LAS), BIODIVERSITY ACTION GROUP (BAG).

Release date: 1999

2 Ensure that wet woodland creation and management opportunities are promoted through appropriate Regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LAS.

3 Declare Local Nature Reserves on relevant areas of wet woodland, or instigate other appropriate measures for their protection and management.

ACTION: LAS, ENGLISH NATURE (EN).

4 Where gaps in the SSSI coverage of wet woodland are identified, the appropriate procedure should be implemented by 2005.

ACTION: EN.

5 Incorporate within the Greenwood Community Forest Plan (to be published in 1999) the need to halt the loss of wet woodland, create new sites and bring existing areas into management.

ACTION: GREENWOOD COMMUNITY FOREST (GCF).

Site Safeguard and Management

6 Develop and promote the use of long term management plans (at least 20 years) by all woodland owners, aimed at integrating nature conservation with other management objectives.

ACTION: EN, NWT, FORESTRY COMMISSION (FC).

7 Encourage uptake of the Woodland Grant Scheme for wet woodland creation, particularly in the Greenwood Community Forest and Sherwood Forest areas and on land classified as floodplain.

ACTION: FC, GCF, NWT, FARMING AND WILDLIFE ADVISORY GROUP (FWAG), AGRICULTURE AND DEVELOPMENT ADVISORY SERVICE (ADAS), ENVIRONMENT AGENCY (EA).

8 Encourage the retention and sustainable management of existing wet woodland through the uptake of grant schemes such as Countryside Stewardship.

ACTION: FWAG, NWT, GCF, ADAS, FARMING AND RURAL CONSERVATION AGENCY (FRCA), NATIONAL FARMERS UNION (NFU), COUNTRY LANDOWNERS ASSOCIATION (CLA).

9 Control the spread of disease and promote local biodiversity by encouraging natural regeneration rather than tree planting wherever appropriate. Where planting is considered necessary, use only stock of known local provenance.

ACTION: FC, NWT, FWAG, FRCA, EA.

CONTINUED OVER...

10 Identify SSSIs and other wildlife sites where the habitat may be protected more effectively through the production and implementation of a Water Level Management Plan.

Action: EA, EN.

Advisory

11 Provide advice on the management of wet woodlands, including promotion of woodland products, to land managers.

Action: FC, FWAG, NWT, ADAS, EA, GCF.

12 Devise a strategy for the distribution of existing advisory material to woodland owners and managers and fill any gaps in the advisory material available by 2000.

Action: LAs, FC, GCF, NWT, EN, FWAG, NFU, CLA, Nottinghamshire Biological and Geological Record Centre (NBGRC).

13 Promote training courses on the conservation and management of semi-natural woodland and develop a local network for advice and discussion.

Action: GCF, FWAG, FRCA, NWT, British Trust for Conservation Volunteers (BTCV).

Future Research and Monitoring

14 Review the provisional Ancient Woodland Inventory, incorporating previously excluded areas of ancient woodland.

Action: EN, FC, GCF, NBGRC, NWT.

15 Ensure that wet woodland sites are periodically re-surveyed as part of the Nottinghamshire Nature Conservation Audit, and information lodged with the Nottinghamshire Biological and Geological Records Centre.

Action: NBGRC, LAs, NWT.

16 Carry out a feasibility study for large scale wet woodland re-creation in the Trent Valley, identifying priority areas for expansion. This should include an evaluation of agricultural and water management policies.

Action: FC, EN, EA, NWT.

17 Summarise and disseminate current research into the effect that trees (particularly alder) may have on the water quality of rivers and streams.

Action: EA.

18 Evaluate the value of wet woodland to a range of taxa through survey work.

ACTION: NBGRC, NWT.

19 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Communications and Publicity

20 Build on the high value which people generally place on woodland to increase understanding of the importance of woodland conservation and management, and the economic and environmental benefits that result.

ACTION: NWT, BTCV, GCF, NFU, CLA, WOODLAND TRUST (WT).

21 Increase the economic viability of sustainable woodland management, and increase rural employment, through research and marketing initiatives for fuel, timber and other wood products.

ACTION: BTCV, LAs, FC, NWT, GCF, NFU, CLA.

▶ WHAT YOU CAN DO

- If you own or manage areas of wet woodland, contact your local FWAG or FRCA officer for advice on management for wildlife and sources of funding.
- If you are interested in creating wet woodland on your land, contact the Environment Agency, Forestry Commission or Nottinghamshire Wildlife Trust for advice.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Otter**
- **Bats**
- **Grasshopper warbler**
- **Long-eared owl**
- **Tree pipit**
- **Woodcock**
- **Lesser spotted woodpecker**

Release date: 1999

SPECIES LIST continued...

- **Dragonflies**
- **Poplar kitten moth**
- **Cream-bordered green pea moth**
- **Alternate leaved golden saxifrage**

Release date: 1999

LOWLAND DRY ACID GRASSLAND

AUTHOR: **Jeremy Fraser**
Nottinghamshire Wildlife Trust

LEAD AGENCY: Type a): The Sherwood Forest Trust
c/o English Nature
The Maltings
Wharf Road
Grantham
Lincolnshire
NG31 6BH

Type b): Nottinghamshire Wildlife Trust
The Old Ragged School
Brook Street
Nottingham
NG1 1EA

MOST RECENT UPDATE: June 1999

▶ CURRENT STATUS

Nottinghamshire's dry acid grassland is characterised by the occurrence of plants such as wavy hair-grass, common bent, sheep's fescue, heath bedstraw and pill sedge. It occurs on nutrient-poor dry acid soils. Nottinghamshire falls between the acid upland grasslands of the Pennines and the lowland grasslands of the Brecklands and Lincolnshire. As a consequence the Nottinghamshire acid grasslands include upland elements, such as mat grass, but lack some of the typical lichen components found further east. In the East Nottinghamshire Sandlands, small fragments of a dune-like habitat support a number of plants typical of inland dune systems. Lowland acid grasslands are of value for a range of specialist, scarce

Release date: 1999

or declining fauna, including bees and wasps, spiders, reptiles and birds. Some species are dependent upon habitat mosaics, for instance a mixture of acid grassland, heathland and woodland.

Between 1930 and 1984 unimproved lowland grassland of all types decreased by an estimated 97% in England and Wales. Losses have continued during the 1980s and 90s, and have been recorded at 2-10% per annum in some counties. The East Midlands has a particularly high rate of loss, and although the current extent is not accurately known, it is estimated that Nottinghamshire's unimproved grassland has declined by 97-99% since 1930.

IN NOTTINGHAMSHIRE, ACID GRASSLAND MAY BE DIVIDED INTO TWO TYPES:

a) **Grassland characteristic of the Sherwood and East Nottinghamshire Sandlands Character Areas, which tends to be associated with lowland heathland.**

b) **Grassland found on sand and gravel deposits in the Trent Valley, and on acidic post-industrial surfaces such as coal tips and disused railway tracks, particularly in the Coal Measures.**

This action plan covers both types of acid grassland. However, much of the acid grassland of type a) is closely associated with heathland, and only differs from it in the extent of heather cover - more than 25% being defined as heathland, and less than 25% as grassland. For this reason acid grassland of type a) is included within the targets for lowland heathland, and separate targets are given for type b) acid grassland. The aim of this is to ensure that acid grassland is given a high profile as an important habitat in its own right, while recognising the strong links between it and heathland habitats. This action

Release date: 1999

plan should be read in conjunction with that for lowland heathland.

▶ THREATS

The main factors currently affecting the County's acid grassland are:

- Lack of traditional management such as light grazing and cutting, resulting in the increasing dominance of coarse grasses, bracken, scrub and trees at the expense of acid grassland flora and fauna.
- Agricultural intensification by the use of fertilisers, herbicides, liming, ploughing and re-seeding or conversion to arable. Over-grazing and supplementary feeding are also potential problems.
- Loss, fragmentation and disturbance caused by residential and industrial development, road building, mineral extraction, landfill activities and other development.
- Introduction and spread of non-native and other inappropriate plant species.
- The spread of bracken, a frequent component of lowland dry acid grassland, which can reduce habitat diversity. Control measures may be desirable, but elimination should be avoided because moderate amounts of bracken do bring significant wildlife benefits.
- Recreational pressure and proximity to urban areas, which may lead to damage and disturbance of the habitat and make grazing impractical.
- Atmospheric pollution, especially deposition of nitrogen compounds. This affects species composition and abundance in a similar way to the application of artificial fertiliser, but to a lesser extent.
- Conversion to heathland and woodland without careful consideration of the existing wildlife value. Acid grassland should not be thought of purely as potential heathland, it has interest of its own, and can be part of a diverse habitat mosaic.

▶ CURRENT INITIATIVES – EXAMPLES

- A national Habitat Action Plan for Lowland Acid Grassland has been prepared.

CONTINUED OVER...

Release date: 1999

- Many private landowners manage areas of acid grassland, and have a vital part to play in its conservation.
- The Greenwood Community Forest aims to improve a major part of the Nottinghamshire countryside, which includes restoration of heathland and acid grassland.
- The majority of the best acid grassland areas are within Sites of Special Scientific Interest (SSSIs). Other acid grasslands are Sites of Importance for Nature Conservation (SINCs).
- Many organisations are involved in the sympathetic management of areas of heathland and acid grassland in Nottinghamshire, including the National Trust, The Forestry Commission, Nottinghamshire Wildlife Trust, the Sherwood Forest Trust, the Defence Estate Organisation, the British Trust for Conservation Volunteers and RJB Mining.
- Selected areas of acid grassland are managed through the Countryside Stewardship and Reserves Enhancement Schemes, or through English Nature management agreements.
- Sherwood Forest is one of four trial areas in the English Nature Habitat Restoration Project. English Nature and the Sherwood Forest Trust are working together to trial methods of reversing fragmentation through habitat restoration and creation of buffers, stepping stones and corridors.
- The restoration of heathland and associated habitats on land managed by the Forestry Commission in Sherwood Forest is expected to produce 130ha by 2001, of which 30ha will be acid grassland.

▶ TARGETS

Type a) acid grassland is included within the targets for lowland heathland, which are to contribute towards the UK habitat action plan by:

- Bringing 80% of the County's heathland into appropriate management by 2005.
- Increasing the area of heathland by at least 200ha by 2005. At least 10% of this will consist of small scale projects within priority areas identified by the Nottinghamshire Heathland Re-creation Plan. (They should consist of a matrix of heathland and acid grassland in a proportion appropriate to the individual site).

Release date: 1999

▶ TARGETS

Targets for type b) acid grassland are to contribute towards the UK habitat action plan by:

- Determining the current extent of acid grassland outside the Sherwood and East Notts Sandlands Character Areas, and setting targets for expansion by 2005.
- Allowing no further net loss of lowland acid grassland.
- Securing favourable management of 30% of the resource by 2005 and as near to 100% as possible by 2015.
- Within SSSIs, initiating rehabilitation management for all significant stands of unimproved lowland acid grassland in unfavourable condition by 2005, with the aim of achieving favourable status wherever feasible by 2010.

▶ PROPOSED ACTION

The following actions are in addition to those proposed under the lowland heathland habitat action plan.

Policy and Legislation

1 Through planning control, allow no further loss of unimproved acid grassland to development or other land use change, and seek opportunities to create new areas of acid grassland through approved developments.

ACTION: LOCAL AUTHORITIES (LAS), BIODIVERSITY ACTION GROUP (BAG).

2 Ensure that acid grassland creation and management opportunities are promoted through appropriate Regional and local planning policy instruments.

ACTION: LAS, GOVERNMENT OFFICE EAST MIDLANDS.

3 Ensure that the conservation requirements of lowland acid grassland are considered in developing and targeting agri-environment schemes such as Countryside Stewardship.

ACTION: MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF), FARMING AND RURAL CONSERVATION AGENCY (FRCA).

CONTINUED OVER...

Release date: 1999

4 Ensure that the implementation of the Nottinghamshire Heathland Strategy takes into account the importance of acid grassland as an associated habitat, particularly when identifying suitable sites for heathland re-creation.

ACTION: HEATHLAND STRATEGY STEERING GROUP (HSSG).

Site Safeguard and Management

5 Restoration of acid grassland on Forestry Commission land will be in accordance with approved Forest Design Plans and management plans endorsed by English Nature.

ACTION: FORESTRY COMMISSION (FC).

6 Declare Local Nature Reserves on relevant areas of acid grassland or instigate other appropriate measures for their protection and management.

ACTION: LAS, ENGLISH NATURE (EN).

7 SSSI coverage of the acid grassland resource in Nottinghamshire should be reviewed, and any significant areas meeting SSSI criteria designated by 2005.

ACTION: EN.

8 Secure the uptake of positive management agreements with owners and occupiers of SSSIs where necessary to achieve favourable conservation conditions.

ACTION: EN, FC.

9 Ensure that all Notified Road Verges are protected and managed appropriately.

ACTION: NOTTINGHAMSHIRE COUNTY COUNCIL (NCC).

Advisory

10 Organisations with experience of heathland and acid grassland management should continue to provide advice to land managers on how to manage and restore acid grassland, co-ordinating their efforts through the Nottinghamshire Heathland Forum.

ACTION: EN, FC, LAS, FRCA, FARMING AND WILDLIFE ADVISORY GROUP (FWAG), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), ROYAL SOCIETY FOR THE PROTECTION OF BIRDS, SHERWOOD FOREST TRUST (SFT), AGRICULTURE AND DEVELOPMENT ADVISORY SERVICE (ADAS).

Release date: 1999

11 Research and develop guidelines for site managers on how to decide on the desirable proportion of heathland and acid grassland within a site. Promote acid grassland as an important component of the woodland / heathland / grassland complex in the Sherwood and East Notts Sandlands Character Areas.

ACTION: HSSG.

Future Research and Monitoring

12 Establish a monitoring programme to compare achievements to habitat and species targets and revise the Action Plan if necessary.

ACTION: BAG, HSSG.

13 Ensure that acid grassland sites are periodically resurveyed as part of the Nottinghamshire Nature Conservation Audit and its successors.

ACTION: NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE.

14 *Consider establishing trials to evaluate a range of* management and creation options for acid grassland.

ACTION: SFT, EN, ADAS, FWAG, NWT, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

Communications and Publicity

15 Efforts should be made to improve public appreciation of acid grasslands by appropriate interpretation, education and public involvement. Public access to sites should be encouraged where this does not conflict with the nature conservation interest or the wishes of the land owner.

ACTION: NHF, BTCV, LAs, COUNTRY LANDOWNER'S ASSOCIATION, NATIONAL FARMERS UNION.

▶ WHAT YOU CAN DO

- If you are a landowner or manager on naturally acid land in Nottinghamshire, consider managing part of your land as unimproved acid grassland. Contact FWAG, FRCA, ADAS or the Sherwood Forest Trust for advice on sources of funding.
- Join the Nottinghamshire Wildlife Trust, BTCV or another voluntary organisation, and find out how you can become actively involved in the conservation of acid grassland.

Release date: 1999

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Brown hare**
- **Common shrew**
- **Barn owl**
- **Common buzzard**
- **Curlew**
- **Grey partridge**
- **Lapwing**
- **Common lizard**
- **Broom tip moth**
- **Light brocade moth**
- **Blue fescue**
- **Fragrant agrimony**
- **Prickly sedge**
- **Sand sedge**

Release date: 1999

SECTION 7: HABITAT ACTION PLANS

LOWLAND CALCAREOUS GRASSLAND

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MOST RECENT UPDATE: June 1999

CURRENT STATUS

Calcareous grasslands are found in Nottinghamshire mainly on the shallow lime-rich soils of the Magnesian Limestone ridge in the west of the County. The vast majority have been 'improved' by the use of fertilisers and/or reseeding with rye grass, but traditional unimproved wildflower grasslands survive as enclosed pastures in areas such as escarpments and slopes where conversion to intensive agriculture is difficult. They may also be found in roadside verges, railway cuttings and former quarries. Equivalent calcareous grasslands also occur outside the Magnesian Limestone area where lime-rich industrial wastes or imported natural limestone have been deposited in places such as railway embankments.

Unimproved calcareous grasslands are characterised in Nottinghamshire by the occurrence and often dominance of upright brome, tor grass and meadow oat grass. Other regularly occurring species include sheep's fescue, salad burnet, quaking grass and greater knapweed. Calcareous grasslands are often species-rich and support a range of

Release date: 1999

typical and rarer species including stemless thistle, fragrant orchid, pyramidal orchid, common rockrose and rue-leaved saxifrage. Scrub is frequently present, and at appropriate levels provides an important habitat, increasing the diversity of species found. Calcareous grasslands provide suitable habitat for a wide variety of animals including small mammals, common lizard, moths and butterflies such as the grizzled skipper.

Between 1930 and 1984, as a result of agricultural intensification, unimproved lowland grassland of all types decreased by an estimated 97% in England and Wales. Losses have continued during the 1980s and 90s, and have been recorded at 2-10% per annum in some counties. The East Midlands has a particularly high rate of loss, and although the current extent is not accurately known, it is estimated that Nottinghamshire's unimproved grassland has declined by 97-99% since 1930. Calcareous grassland is an internationally rare and threatened habitat, and some types are identified as a priority under European law.

▶ THREATS

The main factors currently affecting unimproved calcareous grassland in Nottinghamshire are:

- **Clearance of grassland for industrial and urban development, including infrastructure development such as roads.**
- **Agricultural intensification by the use of fertilisers, herbicides, and conversion to high productivity grass species or arable crops.**
- **The lack of available livestock, leading to the invasion and spread of coarse grasses and herbs, trees and shrubs.**

Release date: 1999

- Quarrying for limestone and subsequent land fill operations.
- Air pollution, in particular soil enrichment due to nitrogen deposition.
- Lack of incentives for private landowners to manage small grassland blocks to maintain their important characteristics, especially combining nature conservation with other management objectives.
- Increasing habitat fragmentation. Many calcareous grassland sites are small, making them vulnerable to loss and damage.

▶ CURRENT INITIATIVES - EXAMPLES

- A UK Habitat Action Plan for Lowland Calcareous Grassland has been prepared.
- The Creswell Magnesian Limestone Strategy Group are preparing a strategy to protect and re-create habitats throughout those parts of Nottinghamshire, Derbyshire, Rotherham and Doncaster lying in the Magnesian Limestone area.
- Nottinghamshire County Council manage key areas of calcareous grassland at Linby Trail Local Nature Reserve and a number of Notified Road Verges.
- Nottinghamshire County Council and the Forestry Commission are encouraging the natural regeneration of calcareous grassland as part of the restoration of colliery spoil tips where they occur on the Magnesian Limestone.
- Nottingham City Council manage calcareous grassland at Broxtowe Country Park and Bulwell Hall Park.
- Mansfield District Council have recently prepared a district wide Nature Conservation Strategy which promotes the conservation and management of calcareous grassland.
- Selected areas of calcareous grassland are managed through the Countryside Stewardship and Reserves Enhancement Schemes, or through English Nature management agreements.
- The Nottinghamshire Wildlife Trust manage approximately 15ha of calcareous grassland on their reserves.
- Six Sites of Special Scientific Interest (SSSI) have been designated for which the primary interest is calcareous grassland. Other SSSIs also support some calcareous grassland.

CONTINUED OVER...

Release date: 1999

- **A number of calcareous grasslands are designated as Sites of Importance for Nature Conservation (SINCs).**
- **English Nature has compiled a provisional grassland inventory for Nottinghamshire.**
- **The Nottinghamshire Nature Conservation Audit surveyed known and potential calcareous grassland SINCs between 1996 and 1998.**

▶ TARGETS

To contribute towards the UK habitat action plan by:

- Developing a detailed inventory of the calcareous grassland resource by 2000, and formulating a target for expansion.
- Allowing no further loss of unimproved calcareous grassland in the County.
- Bringing 30% of the County's calcareous grasslands into appropriate management by 2005, and as near to 100% as possible by 2015.
- Within SSSIs, initiating rehabilitation management for all significant stands of unimproved calcareous grassland in unfavourable status by 2005, with the aim of achieving favourable status where feasible by 2010.

▶ PROPOSED ACTION

Policy and Legislation

1 Through planning control, allow no further loss of unimproved calcareous grassland to development or other land-use change, and seek opportunities to create new areas through approved developments.

ACTION: LOCAL AUTHORITIES (LAS), BIODIVERSITY ACTION GROUP (BAG).

2 Ensure that calcareous grassland creation and management opportunities are promoted through appropriate Regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LAS.

Release date: 1999

3 Promote the inclusion of appropriate management regimes within existing agri-environment schemes that meet the local requirements of this habitat in Nottinghamshire.

Action: Farming and Wildlife Advisory Group (FWAG), English Nature (EN), Nottinghamshire Wildlife Trust (NWT).

Site Safeguard and Management

4 SSSI coverage of the calcareous grassland resource in Nottinghamshire should be reviewed, and any significant areas meeting SSSI criteria designated by 2005.

Action: EN.

5 Declare Local Nature Reserves on relevant areas of calcareous grassland or instigate other appropriate measures for their protection and management.

Action: LAs, EN.

6 Ensure that all Notified Road Verges are protected and managed appropriately.

Action: Nottinghamshire County Council (NCC).

7 Promote the uptake of the Countryside Stewardship Grant Scheme and other funding mechanisms to achieve calcareous grassland management and creation in targeted areas. Monitor the outcome through the Nottinghamshire Nature Conservation Audit.

Action: FWAG, EN, NWT, LAs, Cresswell Limestone Strategy Group (CLSG), Agriculture and Development Advisory Service (ADAS), Farming and Rural Conservation Agency (FRCA), National Farmers Union (NFU), Country Landowners Association (CLA), Notts Biological and Geological Records Centre (NBGRC).

8 Select priority areas and specific sites for the creation of new calcareous grassland and the restoration of existing examples by 2000.

Action: EN, NCC, NWT, CLSG.

9 Promote the sympathetic management of calcareous grasslands in whole farm management plans.

Action: FWAG, ADAS.

10 Consider a system for providing access to grazing animals for owners and managers of key calcareous grassland sites.

Action: BAG.

Release date: 1999

Advisory

11 Provide informal and formal training at a local level on the ecology, conservation and management of calcareous grassland in Nottinghamshire.

ACTION: EN, NWT, CLSG, NCC.

12 Establish and utilise a number of demonstration sites to show good practice in grassland management, restoration and creation.

ACTIONS: NWT, EN, LAs.

13 Organisations with experience of grassland management should continue to provide advice to land managers, and co-ordinate their efforts through effective liaison.

ACTION: EN, NWT, NCC, ADAS, FRCA, FWAG, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

Future Research and Monitoring

14 Prepare an inventory of calcareous grassland by 2000. It should include details of area, conservation interest and management problems. Subsequently, review and if necessary, update the calcareous grassland inventory for Nottinghamshire by 2005.

ACTION: CLSG, NWT, LAs, NBGRC.

15 Ensure that unimproved calcareous grassland sites are periodically re-surveyed as part of the Nature Conservation Audit, and information lodged with the Notts Biological and Geological Records Centre.

ACTION: NBGRC, LAs, NWT.

16 Undertake practical trials for the creation and restoration of calcareous grassland.

ACTION: NCC, NWT, EN, NBGRC.

17 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Communications and Publicity

18 Devise a strategy for the dissemination of advisory material, survey information and management advice to grassland owners and managers.

ACTION: EN, NWT, NBGRC, FWAG, NFU, CLA.

Release date: 1999

19 Assess the value and potential effectiveness of running management advisory days for grassland owners and managers. Implement suitable events if appropriate.

ACTION: NCC, EN, NWT.

20 Efforts should be made to improve public appreciation of the importance and fragility of calcareous grasslands by appropriate interpretation and education.

ACTION: EN, NWT, LAs, FWAG, NBGRC, BTCV.

▶ WHAT YOU CAN DO

- Create or restore a species-rich limestone grassland on your land. Advice on management is available from various sources.
- If you live in a limestone area, encourage those responsible for managing your local churchyard, park or roadside verges to set aside an area to be managed for wildflowers.
- Undertake surveys and research that will contribute to the targets of the Action Plan.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Brown hare**
- **Common shrew**
- **Stoat**
- **Barn owl**
- **Skylark**
- **Marbled coronet moth**
- **Netted pug moth**
- **Six-belted clearwing moth**
- **Rustyback**
- **Burnt orchid**
- **Fly orchid**
- **Autumn gentian**
- **Clustered bellflower**

Release date: 1999

EUTROPHIC AND MESOTROPHIC STANDING WATERS

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MOST RECENT UPDATE: June 1999

▶ CURRENT STATUS

Areas of standing water such as ponds, lakes, flooded gravel pits and reservoirs are classified according to the amount of plant nutrients such as phosphorous and nitrogen present in them. Eutrophic (nutrient rich) waters are most typical of lowland Britain, as they tend to accumulate soluble and sediment-borne nutrients from surface and ground water flowing in from higher areas. Mesotrophic waters have a lower nutrient status, and potentially have the highest biodiversity of any pond or lake type. Many formerly mesotrophic ponds and lakes have become artificially eutrophic due to the run-off of fertilisers from farm land, and there are few, if any, mesotrophic areas left in the County. There is some potential for restoration, however, and as the problem of nutrient run-off is addressed, the water quality of many of these areas is already improving. For the purposes of this action plan these habitats have been treated collectively. Canals and water filled ditches

are dealt with under separate habitat action plans.

There are relatively few natural standing waters in Nottinghamshire, although a significant number of natural ponds and oxbows occur along the Trent floodplain. As in most lowland areas, many lakes and ponds have disappeared due to drainage and reclamation for agriculture. The introduction of piped water supplies for livestock led to a general neglect of ponds previously maintained for drinking water, whilst under-drainage of fields and in-filling of wetland and open water habitats has been widespread. Nevertheless, new water bodies have been created as a result of gravel extraction and mining subsidence whilst borrow pits formed during excavations for railway embankments represent a significant habitat resource. Furthermore, many new ponds and lakes have been dug in gardens, urban areas and the wider countryside for conservation and amenity purposes.

Standing waters are important for a variety of reasons. Large expanses of open water, such as Attenborough Gravel Pits, are significant water bird habitats all year round, providing breeding, feeding and winter roosting areas for a large number of species. Particularly important are water bodies which act as staging posts for migratory birds. The margins of lakes and ponds are often an important habitat for aquatic invertebrates. Early stages in the process of plant colonisation are important for insects such as dragonflies and water beetles whilst the later stages, where silt has accumulated, provide habitat for detritus feeders such as snails and crustaceans. Standing waters can be

Release date: 1999

important feeding areas for bats, being some of the first areas where flying insects assemble in spring. Fish are predominantly coarse species, although some lakes are now stocked with trout.

Smaller water features such as garden ponds can be of considerable value for wildlife, especially if there are no fish to eat the eggs or tadpoles of amphibians. Temporary standing water in flood plains and seasonal ponds can be important for many species, particularly a range of specialist invertebrates.

THREATS

The main factors currently affecting the County's standing water bodies are:

- On-going fertiliser run-off. While high nutrient levels can be natural and beneficial to a number of species, excessive nutrients encourage the prolific growth of algae which leads to the death of fish, plants and invertebrates.
- Pollution from organic matter, silt, hydrocarbons and heavy metals from farmland, road and urban run-off as well as point sources such as industrial accidents.
- Lowered water levels, caused by over abstraction from ground or surface water. This may exacerbate nutrient enrichment, cause marginal vegetation to deteriorate and lead to the drying out of shallow ponds and lakes.
- Changes in surrounding land use, leading to the loss of adjacent habitats. Many animals depend on a range of habitats at certain stages in their life cycles, while a buffer zone of grassland, woodland or wetland around a pond will help absorb pollution.
- The restoration of silted up ponds by dredging. Many ponds will naturally fill in over time, and different stages in this process are of value to specialist plants and animals. The need for dredging must be weighed against the existing wildlife interest.
- Drainage. Standing waters fed by surface runoff will suffer if this is diverted away from them by drainage systems, usually to a flowing watercourse.

CONTINUED OVER...

Release date: 1999

- The in-filling of water bodies for agricultural improvement or development.
- Recreational uses such as angling, boating and water skiing, which can cause disturbance to water birds and damage to marginal plant and animal life if not carried out in a sensitive way.
- The introduction of inappropriate numbers and species of fish, which can change the whole food web and character of a water body.
- The release of non-native plants and animals such as Himalayan balsam, mink and signal crayfish can be very damaging to aquatic habitats and species.

▶ CURRENT INITIATIVES - EXAMPLES

- National Habitat Action Plans for Eutrophic and Mesotrophic Standing Waters have been prepared.
- Many private landowners manage areas of standing water, and have a major part to play in their conservation.
- A partnership of organisations is involved in the Trent Floodplain Initiative to protect and restore habitats along the whole of the Trent Valley.
- A number of water bodies in Nottinghamshire are designated as SSSIs, including Attenborough Gravel Pits. Daneshill Gravel Pit is a Local Nature Reserve.
- A number of sites are protected and managed around the County by groups such as Nottinghamshire Wildlife Trust, RSPB and the Forestry Commission.
- The restoration of gravel pit workings for nature conservation is taking place in several parts of the County. Examples are Langford Lowfields, where the RSPB and Tarmac are collaborating, Besthorpe gravel pits where Redland Aggregates are working with the NWT, and Lound along the River Idle, where the NWT, Tarmac and ARC are working towards an extensive restoration for nature conservation.
- A key objective of the Countryside Stewardship Scheme in Nottinghamshire includes the establishment or retention of a variety of wetland features, including an option for pond management. These can be incorporated into whole farm initiatives.
- The release of most non-native animals and some plants is prohibited under the Wildlife and Countryside Act 1981.

Release date: 1999

▶ TARGETS

To contribute to the UK habitat action plans by:

- Developing an inventory of standing water bodies of particular actual or potential biodiversity value by 2005. Use this to formulate a target for the creation of new areas of open water on land of low biodiversity value, and the restoration of existing areas.
- Maintaining and enhancing the conservation value of the existing area of standing water habitat through sympathetic management.

▶ PROPOSED ACTIONS

Policy and Legislation

1 Through planning control, allow no further loss of standing water areas of significant conservation value, and seek opportunities to create new areas through approved development.

ACTION: LOCAL AUTHORITIES (LAS), BIODIVERSITY ACTION GROUP (BAG).

2 Ensure that standing water creation and management opportunities are promoted through appropriate Regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LAS.

3 Through planning control, ensure that the potential affects on wildlife of changes of recreational use of ponds and lakes are properly assessed, and adverse effects prevented.

ACTION: LAS.

4 Through planning control, ensure that surface water run-off from new developments is directed into watercourses or groundwater units using swales, infiltration lagoons, balancing ponds, reed bed filtration systems etc, to minimise pollution and maximise conservation benefit.

ACTION: LAS, ENVIRONMENT AGENCY (EA).

Site Safeguard and Management

5 Declare Local Nature Reserves on relevant areas of standing water, or instigate other appropriate measures for their protection and management.

ACTION: LAS, ENGLISH NATURE (EN).

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Release date: 1999

6 Where gaps in the SSSI coverage of standing waters are identified, the appropriate procedure should be implemented by 2005.

Action: EN.

7 Identify opportunities, and formulate a strategy to create new ponds and re-create old ones, ensuring that areas of existing wildlife value are not damaged. The creation of clusters of small ponds with associated habitats should be a priority rather than fewer large ponds.

Action: EA, Farming and Wildlife Advisory Group (FWAG), Farming and Rural Conservation Agency (FRCA), Nottinghamshire Wildlife Trust (NWT), Agriculture and Development Advisory Service (ADAS).

8 Identify SSSIs and other wildlife sites where the habitat may be protected more effectively through the production and implementation of a Water Level Management Plan.

Action: EA, EN.

Advisory

9 Continue to promote the waterside landscape and pond management options of the Countryside Stewardship Scheme.

Action: FWAG, FRCA, NWT, ADAS.

10 Promote the opportunities for wetland nature reserves presented by gravel extraction and mining subsidence on areas of little existing biodiversity value.

Action: FWAG, NWT, LAs.

11 Promote appropriate management of standing waters amongst owners and users. Management plans and enhancement works should be a priority.

Action: EA, NWT, National Farmers Union (NFU), Country Landowners Association (CLA).

12 Promote best practice in farming and encourage farmers to prepare and implement Farm Waste Management Plans in catchments of vulnerable standing waters.

Action: Ministry of Agriculture Fisheries and Food (MAFF).

Release date: 1999

Future Research and Monitoring

13 Make use of information generated by the Notts Nature Conservation Audit to compile an inventory of standing water bodies of actual or potential value for biodiversity by 2005.

ACTION: NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

14 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Communications and Publicity

15 Publicise the threats to and losses of standing waters.

ACTION: BAG.

16 Encourage householders to create and maintain wildlife ponds in their gardens as part of a wider campaign on wildlife friendly gardening.

ACTION: BAG.

17 Disseminate survey information, and tips on best practice in the management of ponds and lakes for conservation and multiple use to owners and managers.

ACTION: EA, FWAG, NWT, FRCA, NFU, CLA, NBGRC.

18 Establish a dialogue with users of lakes and ponds such as boaters and anglers so that common interests and understanding can be found and potential conflicts can be avoided.

ACTION: BAG.

▶ WHAT YOU CAN DO

- If you own or manage an area of standing water, consider how you can maximise its value for wildlife. FWAG, BTCV or Nottinghamshire Wildlife Trust may provide advice.
- In areas where there is little existing wildlife value, create a pond. Funding for this could be available for agricultural land and advice can be given by FWAG, FRCA and NWT.
- Create a wildlife pond in your garden or school field. Many books are available on making ponds wildlife friendly.

Release date: 1999

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan:

- **Water vole**
- **Bats**
- **Black-necked grebe**
- **Gadwall**
- **Shoveler**
- **Teal**
- **Kingfisher**
- **Sand martin**
- **Great crested newt**
- **Common frog**
- **Common toad**
- **Rush wainscot moth**
- **Red-eyed damselfly**
- **Fen pondweed**
- **Watercress**

Release date: 1999

SECTION 7: HABITAT ACTION PLANS

URBAN AND POST-INDUSTRIAL HABITATS

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MOST RECENT UPDATE: June 1999

▶ CURRENT STATUS

Wildlife is not confined to the countryside. Most urban areas (towns and cities with a population over 10,000) contain a network of inter-linked green corridors and spaces, which the UK Biodiversity Action Plan divides into four main types:

A **Remnants of semi-natural habitats such as ancient woodland and river corridors.**

B **Pre-industrial rural landscapes with arable land, meadows and villages.**

C **Managed green space, such as parks, gardens, roadside verges and churchyards.**

D **Naturally seeded urban areas such as demolition sites.**

Types A and B are covered by other habitat action plans. An important characteristic of urban areas is their variety of interlinked habitats, both across each town or city as a whole and within individual sites. It is this which gives bats, kestrels, great crested newts and rare species such as ground nesting bees the mixture of breeding,

Release date: 1999

foraging and sheltering areas they need. Even the most visually unattractive site may support species characterised by their resilience and adaptability to human disturbance, and as rural habitats continue to be lost and fragmented, urban areas are becoming increasingly important for biodiversity. Most urban areas in fact support a higher diversity of wild species per unit area than intensively farmed countryside. Urban nature reserves and other wild green spaces provide the only local contact with nature for the 80% of the population living in urban areas, and offer a wealth of educational, economic and social benefits.

Post-industrial land, found in both rural and urban areas, may include disused railway lines, spoil heaps or demolition sites which have been naturally colonised by wild plants, as well as derelict buildings, which provide important habitats for birds and bats. They are often considered worthless for biodiversity, but in fact some of our rarest species depend upon them in the absence of their natural habitats. They are free from intensive management, and often have variations in topography, soil type and drainage which lead to the development of a unique and diverse range of plant communities. Areas such as those being reclaimed from disused colliery sites in the County also present a considerable opportunity for habitat creation.

Due to the fragmented and diverse nature of urban and post-industrial habitats, it is very difficult to know exactly how much important habitat remains. What is certain, however, is that although public attitudes

Release date: 1999

towards these habitats are changing, urban and post-industrial wildlife sites continue to be lost and damaged, often because their value for biodiversity is underestimated.

▶ THREATS

The main factors currently affecting the County's urban and post-industrial habitats are:

- The loss of 'brownfield' sites and green corridors to development, leading to the fragmentation and isolation of sites and species.
- Unsympathetic urban regeneration and reclamation projects, particularly the use of non-native species in landscaping and planting schemes. Also the conversion of wildlife-rich habitats to amenity grassland or tree planting.
- Changes in industrial processes such as mining, which have reduced the creation of temporary habitats such as ash tips, which often support rare and threatened plants.
- The lack of appropriate management of green space, including the over-emphasis on 'tidiness' in parks, gardens and churchyards which often reduces their wildlife value.
- The decontamination of land of ecological importance.
- Damage to sites caused by unmanaged or inappropriate recreational use and other human impacts such as fly-tipping, noise and vandalism.
- Pollution of air, water and soil.
- Built development in flood plains, resulting in higher run-off rates to watercourses and a higher risk of flooding, which in turn leads to pressure for artificial flood defences. Changing flow rates and loss of habitats to development and flood defences are a key threat to wetland biodiversity.
- The accidental or deliberate introduction of aggressive non-native plant species, which may dominate areas at the expense of native plants.

Release date: 1999

▶ CURRENT INITIATIVES - EXAMPLES

- Many private landowners manage urban or post-industrial sites of actual or potential biodiversity value, and have a vital part to play in their conservation. This includes gardeners and allotment holders as well as large land owners.
- The Countryside Commission's document 'Linking Town and Country'(1999) advocates the production of 'Greenscape Strategies' for every urban area setting out clear policies and programmes for the protection of the urban green network.
- A number of urban and post-industrial sites are designated as Sites of Special Scientific Interest (SSSI), Sites of Importance for Nature Conservation (SINC) or Local Nature Reserves (LNR).
- The Nottinghamshire Structure Plan and many Local Plans recognise the importance of protecting, promoting and enhancing urban wildlife. Nottingham City Council and Mansfield District Council have published Nature Conservation Strategies which aim to protect and promote biodiversity within urban areas.
- The Nottinghamshire Wildlife Trust's Urban Wildlife Scheme promotes nature conservation in all urban areas by involving the public, managing nature reserves, promoting surveys and supporting local projects, as well as campaigning to raise the profile of urban wildlife.
- The Greenwood Community Forest aims to regenerate the landscape on the urban fringe, improving wildlife habitats and public access by advising and supporting Local Authorities, land managers and community groups.
- The Corridors to the Countryside Project is a partnership based initiative to enhance areas along the main green corridors in Nottingham for wildlife and people.
- The Greenwood Community Forest, in association with BTCV and Local Authorities, run a voluntary tree warden scheme and a network of community tree nurseries producing locally sourced stock.
- The Groundwork Trusts and BTCV work with local communities throughout urban areas on a wide range of nature conservation and environmental improvement projects.

Release date: 1999

- Many local communities have formed groups such as 'Friends of Brierley Forest Park' and 'Friends of Berry Hill', and work closely with Local Authorities and Conservation Groups to manage their local site. BTCV provides a support scheme for such groups.
- Nottinghamshire County Council and the Forestry Commission, funded by British Coal, are restoring 1000 ha of former colliery spoil tip to woodland and other habitats.
- The Nottinghamshire Wildlife Trust are working with East Midlands Electricity in 'greening' their sub-stations across the County.
- The Environment Agency is addressing the issue of increased run-off to water courses from development by promoting the use of balancing ponds, lagoons etc, collectively known as Best Management Practice.

▶ TARGETS

- Identify and confirm the status of all urban and post-industrial sites of significant conservation value by 2005.
- Establish mechanisms to protect and maintain viable networks of wildlife sites and corridors in all urban areas by 2010, ensuring that all urban inhabitants have access to areas rich in wildlife within 1/4 mile of where they live.
- Secure sympathetic management on 75% of urban SINCs by 2005, increasing this to as near to 100% as practicable by 2010.

▶ PROPOSED ACTION

Policy and Legislation

1 Through planning control, ensure that viable networks of wildlife sites and corridors are maintained in all urban areas. Seek opportunities to create areas of new habitat through approved development.

ACTION: LOCAL AUTHORITIES (LAS), BIODIVERSITY ACTION GROUP (BAG).

2 Ensure that urban and post-industrial habitat creation and management opportunities are

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Release date: 1999

promoted through appropriate Regional and local planning policy instruments.

Action: Government Office East Midlands, LAs.

3 Promote the production of Greenscape Strategies or Local Authority Nature Conservation Strategies for all urban areas, setting out a clear programme of action for the protection and management of the urban green network.

Action: Countryside Agency, BAG, LAs.

4 Where derelict land or former mineral extraction sites of low biodiversity value are being converted to green space, there should be a presumption in favour of restoring and creating habitats of conservation value, particularly where these will link or extend existing habitats.

Action: LAs.

5 Ensure that important features such as highway trees, Notified Road Verges and ancient hedgerows are protected through legislation and the planning system.

Action: LAs.

6 Lobby the Royal Town Planning Institute to promote the inclusion of urban and post-industrial biodiversity issues into accredited courses.

Action: LAs, English Nature (EN).

7 Ensure that urban and post-industrial habitats are recognised in the Greenwood Community Forest Plan, and opportunities for their conservation explored.

Action: Greenwood Community Forest (GCF).

Site Safeguard and Management

8 Ensure that all District or Borough Nature Conservation Strategies incorporate policies and targets for the designation of Local Nature Reserves.

Action: LAs, EN.

9 Develop a methodology to identify SINCs of local community value by 2002. Encourage Local Authorities to give these particular protection through the planning system.

Action: Nottinghamshire Biological and Geological Record Centre (NBGRC).

10 Carry out a survey of road verges throughout the County and expand the current system of Notified Road Verges. Ensure that these are protected, and are managed appropriately.

Action: Nottinghamshire County Council (NCC).

Release date: 1999

11 Maximise the biodiversity value of amenity planting and landscaping schemes by using locally native species and incorporating features such as bat boxes wherever possible.

ACTION: LAs, GROUNDWORK TRUSTS (GTs), BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

12 Review, prioritise, and invest in improving degraded and derelict sites in the urban fringe to enhance their value for biodiversity.

ACTION: LAs, GCF, GTs.

13 Establish a number of demonstration sites to show good practice in urban and post-industrial habitat management.

ACTION: LAs, BTCV, GCF, GTs, NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

14 Ensure that Local Authority grounds maintenance programmes include policies and actions to maintain and enhance the wildlife value of urban green space. Ensure that management plans for all parks and other amenity spaces include objectives to maintain and enhance their biodiversity.

ACTION: LAs.

15 Review Local Authority land holdings and identify opportunities for urban and post-industrial habitat creation and restoration. Set up local schemes to capitalise on these opportunities.

ACTION: LAs.

16 Encourage the setting up of community nurseries growing locally sourced seed for habitat restoration and creation schemes, building on the success of existing initiatives.

ACTION: LAs, BTCV, GCF, GTs.

17 Encourage all schools to enhance the value of their grounds for wildlife and environmental education through tree planting and other habitat creation.

ACTION: LAs, BAG.

Advisory

18 Ensure that appropriate grant aid, advice and training in habitat creation and management are available to the managers of urban and post-industrial wildlife sites.

ACTION: EN, NWT, GCF, BTCV, LAs.

19 Consider setting up an advisory group in every District or Borough. This should comprise Local Authority

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Release date: 1999

SPECIES LIST continued...

- **Kestrel**
- **Barn owl**
- **Blackbird**
- **Dunnock**
- **Black redstart**
- **Northern rustic moth**
- **Bay willow moth**
- **Fly orchid**
- **Fragrant orchid**
- **Field woundwort**
- **Common broomrape**

Release date: 1999

8 SPECIES ACTION PLANS

8.1 INTRODUCTION

8.1.1 The list of species of conservation in Nottinghamshire may be found in Appendix A. It is envisaged that most of these species can be protected and their populations restored in the County through the restoration and appropiate management of the priority habitats. However, some species have such specific requirements that habitat action plans are not enough, and individual action plans for these species are needed. The selection of the first few species to have their own action plans has also been influenced by the consultation process, which identified species which are particularly characteristic of Nottinghamshire, or popular with local people. Action Plans for these high profile species help to promote the Local Biodiversity Action Plan, and are a means by which public involvement in nature conservation can be encouraged.

8.1.2 It is important to remember that **a species with its own action plan is not necessarily more important than other priority species.**

8.1.3 On initial publication, this document will contain five species action plans, and more will be added at periodic reviews.

8.2 FORMAT

8.2.1 The format used for species action plans is derived from the UK Biodiversity Steering Group Report[1] and 'Biodiversity Challenge'[2]. The main elements are as follows:

Release date: 1998

8.2.2 Current Status

A brief description of the status of the species in Nottinghamshire, relating this to the national picture. Detailed ecological information is not included, since this may be found elsewhere.

8.2.3 Threats

A list of the main factors threatening and/or causing the decline of the species in Nottinghamshire.

8.2.4 Current Initiatives - Examples

A list of examples of conservation initiatives currently underway in the County which are relevant to the species.

8.2.5 Targets

A list of conservation targets to be met, giving the timescales over which they are to be achieved. Targets are formulated according to Government guidance[3], and where a species has a UK action plan, local targets reflect national ones. Targets must be ambitious but realistic, and measurable to allow progress to be monitored. Timescales are in multiples of five years from 1995 to facilitate recording and reporting, and to reflect UK biodiversity targets so that national monitoring is possible.

8.2.6 Proposed Action

A list of the actions needed to achieve the targets. Where there is a national species action plan, any relevant action points from this have been included in the local one, and then any additional actions needed in Nottinghamshire added. This is to enable us to fulfill our responsibilities under the UK Biodiversity Action Plan[4].

Release date: 1998

8.2.7 Many organisations have a key part to play in delivering the actions, and although it is obviously inappropriate to make prescriptions for individual land managers, their central role in the implementation process cannot be over-emphasised. Only a selection of organisations have therefore been listed against each action point (in no particular order), and it is important to recognise that the success of this plan depends on the commitment of all those who have an impact on biodiversity, not just those already involved in nature conservation.

8.2.8 What You Can Do

This section is unique to the Nottinghamshire Local Biodiversity Action Plan, and has been added to make action plans more relevant to individual people living in the County, as well as organisations. It contains a few examples of things that individuals can do to participate in the conservation of the species.

REFERENCES

1 UK Biodiversity Steering Group. (1995). *Biodiversity: The UK Steering Group Report, Volume 2: Action Plans*. HMSO, London

2 Wynne, G, Avery, M, et al. (1995). *Biodiversity Challenge* (2nd edition). RSPB, Sandy

3 UK Local Issues Advisory Group. (1997). *Guidance Notes For Local Biodiversity Action Plans*. Local Government Management Board / UK Biodiversity Steering Group

4 Department of the Environment. (1994). *Biodiversity: The UK Action Plan*. Cm2428. HMSO, London

Release date: 1998

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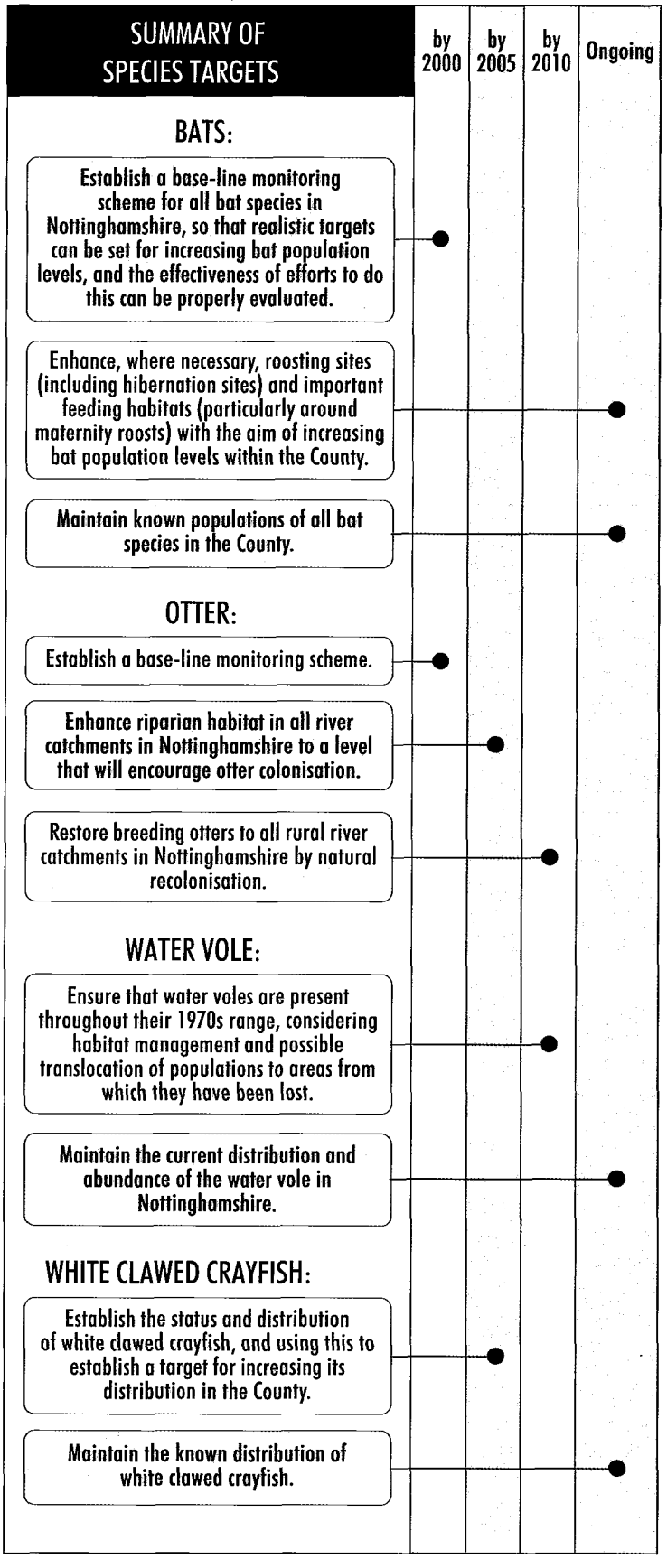

Release date: 1998

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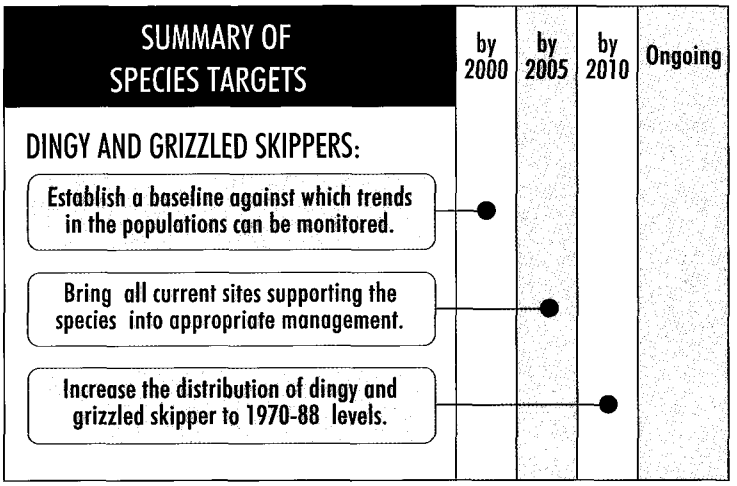

Release date: 1998

BATS

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MOST RECENT UPDATE: May 1998

CURRENT STATUS

Nine of the bat species found in the UK have been recorded in Nottinghamshire. All are insectivorous, requiring insect-rich habitats such as wetlands, deciduous woodland and unimproved pasture in which to feed. They need warm breeding sites in buildings and trees in summer, and cold, secure hibernation sites in winter. Linear landscape features (hedgerows, tree lines, water courses, etc.) are thought to be particularly important to a number of species for travel between roosts and feeding areas.

Little is known about the current status of most of our bat species, although the available evidence suggests an overall decline in population levels. The pipistrelle, although the most abundant and widespread bat in the UK, is thought to have undergone a significant decline in numbers this century. Pipistrelle populations have been monitored since 1978

Release date: 1998

through the National Bat Colony Survey (NBCS). Estimates from this survey indicate a population decline of approximately 70% between 1978 and 1993. The problems of estimating population trends have been compounded by the recent discovery that there may be two distinct species of pipistrelle in the UK.

Population levels of bats in Nottinghamshire are inadequately known, and as yet there is little information on trends, although anecdotal evidence suggests a general decline. Both Nottinghamshire Bat Groups are actively monitoring populations as part of national schemes and it is hoped that a clearer picture will emerge as a result of this and other ongoing survey work in the County. The provisional status of each species in Nottinghamshire is summarised below:

Daubenton's Bat, Myotis daubentoni

A scattered distribution throughout the County, but not common. Closely associated with both standing and running water. Has been observed feeding over most of the larger water bodies in the County, although only three nursery roosts are known. Four or five are found grounded each year, on average. Two hibernation sites are known.

Brandt's Bat, Myotis brandti

Only one grounded individual found, although this species is probably under-recorded due to confusion with the whiskered bat.

Whiskered Bat, Myotis mystacinus

Widespread, although not common. About a dozen roosts known, most of which are thought to be nursery colonies. A few solitary individuals have also been found roosting in buildings and bat boxes. Seven or eight

Release date: 1998

grounded individuals turn up in the County each year on average. One hibernation site known, in a cave.

NATTERER'S BAT, MYOTIS NATTERERI

Widely scattered, but scarce. Only six confirmed roosts currently known, most of which are thought to be nursery colonies. Two of these are in churches. Only one or two grounded individuals are found each year. One hibernation site known, in a cave.

PIPISTRELLE, PIPISTRELLUS PIPISTRELLUS

Widespread and common. Most nursery colonies are found behind the barge boarding of modern houses, although two of our largest colonies are found in older properties. Pipistrelles are also found in bat boxes (particularly in the autumn) and in trees.

NOCTULE BAT, NYCTALUS NOCTULA

A scattered distribution, not common. Closely associated with large areas of deciduous woodland where they roost in trees. Fourteen trees in six sites have been found to contain noctules, although at least four of these trees have been lost, either through natural processes, or in two cases through being felled as unsafe (the bats were only discovered after the trees had been felled.) Several noctules are regularly found in bat boxes at one site.

LEISLER'S BAT, NYCTALUS LEISLERI

Rare. There are confirmed records from just four sites - a tree in which the bats were discovered only after it had been felled, a bat box, and two attics. Only one confirmed nursery colony - in one of the attics.

BROWN LONG-EARED BAT, PLECOTUS AURITUS

Widespread and moderately common, mainly

Release date: 1998

in the roof spaces of older properties, including barns and churches. One tree roost known, and one hibernation site in a cave.

SEROTINE, EPTESICUS SEROTINUS

One grounded individual only, in 1986. Probably a vagrant.

THREATS

The main factors currently affecting bats in Nottinghamshire are:

- **Loss and fragmentation of suitable insect-rich feeding habitats such as wetlands and deciduous woodland.**
- **Loss of linear features such as tree-lines and hedgerows, depriving bats of commuting routes between roosts and feeding areas.**
- **Loss of and damage to roosting sites, including buildings, hollow trees, and underground structures (*mines, tunnels, ice-houses, cellars, etc*).**
- **Ignorance or deliberate avoidance of consultation procedures legally required to protect bats, resulting in the loss of many roosts through demolition, inappropriate building practices, use of toxic timber treatment chemicals, intolerance by roost owners, and tree-felling.**
- **Reduction in the abundance and diversity of insect prey due to intensive agriculture, particularly over-grazing and the use of pesticides.**

CURRENT INITIATIVES - EXAMPLES

- **A UK Species Action Plan for pipistrelle has been prepared, and plans for other species are likely to follow.**
- **Bats and their roosts are protected under a range of legislation, including the Wildlife and Countryside Act 1981, the Bern Convention, the EC Habitats Directive, and the Bonn Convention, which includes an Agreement on the Conservation Of Bats in Europe. Anyone intending to carry out an operation which may effect bats or their roosts (outside the living area of a dwelling) is required by law to consult English Nature.**
- **A range of organisations provide expert advice onbats, including English Nature and both Notts Bat Groups.**

Release date: 1998

- Many private landowners manage areas of actual or potential value for bats. They have a vital part to play in the implementation of this plan.
- The National Bat Monitoring Programme (NBMP) was launched in 1996 by the Bat Conservation Trust, with DoE funding. This should provide valuable information on the UK status and population trends of seven species - greater horseshoe, lesser horseshoe, Daubenton's bat, Natterer's bat, serotine, noctule and pipistrelle.
- Data on bat distribution in the County is collected by both bat groups and by Nottingham Natural History Museum staff, and held at the Notts Biological and Geological Records Centre (NBGRC) at Wollaton Hall.

Both the North and South Notts Bat Groups are also involved in the following activities:

- Construction of a purpose-built hibernaculum, and enhancement of other underground sites to increase their suitability for hibernating bats. Enhancement of habitat by the addition of bat boxes to trees and buildings where appropriate.
- Running a programme of activities to raise the profile of bats - including talks, guided walks, and events at local shows.
- Rescue and rehabilitation of sick, grounded or orphaned bats.

▶ TARGETS

To contribute to UK bat species action plans by:

- Establishing a base-line monitoring scheme for all bat species in Nottinghamshire by the year 2000, so that realistic targets can be set for increasing bat population levels, and the effectiveness of efforts to do this can be properly evaluated.
- Enhancing, where necessary, roosting sites (including hibernation sites) and important feeding habitats (particularly around maternity roosts) - with the aim of increasing bat population levels within the County.
- Maintaining known populations of all bat species in theCounty.

Release date: 1998

▶ PROPOSED ACTION

Policy and Legislation

1 Promote awareness of the legal protection afforded to bats.

ACTION: ENGLISH NATURE (EN), NOTTS BAT GROUPS (NBGs), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), LOCAL AUTHORITIES (LAs).

2 Monitor the degree to which statutory advice given by EN is implemented by those who receive it.

ACTION: EN, LAs, NBGs.

3 Ensure that bats and their habitats are protected and promoted through appropriate regional and local planning policy instruments.

ACTION: LAs, GOVERNMENT OFFICE EAST MIDLANDS, ENVIRONMENT AGENCY (EA).

4 Ensure that the ecological requirements of bats are considered in local and national incentive schemes.

ACTION: EN, LAs, FORESTRY AUTHORITY (FA), FARMING AND WILDLIFE ADVISORY GROUP (FWAG), MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF), FARMING AND RURAL CONSERVATION AGENCY (FRCA), SHERWOOD FOREST TRUST (SFT).

5 Ensure that the needs of bats are taken into account in Local Environment Agency Plans (LEAPS).

ACTION: EA.

6 Bats must be considered at an early stage in the planning of any work which could affect them. Local Authorities should adopt policies and procedures to ensure that the presence of bats is a material consideration in all planning applications.

ACTION: EN, LAs, NBGs.

Site Safeguard and Management

7 Encourage the use of timber treatment chemicals which are non-toxic to bats - both in the building trade and for DIY use.

ACTION: EN, NBGs, NWT.

8 Encourage the use of bat-friendly design features both in new buildings and in the renovation of existing structures.

ACTION: EN, EA, LAs, NBGs, BAT CONSERVATION TRUST (BCT).

Release date: 1998

9 Raise awareness of the needs of bats among those managing trees and woodlands, and encourage appropriate management. Develop a code of good practice in relation to the conservation and management of trees which are of value to bats.

ACTION: BCT, EN, EA, FA, FOREST ENTERPRISE (FE), FWAG, LAs, NBGs, NWT, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV), SFT.

10 Encourage the favourable management of land adjacent to roosts, and promote the restoration or re-creation of insect rich habitats and linear features.

ACTION: EA, LAs, FWAG, NBGs, BTCV, SFT, FRCA.

11 Continue to enhance habitat, where appropriate, by the addition of bat boxes to trees and buildings. Bat boxes should never be used as a substitute for the retention of natural tree roosts.

ACTION: FA, EA, LAs, NBGs, BTCV, NWT.

12 Continue to enhance existing underground sites to make them more suitable for hibernating bats. Promote the construction of purpose-built hibernacula where appropriate.

ACTION: BCT, EN, LAs, NBGs.

Species Management and Protection

13 Maintain and improve current training and licensing procedures for bat workers and others whose occupation may bring them into contact with bats. Support and develop the voluntary bat warden system.

ACTION: BCT, EN, NBGs.

Advisory

14 Provide advice to land owners and managers on sympathetic land management for bats.

ACTION: EN, FWAG, LAs, NBGs, SFT.

Future Research and Monitoring

15 Continue to participate in national monitoring schemes, extending the work to include Natterer's and noctule as well as pipistrelle and Daubenton's. Carry out additional monitoring as necessary to establish a baseline scheme for the County by 2000. In particular,

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Release date: 1998

increase survey effort for summer roosts, and survey and monitor known and potential underground sites.

ACTION: NBGs.

16 Review and improve current methods of storage and handling of data on distribution of bats and their roosts.

ACTION: NBGs, NBGRC, EN.

17 Conduct research into the habitat requirements and ecology of bats in Nottinghamshire to help develop appropriate management advice.

ACTION: NBGs, NWT, BCT.

Communications and Publicity

18 Promote the legal status and conservation importance of bats to roost owners, the building trade, arboricultural staff, planners, owners of ancient buildings, and others whose actions may affect bats.

ACTION: BCT, EN, LAs, NBGs, NBGRC.

19 Continue to operate a programme of educational activities and events to raise the profile of bats amongst the wider public.

ACTION: LAs, NBGs, NBGRC.

▶ WHAT YOU CAN DO

- *Make your house 'bat friendly'* by providing loft access or a purpose built bat box. Your local bat group or English Nature can provide advice.
- Consult English Nature before you do anything that might affect bats or their roosts outside the living area of a dwelling, for example building work, removing hollow trees or remedial timber treatment. Remember that bats and their roosts are legally protected.

Release date: 1998

OTTER

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MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

Historically, otters have been present throughout Nottinghamshire. However during the 17th 18th and 19th centuries there were large financial inducements to hunt and kill otters and up to the 1950s riparian (riverside) land owners from the Dukeries, North Notts Carrs and Hatfield Chase invited the Buckinghamshire Otter Hounds for an annual late summer weeks 'sport'.

In later years the wooded catchments of the Rivers Idle and Ryton supported otters and signs and sightings were still being recorded up to 1977. In recent years there have been many unconfirmed sightings, but the most recent confirmed record was in February 1996 on the Chesterfield Canal at Retford.

▶ THREATS

The main factors currently preventing the recolonisation of Nottinghamshire by the otter are:

- **Historical land drainage and flood defence work, which has resulted in the extensive loss of habitat.**

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Release date: 1998

In particular, the removal of scrub and overhanging trees has made many long stretches of watercourse unsuitable for otters.

- Poor water quality and unsympathetic land management along some watercourses, leading to poor populations of prey species such as fish and crayfish.
- Disturbance. Surveys carried out in 1978 and 1986 showed that this was increasing on many rivers due to angling, boating and the close proximity of urban areas. Although otters are reasonably tolerant, recolonisation of breeding sites may not occur where disturbance is high. Dogs are a particular problem, and for this reason mink hunting may be potentially damaging.
- The trapping of mink, and the use of fyke nets to catch eels. Otters get caught in both types of trap, and otter guards on fyke nets are required by the Environment Agency.

▶ CURRENT INITIATIVES - EXAMPLES

- A national Species Action Plan for otter has been prepared.
- Many private landowners manage areas of potential value for otters. They have an important role to play in the implementation of this plan.
- The Joint Nature Conservation Committee has prepared 'A Framework for Otter Conservation in the UK 1995-2000'.
- National surveys have been funded by English Nature and the Vincent Wildlife Trust to provide distribution data on a five to seven year cycle.
- The Environment Agency carried out surveys in 1995 on rivers arising to the north of Nottingham.
- The EA is currently researching the effects of aquatic pollutants on otters by analysing tissue samples from dead animals.
- Both Forest Enterprise and the Forestry Authority promote sensitive woodland management and expansion in favour of otters through implementation of their Forest and Water Guidelines.

▶ TARGETS

To contribute towards the UK Species Action Plan by:

- Establishing a base-line monitoring scheme by 2000.

Release date: 1998

- Enhancing riparian habitat in all river catchments in Nottinghamshire to a level that will encourage otter colonisation by 2005.
- Restoring breeding otters to all rural river catchments in Nottinghamshire by 2010 by natural recolonisation.

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure that management agreements and incentive schemes take account of the requirements of otters where appropriate.

ACTION: MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF), FARMING AND RURAL CONSERVATION AGENCY (FRCA).

2 Determine Statutory Water Quality Objectives for all standing and running waters which will sustain otters by 2000.

ACTION: ENVIRONMENT AGENCY (EA), SEVERN TRENT WATER (STW).

Site Safeguard and Management

3 Include action for otters in Local Environment Agency Plans (LEAPs) for all rivers with potential for otter populations by 2000.

ACTION: EA.

4 Continue to secure appropriate management of riparian habitats and catchments, including woodlands, to encourage otter colonisation.

ACTION: EA, FORESTRY AUTHORITY (FA), FARMING AND WILDLIFE ADVISORY GROUP (FWAG), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), BRITISH WATERWAYS (BW), MAFF/FRCA, SHERWOOD FOREST TRUST (SFT).

5 Encourage the construction of artificial otter holts adjacent to watercourses where the habitat is considered to be suitable for otters.

ACTION: EA, MAFF/FRCA, NWT, SFT, FWAG, BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

6 Continue to ensure that flood defence and channel management work takes into account the needs of otters, retaining features such as old trees, scrub and overhanging root systems.

ACTION: EA.

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Release date: 1998

7 Include habitat enhancement and restoration measures in all management plans for nature reserves with wetlands suitable for otters.

ACTION: EN, NWT, LOCAL AUTHORITIES (LAs).

8 Create and appropriately manage complementary habitats such as wet grassland, woodland and scrub alongside watercourses to provide potential resting and foraging areas for otters.

ACTION: EA, FA, BIODIVERSITY ACTION GROUP (BAG).

Species Management and Protection

9 Collaborate in the establishment of a River Trent Otter Project to co-ordinate conservation, research, information exchange and publicity.

ACTION: EA, EN, BTCV, LAs, NWT, IN COLLABORATION WITH NEIGHBOURING COUNTIES.

10 Continue to enforce byelaws on the use of otter guards on fyke nets.

ACTION: EA.

11 Encourage landowners to establish buffer strips to improve water quality and reduce silt inputs, while providing suitable habitat for otters.

ACTION: MAFF/FRCA, FWAG, NWT, EA, SFT.

12 Limit accidental killing of otters by providing underpasses on new and existing roads where appropriate.

ACTION: LAs.

13 Manage water courses to achieve sustainable fish stocks in all catchments.

ACTION: EA.

Advisory

14 Ensure that information on otter requirements and conservation is made available to key groups, including landowners, anglers and developers, by publication of guidelines.

ACTION: EA, EN, NWT, LAs.

Release date: 1998

Future Research and Monitoring

15 Collate information on prey productivity, biomass and pollution in occupied and likely recolonisation areas.
ACTION: EA.

16 Obtain baseline data on the status and distribution of otter in Nottinghamshire using trained field workers.
ACTION: EA, NWT.

17 Establish a facility to collect, store and analyse tissues from otter corpses to monitor levels of pollutants.
ACTION: EA.

18 Investigate the effects of disturbance on otter populations.
ACTION: EA.

Communications and Publicity

19 Use the otter as a key species to publicise the importance of water quality and riparian habitats to biodiversity.
ACTION: EA, BAG.

▶ WHAT YOU CAN DO

- Report any sightings of otters or otter signs in Nottinghamshire to the Biological and Geological Records Centre at Wollaton Hall, stating exactly when and where they occured.
- Always keep your dog on a lead when walking in any area where otters occur.

Release date: 1998

WATER VOLE

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MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

The water vole is found throughout Britain, on densely vegetated banks of rivers, streams, canals and standing water. However, it has declined significantly in numbers and distribution this century. A national survey in 1989-90 failed to find voles in 67% of sites where they were previously recorded, and it is envisaged that this will continue to rise.

Recent water vole records for Nottinghamshire are scarce, and although the County has probably suffered similar declines to the rest of the UK, the extent of the current population is unknown. Rufford Lake and Clumber Park are known to support healthy local populations, and the national survey reports a good distribution along the middle Trent and its tributaries. A survey of Nottingham in 1994 indicated a healthy city population, and there are isolated records of sightings in other areas of the County. A more detailed survey is needed before an accurate assessment can be made.

Release date: 1998

▶ THREATS

The main factors currently affecting the water vole in Nottinghamshire are:

- Loss and fragmentation of suitable riparian (riverside) habitat.
- Disturbance of riparian habitats by human recreational activities (particularly angling and boating).
- Predation by mink and domestic cats.
- Pollution of watercourses (this has reduced in recent years, although accidental pollution still causes problems).
- Poisoning by rodenticides used to control the brown rat.

▶ CURRENT INITIATIVES - EXAMPLES

- A national Species Action Plan for the water vole has been prepared.
- The Wildlife Trusts are undertaking a national survey of water voles and their habitat.
- Many private landowners manage areas of actual or potential value for water voles. They have an important role to play in the implementation of this plan.
- The objectives of the Countryside Stewardship Scheme for Watersides allow for the creation of habitats suitable for water voles.
- The British Waterways Environmental Code of Practice ensures that the needs of water voles are taken into account during the planning of bank protection and other channel works.

▶ TARGETS

To contribute to the UK Species Action Plan by:

- Ensuring that water voles are present throughout their 1970s range by 2010, considering habitat management and possible translocation of populations to areas from which they have been lost.
- Maintaining the current distribution and abundance of the water vole in Nottinghamshire.

Release date: 1998

▶ PROPOSED ACTION

Policy and Legislation

1 Following further research to identify the ecological requirements of this species, seek to ensure that these are taken into account when setting water quality objectives for standing and running waters occupied by water voles.

ACTION: ENVIRONMENT AGENCY (EA).

2 Promote management of riparian habitats to favour the water vole.

ACTION: EA, BIODIVERSITY ACTION GROUP (BAG), FARMING AND RURAL CONSERVATION AGENCY (FRCA), SHERWOOD FOREST TRUST (SFT).

3 Ensure that the MAFF 'Code of Good Agricultural Practice for Protection of Water' is published widely. MAFF to pursue poisonings under the Food and Environmental Protection Act 1998 and associated regulations.

ACTION: MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF), FARMING AND WILDLIFE ADVISORY GROUP (FWAG), EA.

Site Safeguard and Management

4 Seek to include the needs of water voles in the management of SSSIs and other wildlife sites.

ACTION: ENGLISH NATURE (EN), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), LOCAL AUTHORITIES (LAS), BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV).

5 Ensure that the protection and enhancement of water vole populations is highlighted and promoted in all Local Environment Agency Plans (LEAPs) by 2005.

ACTION: EA.

6 Explore the possibilities for creating areas of suitable habitat under the Countryside Stewardship Scheme.

ACTION: MAFF, FRCA.

7 Avoid damage to actual or potential water vole habitat caused by culverting, channelisation, sheet piling and flood defence work wherever possible, and explore opportunities for restoring watercourses to a more natural structure.

ACTION: EA, LAS, BRITISH WATERWAYS (BW).

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Release date: 1998

8 Promote the benefits of watercourse buffer strips to landowners and managers, including their value as water vole habitat.

ACTION: FWAG, EN, EA, NWT, BTCV, SFT, ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB).

Species Management and Protection

9 Following further investigation on the effects of mink predation, and if deemed to be appropriate, encourage control of mink where this will increase water vole abundance or range.

ACTION: MAFF, FWAG, BW, LAs.

Advisory

10 Ensure the provision of advice to relevant organisations and riparian owners on the conservation problems of the species.

ACTION: LAs, EN, EA, FWAG, NWT, BTCV, SFT.

Future Research and Monitoring

11 Continue to survey to determine the distribution of water voles in Nottinghamshire, identifying key populations, and explore the need for localised reintroductions.

ACTION: EA, EN, NWT, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE.

12 Pass information gathered during the survey and monitoring of the species to JNCC, BRC and RSNC so that it can be incorporated into a national database.

ACTION: EA, EN, NWT.

Communications and Publicity

13 Raise awareness and improve understanding of the water vole as an indicator species of the quality of riparian habitats.

ACTION: BAG, SFT.

▶ WHAT YOU CAN DO

- Never pour used engine oil, paint or other chemicals down the drain. They will often end up in watercourses and pollute the water vole's habitat. Contact your district council for details of your nearest disposal point.
- *Take part in organised water vole surveys.*

Release date: 1998

WHITE CLAWED CRAYFISH

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MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

The white clawed crayfish (*Austropotamobius pallipes*) is the only species of freshwater crayfish native to the UK. The geographical distribution of the species is governed mainly by geology; it prefers moderately hard, neutral to alkaline water containing reasonable levels of calcium. Native crayfish can be found in a range of habitats in both flowing and standing water, but are most commonly found in rivers and streams with good cover and little sediment. Factors affecting local distribution include the availability of habitats and water quality.

The white clawed crayfish was formerly widespread in Europe, but populations are now confined to a diminishing number of areas. It is relatively widespread in the UK, but many populations have been lost since the 1970s, and the species is in rapid decline. In Nottinghamshire the white clawed crayfish is found in the upper reaches of the River Leen, and isolated populations also exist in still waters at Woodhall Farm and Bulwell Hall.

Three species of non-native crayfish released into the wild by man are a major threat to the native species. An unconfirmed angler's record exists for the non-native signal crayfish (*Pacifasticus leniusculus*) caught in the River Greet.

The white clawed crayfish is protected under both UK and European law, and is classed as globally threatened.

▶ THREATS

The main factors currently affecting the white clawed crayfish in Nottinghamshire are:

- **Crayfish plague, a disease caused by a fungus carried by some North American species including the signal crayfish. Spores can also be carried by water, fish and damp angling and water sampling equipment. There are as yet no records of outbreaks in Nottinghamshire.**
- **Direct competition for food and habitat from non-native crayfish. The signal crayfish in particular is very aggressive and will readily displace native crayfish from favoured habitat.**
- **Habitat modification and management leading to a reduction in abundance of invertebrate prey species and the loss of suitable living conditions.**
- **Pollution, particularly pesticides, agricultural effluents and sewage.**

▶ CURRENT INITIATIVES - EXAMPLES

- **A national Species Action Plan for white clawed crayfish has been prepared.**
- **Many private landowners manage areas of actual or potential value for white clawed crayfish. They have an important role to play in the implementation of this plan.**
- **The Ministry of Agriculture, Fisheries and Food (MAFF) has announced plans to use fisheries legislation to regulate the keeping of non-native crayfish species in order to protect native crayfish and their habitats in England.**
- **The Environment Agency has produced an identification leaflet for crayfish and has initiated research projects looking at the control of signal crayfish and the**

Release date: 1998

treatment of water to prevent the transfer of crayfish plague.

- The University of Nottingham and the national Biological Records Centre hold and update a database on crayfish in the UK.
- The three species of non-native crayfish established in the wild are listed on Schedule 9 of the Wildlife and Countryside Act, which makes it an offence to release or allow them to escape into the wild.

TARGETS

To contribute to the UK species action plan by:

- Establishing the status and distribution of white clawed crayfish by 2005, and using this to establish a target for increasing its distribution in the County.
- Maintaining the known distribution of white clawed crayfish.

PROPOSED ACTION

Policy and Legislation

1 Review local fisheries byelaws to control the use by anglers of crayfish as bait.

ACTION: ENVIRONMENT AGENCY (EA).

2 Control the keeping of non-native crayfish in areas where they are not yet established in the wild and control the trade in these species for ornamental purposes throughout the UK.

ACTION: MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF).

Site Safeguard and Management

3 Include action for white clawed crayfish in Local Environment Agency Plans (LEAPs) for all rivers containing crayfish by 2000.

ACTION: EA.

4 Ensure that appropriate habitat management is undertaken in areas where there are native crayfish populations.

ACTION: EA, ENGLISH NATURE (EN), FARMING AND WILDLIFE ADVISORY GROUP (FWAG), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

CONTINUED OVER...

British Trust for Conservation Volunteers (BTCV), Sherwood Forest Trust (SFT).

5 Continue to examine the feasibility of eradicating non-native crayfish populations from the wild where they threaten populations of native crayfish.

Action: EA, EN.

6 Examine the feasibility of re-introducing white clawed crayfish to selected sites and instigate introduction programmes where appropriate.

Action: NWT, EN, EA.

Species Management and Protection

7 Do not issue licences which permit the keeping of non-native crayfish at sites where there are inadequate precautions to prevent escape.

Action: MAFF.

Advisory

8 Provide advice to those involved in the conservation of native crayfish populations and the management of non-native crayfish populations to ensure the protection of the former.

Action: EA, EN, NWT, FWAG, BTCV, SFT.

9 Provide advice on disinfection procedures to prevent the transmission of crayfish plague.

Action: EA.

Future Research and Monitoring

10 Complete a baseline survey to establish the range and population size of white clawed crayfish by 2000. Develop a monitoring programme to assess changes to this by 2005.

Action: EA, EN, NWT, Notts Biological and Geological Records Centre (NBGRC).

11 Research water treatment methods that prevent the transfer of crayfish plague.

Action: EA.

12 Research options for the effective control and eradication of crayfish plague.

Action: EA.

Release date: 1998

Communications and Publicity

13 Use the native crayfish to publicise the importance of water quality and riparian habitats to biodiversity.

ACTION: EA, BIODIVERSITY ACTION GROUP.

▶ WHAT YOU CAN DO

- Use water wisely. Low stream flows due to water abstraction are a major threat to white clawed crayfish.
- Never buy crayfish to put in a garden pond. Crayfish for sale are not native species, and are likely to find their way into the wild, where they are a major threat to white clawed crayfish.

GRIZZLED SKIPPER AND DINGY SKIPPER

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MOST RECENT UPDATE: May 1998

▶ CURRENT STATUS

The dingy skipper (*Erynnis tages*) occurs throughout England, with its stronghold being the Midlands and southern counties. It feeds mainly on birds-foot trefoil. The grizzled skipper (*Pyrgus malvae*) does not venture as far north, stopping at the approximate level of the Humber Estuary. Its main food plants are wild strawberry, creeping cinquefoil, tormentil and silverweed. Both species, therefore, rely on unimproved grasslands managed by low intensity methods, and both prefer areas where there are patches of bare earth. Disused railway lines provide ideal conditions.

In Nottinghamshire both species have experienced a decline. Because they are both found in similar habitat and in some instances at the same site, they been grouped together in one action plan.

Using the criteria established by Butterfly Conservation, these species are categorised

Release date: 1998

as 'High Priority Regional Important'. This is because:

- There has been a significant decline in recent decades.
- There are less than 30 colonies remaining.

The last atlas of butterfly distribution recorded that dingy skipper was found in 15 10km squares in Nottinghamshire between 1970 and 1988. The grizzled skipper was found in 10 squares during the same period. Records from the Nottinghamshire Biological and Geological Records Centre and Butterfly Conservation's East Midlands Branch show that since 1980 the dingy skipper has been noted in 7 10km squares and the grizzled in 4. Recent recording has seen a further downward trend in dingy skipper records.

The majority of colonies of both species in Nottinghamshire are found on disused railway lines. The old lines west of the County seem to be favoured by the dingy skipper whilst grizzled skipper has its strongest colonies on the lines east and south-east of Bingham.

▶ THREATS

The main factors currently affecting these species in Nottinghamshire are:

- **Loss of suitable habitat in disused railway lines to development, including path and cycle path construction.**
- **Lack of management of sites leading to them becoming overgrown, causing larval food plants to decline.**
- **Small size, isolation, and hence vulnerability of colonies.**

▶ CURRENT INITIATIVES - EXAMPLES

- **The mapping of all butterfly species will be completed in 1999, as part of the Butterflies for the New Millenium project, ready for publication in 2000.**

Release date: 1998

- **Many private and public landowners manage areas of actual or potential value for these species. They have an important role to play in the implementation of this plan.**

▶ TARGETS

- Establish a baseline against which trends in the populations can be monitored by 2000.
- Bring all current sites supporting the species into appropriate management by 2005.
- Increase the distributions of dingy and grizzled skipper to 1970-88 levels by 2010.

▶ PROPOSED ACTION

Site Safeguard and Management

1 **Protect all known sites supporting the species from damaging development.**

ACTION: LOCAL AUTHORITIES (LAs).

2 **Determine ownership of all known sites for either species and inform landowners of their conservation importance.**

ACTION: BUTTERFLY CONSERVATION (BC).

3 **Seek to establish and implement management plans for all sites that hold dingy or grizzled skipper, and to encourage the sensitive management of potential sites for colonisation. Consider also the management of land adjacent to these sites, in particular the potential for spray drift of pesticides or herbicides.**

ACTION: BC, LAs, NOTTINGHAMSHIRE WILDLIFE TRUST (NWT), BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV), ENGLISH NATURE (EN).

4 **Work towards the designation of at least one site as a Local Nature Reserve or Site of Importance for Nature Conservation.**

ACTION: LAs.

Future Research and Monitoring

5 **Continue the recording of both species in the County after the end of the Millenium Project.**

ACTION: BC, NOTTS BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

CONTINUED OVER...

Release date: 1998

6 Establish at least two transect walks which take in a known colony of either species, in order to measure year on year variations in population size. Consider revisiting old sites with potential for recolonisation to look for new populations.

ACTION: BC.

Communications and Publicity

7 Promote, by publicising the plight of dingy and grizzled skipper, the worth of disused railway lines as a valuable habitat for wildlife. Consider producing a leaflet for site managers on management for skippers.

ACTION: BC, BIODIVERSITY ACTION GROUP.

▶ WHAT YOU CAN DO

- Report all sitings of dingy and grizzled skipper to the Notts Biological and Geological Records Centre at Wollaton Hall.
- Volunteer for practical conservation work with BTCV or Nottinghamshire Wildlife Trust on sites supporting, or with the potential to support, dingy or grizzled skipper.

Release date: 1998

BARN OWL

AUTHOR: **Clive James**
Rushcliffe Barn Owl Project

LEAD AGENCY: The Farming and Wildlife Advisory Group
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Southwell
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NG25 0QF

MOST RECENT UPDATE: June 1999

▶ CURRENT STATUS

The barn owl is found in almost every continent and is one of the most widely distributed land birds in the world. It nests and roosts in tree cavities, old and derelict farm buildings and barns, and feeds mainly on small mammals such as voles, shrews and mice. Barn owls hunt mainly at night, and may be seen over areas of rough grassland, field margins, hedgerows and derelict land, as well as along water courses, woodland edges and newly planted woodland. The presence of barn owls is a good indicator of the health of biodiversity in lowland areas, as the range of habitats needed by the species is also vital for a wide variety of other animals and plants.

The barn owl was quite a common sight in the 19th Century, but the UK population has fallen by an estimated 90% since 1830. The decline has been particularly sharp in the last half of this century, mainly due to agricultural intensification. Recent national population figures (1996) put numbers at 3,750 pairs for

Release date: 1999

England and Wales, and 650 pairs for Scotland, putting the overall national population at 10,000 birds.

Nottinghamshire's first census of barn owls was in 1932 by George Blaker, who estimated the total number of breeding pairs as 210. A national survey carried out by the Hawk and Owl Trust in 1994 puts the number at an estimated 95 pairs, a drop of 55%. This decline is believed to be continuing.

▶ THREATS

The main factors currently affecting barn owls in Nottinghamshire are:

- **Loss of habitats such as rough grassland and hedgerows to development and agricultural intensification, with a consequent decline in prey species populations.**
- **Lack of long grass in field margins and roadside verges as a habitat for small mammals.**
- **A lack of old trees for nesting and roosting sites.**
- **Demolition or conversion of old agricultural buildings. The design of modern buildings often makes them unsuitable nest sites.**
- **Poisoning by rodenticides and insecticides, which get passed up the food chain to barn owls. Of particular concern are 'second generation' poisons used to control warfarin resistant rodents.**
- **Road deaths. The lack of long grass means that barn owls often feed along roadside verges, making them vulnerable. Large numbers of owls are killed every year in the UK.**
- **Disturbance to nesting and roosting sites (often unintentionally) by people.**
- **Hard winters in recent years have led to many barn owls dying of starvation.**

Release date: 1999

▶ CURRENT INITIATIVES - EXAMPLES

- Many private landowners manage areas of actual or potential barn owl habitat, and have a vital part to play in the conservation of the species.
- The barn owl is protected under Schedule 1 of the Wildlife and Countryside Act 1981, and is a priority species under European law. It is an offence to kill or injure a barn owl, or disturb it while it is building or using a nest.
- It is illegal to release a barn owl into the wild without a license, as released birds are often unable to survive. Official release schemes have had some success.
- New areas of suitable habitat will be created under several habitat action plans, including those for lowland heathland, grassland and oak-birch woodland.
- The Rushcliffe Barn Owl Project aims to increase the number of barn owls in the district by working with land managers to provide nest boxes and restore or create suitable habitats.
- Rufford Country Park are undertaking a habitat study and barn owl project.
- The Crown Estates have a project to install barn owl boxes on their land.
- The creation of field margins and the maintenance of grasslands are promoted through the Countryside Stewardship Grant Scheme.
- The Environment Agency and the Hawk and Owl Trust are to erect and monitor 9 owl boxes in the Lower Trent catchment.
- Nottinghamshire County Council and the Forestry Commission, funded by British Coal, are restoring 1000 ha of former colliery spoil tip to woodland and other habitats suitable for barn owls.
- The Barn Owl Trust is a national organisation which aims to conserve the species and its environment. It provides a free information and advice service.

Release date: 1999

▶ TARGETS

- Determine the current status and distribution of the barn owl in Nottinghamshire by 2005 and formulate a target for expansion.
- Maintain the current distribution and abundance of the barn owl in Nottinghamshire.
- Create nesting sites and maintain and enhance suitable feeding habitats with the aim of increasing barn owl population levels in the County.

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure that barn owls and their habitats are protected and promoted through appropriate regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LOCAL AUTHORITIES (LAs).

2 Promote awareness of the legal protection afforded to barn owls among land owners, planning officers and contractors.

ACTION: LAs, ENGLISH NATURE (EN), ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

3 Ensure that the needs of barn owls are taken into account in local and national incentive schemes.

ACTION: EN, LAs, FORESTRY COMMISSION (FC), MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF).

Site Safeguard and Management

4 When assessing applications for the conversion of old or derelict agricultural buildings, ensure that they will not result in damage to barn owl nest and roost sites and adjacent habitats. Local Authorities must consult English Nature if there is reason to believe that owls may be present.

ACTION: LAs, NWT, RSPB, EN.

5 Encourage the use of barn owl boxes both in new buildings and the renovation of existing structures.

ACTION: NWT, EN, RSPB, LAs.

6 Seek to include the needs of barn owls in the management of SSSIs and other wildlife sites.

ACTION: EN, LAs, NWT, RSPB.

Release date: 1999

7 Encourage the favourable management of land adjacent to known nest sites, and promote the restoration or re-creation of suitable feeding habitats and linear features. Encourage the installation of nest boxes in appropriate locations.

ACTION: EA, LAs, RSPB, NWT, FARMING AND WILDLIFE ADVISORY GROUP (FWAG), BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV), AGRICULTURE AND DEVELOPMENT ADVISORY SERVICE (ADAS), SHERWOOD FOREST TRUST (SFT).

8 Ensure that the restoration of colliery sites under the British Coal deal incorporates barn owl boxes and raptor perches in suitable locations wherever appropriate.

ACTION: FC, NOTTINGHAMSHIRE COUNTY COUNCIL (NCC).

Species Management and Protection

9 Build on the success of the Rushcliffe Barn Owl Project by setting up similar projects in other districts, or one for the County as a whole. Encourage barn owl box sponsorship, and work with land managers on schemes for habitat creation and management.

ACTION: NWT, LAs, FWAG, RSPB.

10 Raise awareness among land managers of the need to reduce the use of rodenticides by carefully targeted use.

ACTION: BIODIVERSITY ACTION GROUP (BAG).

Advisory

11 Ensure the provision of advice to relevant organisations and land managers on the conservation problems of the species.

ACTION: EN, FWAG, LAs, SFT, ADAS, RSPB, FARMING AND RURAL CONSERVATION AGENCY (FRCA).

Future Research and Monitoring

12 Continue to monitor existing breeding pairs, and contribute records to the NBGRC.

ACTION: NWT, EN, FWAG, BRITISH TRUST FOR ORNITHOLOGY (BTO), NOTTS BIRDWATCHERS (NB), LOUND BIRD CLUB, RINGING GROUPS.

13 Carry out a survey to determine the current status and distribution of the barn owl in Nottinghamshire.

ACTION: NWT, NB, BTO, RSPB, NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

CONTINUED OVER...

Release date: 1999

14 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Communications and Publicity

15 Raise awareness of the plight of the barn owl and use it to promote the value of hedgerow trees, field margins, hay meadows and other habitats to the general public. Aim to maximise public involvement in surveys and nest box schemes wherever appropriate.

ACTION: BAG, SFT.

16 Use the barn owl as a flagship species to promote the conservation of field margins, hedgerows and other farmland habitats to land owners and managers.

ACTION: EN, FWAG, LAs, SFT, NWT, RSPB, ADAS, NATIONAL FARMERS UNION, COUNTRY LANDOWNERS ASSOCIATION.

▶ WHAT YOU CAN DO

- Report sightings of barn owls (alive or dead) to the Biological Records Centre at Wollaton Hall.
- Encourage the managers of your local park, churchyard or road verge to set aside areas where grass can be left long, as shelter for the small mammals on which barn owls feed.
- Put up a barn owl box in a suitable location. Advice is available from the Rushcliffe Barn Owl Project (if you live in Rushcliffe) or the RSPB.

Release date: 1999

NIGHTJAR

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LEAD AGENCY: The Sherwood Forest Trust
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MOST RECENT UPDATE: June 1999

CURRENT STATUS

The European nightjar is a summer visitor to the UK, and is a characteristic nocturnal bird of heathland, wood pasture, woodland edges and clearings. It was once common, but has been declining in numbers and range throughout Europe for much of this century, mainly due to the loss of its habitat. It is well camouflaged and difficult to survey, the usual method being to count the number of singing males and use this to estimate the total number of birds. Between surveys in 1968-72 and 1992 there was a decline in UK range of 52%, and now the species breeds mainly in southern England, with scattered populations as far north as central Scotland. Numbers reached a low point of 2100 males in 1981, but have now stabilised and are increasing in some areas. In 1992 a national survey resulted in an estimated UK population of 3400 males.

Release date: 1999

The Nottinghamshire nightjar population, although much smaller than it was in the last century, remains relatively healthy largely due to the growth in commercial forestry. Young plantations provide suitable nesting and foraging areas for the species in the absence of more natural habitats. Today the nightjar retains a strong population in the County, with strongholds being the large estates of the Dukeries, Sherwood Forest and Budby. A county-wide survey by the Birklands Ringing Group in 1997 resulted in an estimate of 59 breeding pairs. This makes the Nottinghamshire population of national importance.

▶ THREATS

The main factors currently affecting nightjars in Nottinghamshire are:

- **Loss and fragmentation of suitable nesting and foraging habitats.**
- **Lack of heathland management, leading to invasion by trees or scrub.**
- **Unsympathetic commercial forestry- commercial forests provide good habitat for nightjars when managed appropriately, but changes in management may threaten local populations.**
- **Decrease in large airborne insect prey as a result of intensive agriculture.**
- **Creation of roads through nightjar habitat - their low flight during feeding makes them susceptible to impact with vehicles.**
- **Disturbance by people and dogs. This reduces the amount of time a bird can spend incubating or feeding, and may therefore affect the likelihood of its chicks surviving. It also makes eggs and chicks more vulnerable to predators.**
- **Excessive cold and wet periods in recent years have reduced breeding success.**

Release date: 1999

▶ CURRENT INITIATIVES - EXAMPLES

- A UK Species Action Plan for the Nightjar has been prepared.
- The nightjar is protected under the Wildlife and Countryside Act 1981, and is a priority species under European law. It is illegal to kill or injure a nightjar, take its eggs or damage its nest.
- Many private landowners manage areas of actual or potential nightjar habitat, and have a vital part to play in the conservation of the species.
- The Birklands Ringing Group have been studying and monitoring the nightjar in Nottinghamshire annually since 1986.
- The Nottinghamshire Heathland Strategy and the Habitat Action Plan for Lowland Heathland establish a framework for heathland conservation in the County.
- New areas of suitable habitat will be created under several habitat action plans, including those for lowland heathland and oak-birch woodland.
- Sherwood Forest is one of four trial areas in the English Nature Habitat Restoration Project. EN and the Sherwood Forest Trust are working together to tackle the problems associated with habitat fragmentation in the area.
- The majority of the best heathland areas are within Sites of Special Scientific Interest (SSSI), notified by English Nature.

▶ TARGETS

To contribute towards the UK species action plan by:

- Maintaining the current distribution and abundance of the nightjar in Nottinghamshire.
- Increasing the number of breeding pairs to 72 by 2005 (a 20% increase). This may be done by increasing populations on existing sites and encouraging the colonisation of new sites through appropriate management.

Release date: 1999

▶ PROPOSED ACTION

Policy and Legislation

1 Ensure that nightjars and their habitats are protected and promoted through appropriate regional and local planning policy instruments.

ACTION: GOVERNMENT OFFICE EAST MIDLANDS, LOCAL AUTHORITIES (LAS).

2 Promote awareness of the legal protection afforded to nightjars among land owners and planning officers.

ACTION: LAS, ENGLISH NATURE (EN), ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB), NOTTINGHAMSHIRE WILDLIFE TRUST (NWT).

3 Incorporate action for nightjars into Indicative Forestry Strategies and Forest Design Plans. In particular encourage the planting of areas of broadleaved trees within and around plantations.

ACTION: FORESTRY COMMISSION (FC).

4 Ensure that the needs of nightjars are taken into account in local and national incentive schemes.

ACTION: EN, LAS, FC, MINISTRY OF AGRICULTURE FISHERIES AND FOOD (MAFF).

5 Ensure that the implementation of the Nottinghamshire Heathland Strategy takes into account the needs of nightjars, particularly when identifying suitable sites for heathland re-creation and deciding on the appropriate management of key sites.

ACTION: HEATHLAND STRATEGY STEERING GROUP.

Site Safeguard and Management

6 Ensure that the needs of the nightjar are considered in the management of all SSSIs and other wildlife sites suitable for the species.

ACTION: EN, NWT, RSPB, LAS.

Species Management and Protection

7 Take account of the requirements of the nightjar when considering felling and restocking proposals.

ACTION: FC.

Release date: 1999

8 Incorporate specific targets and management for nightjar in the site management plan for Budby South Forest.

ACTION: DEFENCE ESTATES ORGANISATION (LANDS) EAST.

9 Ensure that heathland restoration schemes incorporate measures to encourage colonisation by nightjars wherever appropriate.

ACTION: NOTTINGHAMSHIRE COUNTY COUNCIL (NCC), NOTTINGHAMSHIRE HEATHLAND FORUM (NHF), SHERWOOD FOREST TRUST (SFT).

10 Ensure that the restoration of colliery sites under the British Coal deal incorporates measures to encourage colonisation by nightjars wherever appropriate.

ACTION: NCC, FC.

Advisory

11 Ensure that advice on the needs of nightjars is available to land-owners and managers, and encourage appropriate management.

ACTION: LAs, EN, NWT, SFT, RSPB, AGRICULTURE AND DEVELOPMENT ADVISORY SERVICE (ADAS), BIRKLANDS RINGING GROUP, FARMING AND WILDLIFE ADVISORY GROUP (FWAG).

12 Disseminate advisory material on the management of heathland for nightjars to land owners and managers. Consider the need for new material.

ACTION: EN, FC, FWAG, ADAS, SFT, NWT, RSPB, FARMING AND RURAL CONSERVATION AGENCY (FRCA).

Future Research and Monitoring

13 Continue to monitor the County's nightjar population on an annual basis, ensuring that methods are consistent with the national monitoring programme.

ACTION: RSPB, BIRKLANDS RINGING GROUP, NOTTS BIRDWATCHERS, NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE (NBGRC).

14 Identify new or existing areas of habitat with the potential to support nightjar, and promote the needs of the species to their owners and managers.

ACTION: RSPB, FWAG, NWT, NATIONAL FARMERS UNION (NFU), COUNTRY LANDOWNERS ASSOCIATION (CLA).

CONTINUED OVER...

Release date: 1999

15 Establish a monitoring procedure to compare achievements to habitat and species targets and revise the Action Plan as necessary.

ACTION: BAG.

Communications and Publicity

16 Use the nightjar as a flagship species to publicise heathland conservation.

ACTION: BAG.

17 Efforts should be made on sites with public access to raise awareness of ground nesting birds and the need to protect them from disturbance. Visitors should be diverted away from sensitive areas during the breeding season where possible.

ACTION: EN, LAs, NATIONAL TRUST.

18 Produce a revised code of birdwatching practice aimed at reducing disturbance to ground nesting birds.

ACTION: RSPB, NWT, NOTTINGHAMSHIRE BIRDWATCHERS, LOUND BIRD CLUB.

▶ WHAT YOU CAN DO

- Keep your dog on a lead when walking on heaths during the bird breeding season (approximately 1st March to 31st July). Always stay on marked paths.
- Join your local bird watching club or the Royal Society for the Protection of Birds.

Release date: 1999

SECTION 9: APPENDIX A

LIST OF SPECIES OF CONSERVATION CONCERN IN NOTTINGHAMSHIRE

The criteria used to select priority species are described in section 2.8. Species whose names are indicated in **bold type** are on the UK Biodiversity Action Plan Long List.

There are many groups for which county priority lists have not yet been compiled. Of these, the following feature in the current UK Long List:

- **Ants**
- **Bees**
- **Caddis flies**
- **Crustacea**
- **Flies**
- **Millipedes**
- **Molluscs**
- **Bryozoans**
- **Stone flies**
- **True bugs**
- **Wasps**
- **Worms**
- **Algae**
- **Fungi**
- **Lichens**
- **Liverworts**
- **Mosses**
- **Stoneworts**

For most of these groups, our knowledge of the local status of species is relatively poor. The Biodiversity Action Group will work with local and national experts towards the eventual compilation of County priority lists for all these groups.

There are many other groups which have been omitted from the Long List due to a lack of information. The compilation of national and local priority lists for these will require extensive survey and research, and must be seen as a long term prospect, requiring considerable investment in biological recording.

Release date: 1998

MAMMALS

Twenty four UK Long List mammals have been recorded in Nottinghamshire. In addition to these, a further two are important at a county level due to:

- Rarity in Nottinghamshire.
- Known or suspected decline in Nottinghamshire.
- Perceived sensitivity/vulnerability to further changes in habitat, land-use practice etc.

LIST OF MAMMALS OF CONSERVATION CONCERN

Badger	Meles meles
Brown hare	Lepus europaeus
Brown long-eared bat	Plecotus auritus
Common shrew	Sorex araneus
Daubenton's bat	Myotis daubentoni
Dormouse	Muscardinus avellanarius
Fallow deer	Dama dama
Harvest mouse	Micromys minutus
Hedgehog	Erinaceus europaeus
Leisler's bat	Nyctalus leisleri
Natterer's bat	Myotis nattereri
Noctule bat	Nyctalus noctula
Otter	Lutra lutra
Pipistrelle bat	Pipistrellus pipistrellus
Pygmy shrew	Sorex minutus
Red deer	Cervus elaphus
Red squirrel	Sciurus vulgaris
Roe deer	Capreolus capreolus
Serotine bat	Eptesicus serotinus
Stoat	Mustela erminea
Water shrew	Neomys fodiens
Water vole	Arvicola terrestris
Weasel	Mustela nivalis
Whiskered/ Brandt's bat	Myotis mystacinus/ M.brandtii
Yellow-necked mouse	Apodemus flavicollis

Release date: 1998

BIRDS

A large number of UK Long List species have been recorded in Nottinghamshire. In addition to these, a few species have been added because they are considered to be particularly characteristic of the County or because local populations are in decline.

LIST OF BIRDS OF CONSERVATION CONCERN

Barn owl	Tyto alba
Bearded tit	Panurus biarmicus
Bewick's swan	Cygnus columbianus bewickii
Bittern	Botaurus stellaris
Blackcap	Sylvia atricapilla
Black redstart	Phoenicurus ochruros
Black-necked grebe	Podiceps nigricollis
Black-tailed godwit	Limosa limosa
Blackbird	Turdus merula
Blue tit	Parus caeruleus
Brambling	Fringilla montifringilla
Bullfinch	Pyrrhula pyrrhula
Chiffchaff	Phylloscopus collybita
Coal tit	Parus ater
Common buzzard	Buteo buteo
Common tern	Sterna hirundo
Corn bunting	Miliaria calandra
Corncrake	Crex crex
Curlew	Numenius arquata
Dipper	Cinclus cinclus
Dotterel	Charadrius morinellus
Dunnock	Prunella modularis
Fieldfare	Turdus pilaris
Gadwall	Anas strepera
Garden warbler	Sylvia borin
Garganey	Anas querquedula
Goldcrest	Regulus regulus
Goldeneye	Bucephala clangula

CONTINUED OVER...

Release date: 1998

SECTION 9: APPENDIX A

Golden plover	Pluvialis apricaria
Goldfinch	Carduelis carduelis
Goshawk	Accipiter gentilis
Grasshopper warbler	Locustella naevia
Great spotted woodpecker	Dendrocopos major
Great tit	Parus major
Green woodpecker	Picus viridis
Greenfinch	Carduelis chloris
Grey heron	Ardea cinerea
Grey partridge	Perdix perdix
Grey wagtail	Motacilla cinerea
Hawfinch	Coccothraustes coccothraustes
Hen harrier	Circus cyaenus
Herring gull	Larus argentatus
Hobby	Falco subbuteo
Honey buzzard	Pernis apivorus
House martin	Delichon urbica
Jack snipe	Lymnocryptes minimus
Kestrel	Falco tinnunculus
Kingfisher	Alcedo atthis
Lapwing	Vanellus vanellus
Lesser black-backed gull	Larus fuscus
Lesser spotted woodpecker	Dendrocopos minor
Lesser whitethroat	Sylvia carruca
Linnet	Carduelis cannabina
Little ringed plover	Charadrius dubius
Long-eared owl	Asio otus
Mallard	Anas platyrhynchos
Marsh harrier	Circus aeruginosus
Marsh tit	Parus palustris
Meadow pipit	Anthus pratensis
Merlin	Falco columbarius
Montague's harrier	Circus pygargus
Mute swan	Cygnus olor
Nightingale	Luscinia megarhynchos
Nightjar	Caprimulgus europaeus
Nuthatch	Sitta europaea
Oystercatcher	Haemotopus ostralegus

Release date: 1998

SECTION 9: APPENDIX A

Peregrine	Falco perigrinus
Pied flycatcher	Ficedula hypoleuca
Pied wagtail	*Motacilla alba*
Pintail	Anas acuta
Pochard	Aythya ferina
Quail	*Coturnix Coturnix*
Red backed shrike	Lanius collurio
Red kite	Milvus milvus
Redshank	*Tringa totanus*
Redstart	Phoenicurus phoenicurus
Redwing	Turdus iliacus
Reed bunting	Emberiza schoeniclus
Reed warbler	Acrocephalus scirpaceus
Ringed plover	Charadrius hiaticula
Ruff	Philomachus pugnax
Sand martin	Riparia riparia
Sedge warbler	Acrocephalus schoenobaenus
Shelduck	Tadorna tadorna
Short-eared owl	Asio flammeus
Shoveler	Anas clypeata
Skylark	Alauda arvensis
Snipe	Gallinago gallinago
Song thrush	Turdus philomelos
Sparrowhawk	Accipiter nisus
Spotted crake	Porzana porzana
Spotted flycatcher	Muscicapa striata
Starling	Sturnus vulgaris
Stock dove	Columba oenas
Stonechat	Saxicola torquata
Swallow	Hirundo rustica
Tawny owl	Strix aluco
Teal	Anas crecca
Tree pipit	Anthus trivialis
Tree sparrow	Passer montanus
Treecreeper	Certhia familiaris
Tufted duck	Aythya fuligula

CONTINUED OVER...

Release date: 1998

Turtle dove	Streptopelia turtur
Water rail	Rallus aquaticus
Waxwing	Bombycilla garrulus
Whinchat	Saxicola rubetra
Whitethroat	Sylvia communis
Whooper swan	Cygnus cygnus
Wigeon	Anas penelope
Willow tit	Parus montanus
Willow warbler	Phylloscopus trochillus
Wood warbler	Phylloscopus sibilatrix
Woodcock	Scolopax rusticola
Woodlark	Lullula arborea
Wryneck	Jynx torquilla
Yellow wagtail	Motacilla flava
Yellowhammer	Emberiza citrinella

Release date: 1998

REPTILES

Four of the six reptiles native to the UK occur in Nottinghamshire, and of these, three are on the UK Long List. In addition to these, the common lizard has been added because it has a very localised distribution in Nottinghamshire, is under threat from the loss of its habitat, and has been declining in the County for some time.

LIST OF REPTILES OF CONSERVATION CONCERN

Adder	*Vipera berus*
Common lizard	*Lacerta vivipara*
Grass snake	*Natrix natrix*
Slow worm	*Anguis fragilis*

AMPHIBIANS

Four of the six native amphibians occur in Nottinghamshire. All are on the UK Long List.

LIST OF AMPHIBIANS OF CONSERVATION CONCERN

Common frog	*Rana temporaria*
Common toad	*Bufo bufo*
Great crested newt	*Triturus cristatus*
Smooth newt	*Triturus vulgaris*

FISH

Six UK Long List species have been recorded in Nottinghamshire. In addition to these, the brown trout has been added because it has a highly localised distribution in the County, and is known to be declining.

LIST OF FISH OF CONSERVATION CONCERN

- **Brook lamprey**

CONTINUED OVER...

Release date: 1998

▶ **Brown trout**	Salmo trutta
▶ **Bullhead**	Cottus gobio
▶ **Burbot**	Lota lota
▶ **Smelt**	Osmerus eperlanus
▶ **Spined loach**	Cobitis maximus
▶ **Atlantic salmon**	Salmo salar

Release date: 1998

BUTTERFLIES AND MOTHS (LEPIDOPTERA)

The following list has been compiled by Dr Sheila Wright, Keeper of Biology at the Nottinghamshire Biological and Geological Records Centre, Wollaton Hall.

Only eight species of Lepidoptera on the UK Long List occur in Nottinghamshire. However, there are a large number of other nationally rare and threatened species which have not yet been included in the Long List, and many of these are found in the County. The following list contains all nationally important species, and those of county importance, recorded in Nottinghamshire since 1980. The UK status of each species is indicated as follows:

RDB1: Endangered

Species recorded in 15 or fewer 10km squares of the national grid which are in danger of extinction.

RDB2: Vulnerable

Species recorded in 15 or fewer 10km squares which are likely to move into RDB1 in the near future if causal factors continue.

RDB3: Rare

Species recorded in 15 or fewer 10km squares which have small populations, but do not at present qualify as RDB1-2.

Na: Nationally Scarce Grade A

Species recorded in 16-30 10km squares since 1980.

Nb: Nationally Scarce Grade B

Species recorded in 31-100 10km squares since 1980.

Local:

Species with localised national distributions, recorded in 101-300 10km squares since 1980.

All other species are nationally common, but have been recorded in 3 or fewer 10km squares in Nottinghamshire since 1980, and are hence

Release date: 1998

of county importance. As in all lists, names in **bold type** indicate UK Long List.

LIST OF BUTTERFLIES AND MOTHS OF CONSERVATION CONCERN

Alder kitten	Furcula bicuspis	Nb
Alder moth	Acronicta alni	Local
Angle-striped sallow	Enargia paleacea	Nb
Annulet	Gnophos obscurata	Local
Anomalous	Stilbia anomala	Local
Archer's dart	Agrotis vestigialis	Local
August thorn	Ennomos quercinaria	Local
Autumn green carpet	Chloroclysta miata	Local
Balsam carpet	Xanthorhoe biriviata	Na
Barred chestnut	Diarsia dahlii	Local
Barred hook-tip	Drepana cultraria	Local
Barred rivulet	Perizoma bifaciata	Local
Beautiful brocade	Lacanobia contigua	Local
Beautiful hook-tip	Laspeyria flexula	Local
Beautiful yellow underwing	Anarta myrtilli	
Birch mocha	Cyclophora albipunctata	Local
Bird's wing	Dypterygia scabriuscula	Local
Blackneck	Lygephila pastinum	Local
Blomer's rivulet	Discoloxia blomeri	Nb
Blotched emerald	Comibaena bajularia	Local
Bordered sallow	Pyrrhia umbra	Local
Brindled ochre	Dasypolia templi	Local
Broad-bordered bee hawk-moth	Hemaris fuciformis	Nb
Broom-tip	Chesias rufata rufata	Nb
Brown argus	Aricia agestis	Local
Brown scallop	Philereme vetulata	Local
Brown-tail	Euproctis chrysorrhoea	Local
Brown-veined wainscot	Archanara dissoluta	Local
Buff footman	Eilema deplana	Local
Burnet companion	Euclidea glyphica	
Butterbur	Hydraecia petasitis	Local
Chamomile shark	Cucullia chamomillae	Local

Release date: 1998

SECTION 9: APPENDIX A

Clay triple-lines	Cyclophora linearia	Local
Clouded buff	Diacrisia sannio	Local
Clouded magpie	Abraxas sylvata	Local
Cream wave	Scopula floslactata	Local
Cream-bordered green pea	Earias clorana	Nb
Crescent	Celaena leucostigma	Local
Dark brocade	Mniotype adusta	
Dark spectacle	Abrostola trigemina	
Dark umber	Phlereme transversata	Local
Dentated pug	Anticollix sparsata	Na
Devon carpet	Lampropteryx otregiata	Nb
Dingy footman	Eilema griseola	
Dingy shears	Parastichtis ypsillon	Local
Dingy shell	Euchoeca nebulata	Local
Dingy skipper	Erynnis tages	Local
Dog's tooth	Lacanobia suasa	Local
Dotted rustic	Rhyacia simulans	Local
Double lobed	Apamea ophiogramma	Local/Common
Dusky-lemon sallow	Xanthia gilvago	Local
Dwarf cream wave	Idaea fuscovenosa	Local
Early tooth-striped	Trichopteryx carpinata	
Emperor moth	Pavonia pavonia	
Fen wainscot	Arenostola phragmitidis	Local
Four-spotted	Tyta luctuosa	RDB3/Na
Freyer's pug	Eupithecia intricata arceuthata	
Frosted green	Polyploca ridens	Local
Galium carpet	Epirrhoe galiata	Local
Gold spangle	Autographa bractea	
Gold swift	Hepialus hecta	Local
Golden-rod pug	Eupithecia virgaureata	Local
Gothic	Naenia typica	Local
Grass rivulet	Perizoma albulata	Local
Grass wave	Perconia strigillaria	Nb
Great oak beauty	Boarmia roboraria	Nb
Green arches	Anaplectoides prasina	
Green hairstreak	Callophrys rubi	Local

CONTINUED OVER...

Release date: 1998

Grizzled skipper	**Pyrgus malvae**	**Local**
Haworth's minor	Celaena haworthii	Local
Heart and club	**Agrotis clavis**	
Heath rustic	Xestia agathina agathina	Local
Hornet moth	**Sesia apiformis**	**Nb**
July belle	Scotopteryx luridata	
Lappet	**Gastropacha quercifolia**	
Large ear	Amphipoea lucens	Local
Large nutmeg	**Apamea anceps**	**Local**
Large ranunculus	Polymixis flavicincta	Local
Large red-belted clearwing	**Synanthedon culiciformis**	**Nb**
Large twin-spot carpet	Xanthorhoe quadrifasciata	Local
Large wainscot	**Rhizedra lutosa**	
Lead belle	Scotopteryx mucronata umbrifera	
Least black arches	**Nola confusalis**	**Local**
Lempke's gold spot	Plusia putnami gracilis	Local
Lesser cream wave	**Scopula immutata**	**Local**
Lesser-spotted pinion	Cosmia affinis	Local
Light brocade	**Lacanobia w-latinum**	**Local**
Lilac beauty	Apeira syringaria	Local
Ling pug	**Eupithecia f.goossensiata**	**Local**
Lunar marbled brown	Drymonia ruficornis	Local
Lunar thorn	**Selenia lunularia**	**Local**
Lunar-spotted pinion	Cosmia pyralina	Local
Maiden's blush	**Cyclophora punctaria**	**Local**
Map-winged swift	Hepialus fusconebulosa	Local
Maple pug	**Eupithecia inturbata**	**Local**
Marbled brown	Drymonia dodonaea	
Marbled coronet	**Hadena confusa**	**Local**
Marbled white spot	Lithacodia pygarga	
Marsh carpet	**Perizoma sagittata**	**Na**
Marsh pug	Eupithecia pygmaeata	Local
Minor shoulder-knot	**Brachylomia viminalis**	
Mottled grey	Colostigia multistrigaria	
Muslin footman	**Nudaria mundana**	**Local**
Netted pug	Eupithecia venosata	**Local**
Northern drab	**Orthosia opima**	**Local**

Release date: 1998

Northern rustic	Standfussiana Local lucernea	**Local**
Oak eggar	Lasiocampa quercus quercus	
Oak lutestring	*Cymatophorima diluta*	**Local**
Oak nycteoline	Nycteola revayana	**Local**
Obscure wainscot	Mythimna obsoleta	**Local**
Ochreous pug	Eupithecia indigata	
Old lady	Mormo maura	**Local**
Olive	Ipimorpha subtusa	**Local**
Orange footman	Eilema sororcula	**Nb**
Orange sallow	Xanthia citrago	
Orange underwing	Archiearis parthenias	**Local**
Pale oak beauty	Serraca punctinalis	
Peacock moth	Semiothisa notata	**Local**
Pearl-bordered fritillary	Boloria euphrosyne	**Nb**
Phoenix	Eulithis prunata	
Pine hawk-moth	Hyloicus pinastri	**Local**
Pinion-spotted pug	Eupithecia insigniata	**Nb**
Pinion-streaked snout	Schrankia costaeastrigalis	**Local**
Plain pug	Eupithecia simpliciata	**Local**
Plain wave	Idaea straminata	**Local**
Poplar kitten	Furcula bifida	**Local**
Poplar lutestring	Tethea	**Local**
Portland moth	Actebia praecox	**Nb**
Purple hairstreak	Quercusia quercus	**Local**
Red swordgrass	Xylena vetusta	**Nb/Local**
Red-tipped clearwing	Synanthedon formicaeformis	**Nb**
Round-winged muslin	Thumatha senex	**Local**
Ruddy highflyer	Hydriomena ruberata	**Local**
Rufous minor	Oligia versicolor	**Local**
Rush wainscot	Archanara algae	**RDB3**
Saltern ear	Amphipoea fucosa	**Local**
Satyr pug	Eupithecia satyrata	
Scallop shell	Rheumaptera undulata	
Scarce footman	Eilema complana	**Local**
Scarce prominent	Odontosia carmelita	**Local**
Scarce silver-lines	Bena prasinana	**Local**

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Release date: 1998

▶ **Scarce tissue**	Rheumaptera cervinalis	
▶ **Scorched carpet**	Ligdia adustata	Local
▶ **Scorched wing**	Plagodis dolabraria	Local
▶ **Seraphim**	Lobophora halterata	Local
▶ **Shaded pug**	Eupithecia subumbrata	Local
▶ **Silky wainscot**	Chilodes maritimus	Nb/Local
▶ **Silver hook**	Deltote uncula	Local
▶ **Six-belted clearwing**	Bembecia scopigera	Nb
▶ **Slender brindle**	Apamea scolopacina	Local/Common
▶ **Sloe pug**	Chloroclystis chloerata	
▶ **Small argent and sable**	Epirrhoe tristata	
▶ **Small autumnal**	Epirrita filigrammaria	
▶ **Small autumnal**	Epirrita filigrammaria	
▶ **Small chocolate-tip**	Clostera pigra	Nb
▶ **Small elephant**	Deilephila porcellus	Local
▶ **Small emerald**	Hemistola chrysoprasaria	Local
▶ **Small grass emerald**	Chlorissa viridata	Na
▶ **Small rufous**	Coenobia rufa	Local
▶ **Small scallop**	Idaea emarginata	Local
▶ **Small waved umber**	Horisma vitalbata	
▶ **Small white wave**	Asthena albulata	
▶ **Small yellow underwing**	Panemeria tenebrata	Local
▶ **Smoky wave**	Scopula ternata	Local
▶ **Southern wainscot**	Mythimna straminea	Local
▶ **Square-spotted clay**	Xestia rhomboidea	Nb
▶ **Stout dart**	Spaelotis ravida	Local
▶ **Straw dot**	Rivula sericealis	
▶ **Striped wainscot**	Mythimna pudorina	Local
▶ **Suspected**	Parastichtis suspecta	Local
▶ **Sycamore**	Acronicta aceris	Local
▶ **Tawny pinion**	Lithophane semibrunnea	Local
▶ **Tawny shears**	Hadena perplexa perplexa	
▶ **Tissue**	Triphosa dubitata	Local
▶ **Toadflax**	Eupithecia linariata	
▶ **Treble brown spot**	Idaea trigeminata	Local
▶ **Treble lines**	Charanyca trigrammica	
▶ **Triple-spotted clay**	Xestia ditrapezium	Local

Release date: 1998

▶ **Triple-spotted pug**	Eupithicia trisignaria	**Local**
▶ **V-moth**	Semiothisa wauaria	**Local**
▶ **Valerian pug**	Eupithecia valerianata	**Nb**
▶ **Varied coronet**	Hadena compta	
▶ ***Vine's rustic***	*Hoplodrina ambigua*	**Local**
▶ **White admiral**	Ladoga camilla	**Local**
▶ **White colon**	Sideridis albicolon	**Nb**
▶ **White satin**	Leucoma salicis	**Local**
▶ **White-letter hairstreak**	Strymonidia w-album	**Local**
▶ **White-spotted pug**	Eupithecia tripunctaria	**Local**
▶ **Wood carpet**	Epirrhoe rivata	**Local**
▶ **Wormwood**	Cucullia absinthii	**Nb**
▶ **Yellow-barred brindle**	Acasis viretata	**Local**
▶ **Yellow-horned**	Achlya flavicornis	
▶ **Yellow-legged clearwing**	Synanthedon vespiformis	**Nb**

Release date: 1998

DRAGONFLIES AND DAMSELFLIES (ODONATA)

The following list has been compiled by Dr Sheila Wright, Keeper of Biology at the Nottinghamshire Biological and Geological Records Centre, Wollaton Hall.

No UK Long List species have been recorded in Nottinghamshire. The following six species have been selected because they occur in 3 or fewer 10km squares in Nottinghamshire. Four of them are of national importance and are classified as:

Nb: Nationally Notable Grade B
Recorded in 31-100 10km squares of the national grid since 1980.

Local:
Species with localised national distributions, known from 101-300 10km squares since 1980.

LIST OF DRAGONFLIES AND DAMSELFLIES OF CONSERVATION CONCERN

Black darter	Sympetrum danae	Local
Black-tailed	Orthetrum cancellatum	
Common hawker	Aeshna juncea	Local
Hairy dragonfly	Brachytron pratense	Nb
Red-eyed damselfly	Erythromma najas	
Variable damselfly	Coenagrion pulchellum	Nb

SPIDERS AND THEIR RELATIVES

The following list has been compiled by Lawrence Bee.

Spiders are poorly recorded in Nottinghamshire compared to most other groups, and we are therefore unsure of the status of most species. Three species on the UK Long List have been recorded so far in Nottinghamshire, but there are likely to be many other nationally important species in the County. Further survey and research is needed to draw up a more complete priority list.

Release date: 1998

LIST OF SPIDERS AND THEIR RELATIVES OF CONSERVATION CONCERN

a false scorpion	Dendrochernes cyrneus
a spider	Lepthyphantes midas
a spider	Tuberta macrophthalma

GRASSHOPPERS AND CRICKETS (ORTHOPTERA)

The following list was compiled with the help of Roy Frost from Derbyshire *Entomological Society.*

Orthoptera are poorly recorded in Nottinghamshire compared to most other groups. Only eight species have been recorded in total, and none of these feature on the UK Long List. The following three species have been selected as county priorities because they are rare in Nottinghamshire and have specialised habitat requirements which make them especially vulnerable.

LIST OF GRASSHOPPERS AND CRICKETS OF CONSERVATION CONCERN

Common groundhopper	Tetrix undulata
Slender groundhopper	Tetrix subulata
Speckled bush cricket	Leptophyes punctatissima

Release date: 1998

BEETLES (COLEOPTERA)

The following list has been compiled by Dr Sheila Wright, Keeper of Biology at the Nottinghamshire Biological and Geological Records Centre, Wollaton Hall.

Five beetles on the UK Long List occur in Nottinghamshire. However, there are a large number of nationally rare and threatened species which have not been included in the Long List, and many of these are found in the County. The following list contains all nationally important (Red Data Book and Nationally Notable) species recorded in Nottinghamshire. The status of each is indicated as follows:

RDB1: Endangered

Species which have shown a rapid continuous decline over the last twenty years, and now exist in 5 or fewer 10km squares of the national grid.

RDB2: Vulnerable

Species likely to move into RDB1 in the near future, as most or all populations are declining. Found in 15 or fewer 10km squares since 1980.

RDB3: Rare

Species with small populations which are localised or thinly scattered, but not at present qualifying for RDB1-2. Found in 15 or fewer 10km squares since 1980.

RDBK:

Species believed to be rare but too recently discovered to be categorised easily.

RDBI: Red data book indeterminate

Species believed to be rare, but for which data on their distribution is insufficient to allow a grade to be assigned.

Na: Nationally Scarce Grade A

Recorded in 16-30 10km squares since 1980.

Release date: 1998

Nb: **Nationally Scarce Grade B.**
Recorded in 31-100 10km squares since 1980.

P: Indicates a provisional status. As in all lists, a name in **bold type** indicates UK Long List.[ ] indicates species which have not been recorded in the County since the publication of 'The Invertebrate Fauna of Nottinghamshire' by J.W.Carr in 1916. It is believed that these species are likely to still be present.

LIST OF BEETLES OF CONSERVATION CONCERN

Aderidae (Heteromeran beetles):	Aderus oculatus	**Nb**
Anobiidae (Death-watch beetles):	**[Anitys rubens]**	**Nb**
	Dorcatoma flavicornis	**Nb**
	[Dryophilus anobioides]	**pRDB3**
	[Ptinomorphus imperialis]	**Nb**
	[Xyletinus longitarsis]	**pRDB2**
Anthribidae (Fungus weevils):	[Anthribus fasciatus]	**Na**
	[Anthribus nebulosus]	**Nb**
	Platyrhinus resinosus	**Nb**
Apionidae (Pear-shaped weevils):	**[Protapion difforme]**	**Nb**
	[Pseudoprotapion astragali]	**Na**
Attelabidae (Leaf-rolling weevils):	**[Rhynchites cavifrons]**	**Nb**
	[Rhynchites cupreus]	**Nb**
	Rhynchites interpunctatus	**Nb**
	[Rhynchites pauxillus]	**pRDB3**
Buprestidae (Jewel beetles):	**[Agrilus angustulus]**	**Nb**
	[Agrilus laticornis]	**Nb**
	Agrilus pannonicus	**Na**
Byrrhidae (Pill beetles):	[Porcinolus murinus]	**Nb**
Cantharidae (Soldier beetles):	**Cantharis obscura**	**Nb**
	[Malthinus frontalis]	**Nb**
	Malthodes fibulatus	**Nb**

CONTINUED OVER...

Release date: 1998

▶ **Cantharidae (Soldier Beetles): Cont.**	**[Rhagonycha lutea]**	**Nb**
	Rhagonycha translucida	Nb
▶ **Carabidae (Ground beetles):**	**Acupalpus consputus**	**Nb**
	Agonum livens	Nb
	[Agonum nigrum]	**Nb**
	Amara consularis	Nb
	[Amara fulva]	**Nb**
	[Badister unipustulatus]	Nb
	Bembidion clarki	**Nb**
	[Bembidion fluviatile]	Nb
	Bembidion fumigatum	**Nb**
	Bembidion gilvipes	Nb
	[Bembidion lunatum]	**Nb**
	Bembidion obliquum	Nb
	[Bembidion stomoides]	**Nb**
	Blethisa multipunctata	Nb
	Calathus ambiguus	**Nb**
	Carabus monilis	Nb
	[Chlaenius nigricornis]	**Nb**
	Dromius quadrisignatus	**pRDB1**
	Dromius sigma	**Na**
	Harpalus azureus	Nb
	[Harpalus punctatulus]	**Na**
	[Harpalus puncticollis]	pRDB3
	[Harpalus smaragdinus]	**Nb**
	[Licinus depressus]	Nb
	Miscodera arctica	**Nb**
	[Notiophilus quadripunctatus]	Nb
	[Platyderus ruficollis]	**Nb**
	Pterostichus angustatus	Nb
	Pterostichus gracilis	**Nb**
	[Pterostichus longicollis]	Nb
	Pterostichus oblongopunctatus	**Nb**
	Tachys parvulus	Nb
	Trechus discus	**Nb**
▶ **Cerambycidae (Longhorn beetles):**	[Acanthocinus aedilis]	Nb
	Anaglyptus mysticus	**Nb**

Release date: 1998

▶ **Cerambycidae (Longhorn beetles): Cont:**	Aromia moschata	**Nb**
	Gracilia minuta	**pRDB2**
	Grammoptera variegata	**Na**
	[Leptura scutellata]	**Na**
	[Phytoecia cylindrica]	**Nb**
	Prionus coriarius	**Na**
	[Saperda carcharias]	**Na**
	Saperda scalaris	**Na**
	[Stenostola dubia]	**Nb**
▶ **Cerylonidae (Cerylonid beetles):**	Anommatus duodecimstriatus	**Na**
	Cerylon fagi	**Nb**
▶ **Chrysomelidae (Leaf beetles):**	[Chalcoides nitidula]	**Nb**
	Chrysolina oricalcia	**Nb**
	[Chrysolina violacea]	**Nb**
	[Cryptocephalus coryli]	**RDB1**
	Cryptocephalus querceti	**RDB2**
	Donacia cinerea	**Nb**
	[Longitarsus anchusae]	**Nb**
	Longitarsus brunneus	**Nb**
	[Longitarsus ganglbaueri]	**Na**
	Longitarsus ochroleucus	**Nb**
	Luperus flavipes	**Nb**
	[Macroplea appendiculata]	**RDB3**
	[Mantura rustica]	**Nb**
	Phyllodecta decemnotata	**Nb**
	Phyllotreta cruciferae	**Nb**
	Podagrica fuscicornis	**Nb**
	[Psylliodes luteola]	**pRDBK**
▶ **Cisidae (Minute tree-fungus beetles):**	Cis festivus	**Nb**
▶ **Cleridae (Chequered beetles):**	[Opilo mollis]	**Nb**
	Tillus elongatus	**Nb**
▶ **Coccinelidae (Ladybirds):**	Coccinella magnifica	**Na**
	Hippodamia variegata	**Nb**
	Platynaspis luteorubra	**Na**
	Scymnus femoralis / schmidti	**Nb/Nb**
▶ **Colydiidae (Colydiid beetles):**	Synchita humeralis	**Nb**

CONTINUED OVER...

Release date: 1998

▶ **Colydiidae (Colydiid beetles): Cont.**	**Teredus cylindricus**	**RDB1**
▶ **Cryptophagidae (Silken fungus beetles):**	[Atomaria atra]	**Nb**
	[Atomaria nigripennis]	**Nb**
	[Atomaria nigriventris]	**Nb**
	[Atomaria strandi]	**Nb**
	Cryptophagus ruficornis	**Nb**
▶ **Curculionidae (Weevils):**	**Acalles ptinoides**	**Nb**
	[Anthonomus ulmi]	**Nb**
	[Baris lepidii]	**Na**
	Barynotus squamosus	**Nb**
	Barypeithes sulcifrons	**Nb**
	[Brachysomus echinatus]	**Nb**
	[Ceuthorhynchus arquatus]	**RDB1**
	[Ceutorhynchus viduatus]	**Nb**
	[Cneorhinus plumbeus]	**Nb**
	[Coeliodes erythroleucos]	**Nb**
	[Coeliodes ruber]	**Nb**
	Cossonus parallelepipedus	**Nb**
	Cryptorhynchus lapathi	**Nb**
	[Curculio betulae]	**Nb**
	Curculio villosus	**Nb**
	[Drupenatus nasturtii]	**Nb**
	Grypus equiseti	**Nb**
	Gymnetron villosulum	**Nb**
	[Hydronomus alismatis]	**Nb**
	[Hypera fuscocinerea]	**Nb**
	Litodactylus leucogaster	**Nb**
	Magdalis cerasi	**Nb**
	[Magdalis carbonaria]	**Nb**
	Notaris bimaculatus	**Nb**
	Notaris scirpi	**Nb**
	Omiamima mollina	**Na**
	[Otiorhynchus raucus]	**Nb**
	Polydrusus mollis	**Nb**
	[Procas armillatus]	**RDB1**
	[Rhynchaenus testaceus]	**pRDB2**
	[Sitona macularius]	**Nb**

Release date: 1998

▶ **Curculionidae (Weevils): Cont:**	[Tanymecus palliatus]	Nb
	[Trachodes hispidus]	Nb
	Tropiphorus terricola	Nb
▶ **Dermestidae (Fur beetles):**	Ctesias serra	Nb
	Megatoma undata	Nb
▶ **Dytiscidae (Diving beetles):**	Agabus biguttatus	Nb
	Agabus uliginosus	Nb
	Dytiscus circumcinctus	Na
	Dytiscus circumflexus	Nb
	Graptodytes granularis	Nb
	Hydroglyphus pusillus	Nb
	Hygrotus quinquelineatus	Nb
	Ilybius aenescens	Nb
	Ilybius fenestratus	Nb
	Ilybius subaeneus	Nb
	Rhantus grapii	Nb
	Rhantus suturalis	Nb
	Scarodytes halensis	Nb
	Stictonectes lepidus	Nb
▶ **Elateridae (Click beetles):**	[Adrastus rachifer]	pRDB3
	Ampedus cardinalis	RDB2
	[Ampedus cinnabarinus]	RDB3
	Ampedus quercicola	Nb
	Ampedus pomorum	Nb
	Athous campyloides	Nb
	Ctenicera pectinicornis	Na
	Oedostethus quadripustulatus	Na
	[Ischnodes sanguinicollis]	Na
	[Procraerus tibialis]	pRDB3
	[Calambus bipustulatus]	Nb
	[Paraphotistus nigricornis]	pRDB3
▶ **Erotylidae (Pleasing fungus beetles):**	Tritoma bipustulata	Na
▶ **Eucnemidae (False click beetles):**	Melasis buprestoides	Nb
▶ **Geotrupidae (Dor beetles):**	[Geotrupes vernalis]	Nb
▶ **Gyrinidae (Whirligig beetles):**	Gyrinus aeratus	Nb
▶ **Haliplidae (Crawling water beetles):**	Haliplus laminatus	Nb

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Release date: 1998

▶ **Histeridae (Histerid beetles):**	**[Abraeus granulum]**	**Na**
	Gnathonocus buyssoni	**Nb**
	[Grammostethus marginatus]	**Na**
	[Hypocaccus rugifrons]	**Nb**
	Plegaderus dissectus	**Nb**
	Saprinus virescens	**pRDBK**
▶ **Hydraenidae (Water beetles):**	**Hydraena testacea**	**Nb**
	Limnebius nitidus	**Nb**
	Limnebius papposus	**Nb**
	[Ochthebius bicolon]	**Nb**
	Ochthebius nanus	**Nb**
▶ **Hydrophilidae (Water scavenger beetles):**	Anacaena bipustulata	**Nb**
	Berosus luridus	**Nb**
	Cercyon convexiusculus	**Nb**
	Cercyon lugubris	**Nb**
	Cercyon tristis	**Nb**
	Cercyon ustulatus	**Nb**
	Chaetarthria seminulum	**Nb**
	Enochrus melanocephalus	**Nb**
	Enochrus ochropterus	**Nb**
	Helochares lividus	**Nb**
	Helochares punctatus	**Nb**
	Helophorus alternans	**Na**
	Helophorus dorsalis	**Nb**
	Helophorus griseus	**Nb**
	Helophorus nanus	**Na**
	[Hydrochus elongatus] / [ignicollis]	**RDB3/3**
	Laccobius sinuatus	**Nb**
▶ **Lathridiidae (Mould beetles):**	**Corticaria alleni**	**Nb**
	Corticaria linearis	**Nb**
	Corticaria longicollis	**pRDBK**
	Enicmus fungicola	**Nb**
	Enicmus rugosus	**Nb**
	[Enicmus brevicornis]	**Nb**
	Lathridius consimilis	**Nb**
▶ ***Leiodidae (Round fungus beetles):***	Catopidius depressus	**Nb**
	Leiodes cinnamomea	**Nb**

Release date: 1998

Leiodidae (Round fungus beetles): Cont:	Leiodes furva	**Nb**
	[Leiodes oblonga]	**Nb**
	[Ptomaphagus varicornis]	**pRDBK**
Lycidae (Net-winged beetles):	Platycis minuta	**Nb**
	Pyropterus nigroruber	**Na**
Lyctidae (Powder-post beetles):	[Lyctus linearis]	**Nb**
Lymexylidae (Timber beetles):	Hylecoetus dermestoides	**Nb**
Melandryidae (False darkling beetles):	Abdera quadrifasciata	**Na**
	[Conopalpus testaceus]	**Nb**
	Hallomenus binotatus	**Nb**
	Melandrya caraboides	**Nb**
	Orchesia micans	**Nb**
	Phloiotrya vaudoueri	**Nb**
Meloidae (Blister beetles):	[Meloe violaceus]	**Nb**
Melyridae (Soft-winged flower beetles):	Aplocnemus nigricornis	**Na**
	[Aplocnemus pini]	**Nb**
	[Dasytes plumbeus]	**Nb**
Mycetophagidae (Hairy fungus beetles):	[Mycetophagus piceus]	**Nb**
Nitidulidae (Sap beetles):	[Cryptarcha strigata]	**Nb**
	Epuraea adumbrata	**Nb**
	Epuraea distincta	**Na**
	[Epuraea guttata]	**Nb**
	[Epuraea longula]	**Nb**
	[Meligethes ochropus]	**Nb**
	Ischnomera cyanea	**Nb**
Oedemeridae (False blister beetles):	[Ischnomera sanguinicollis]	**Nb**
Peltidae (Peltid beetles):	Thymalus limbatus	**Nb**
Phloiophilidae (Phloiophilid beetles):	[Phloiophilus edwardsi]	**Nb**
Pselaphidae (Short-winged mould beetles):	Batrisodes venustus	**Na**
	[Claviger testaceus]	**Nb**
	Euplectus bonvouloiri rosae	**Nb**
	Euplectus punctatus	**pRDB3**
	Euplectus punctatus tholini	**pRDB3**
	Euplectus fauveli	**Nb**
	Euplectus nanus	**RDB1**
	Plectophloeus nitidus	**pRDB2**

CONTINUED OVER...

Release date: 1998

▶ **Ptiliidae (Feather-winged beetles):**	**[Acrotrichis dispar]**	**Nb**
	Acrotrichis silvatica	**Nb**
	[Euryptilium saxonicum]	**Nb**
	Micridium halidaii	**RDBK**
	Nossidium pilosellum	**Nb**
	[Ptenidium gressneri]	**Nb**
	[Ptenidium turgidum]	**RDBK**
	[Ptiliolum marginatum]	**RDBK**
	[Ptinella denticollis]	**Nb**
	[Ptinella limbata]	**pRDBK**
▶ **Ptinidae (Spider beetles):**	**[Ptinus sexpunctatus]**	**Nb**
	[Ptinus subpilosus]	**Nb**
▶ **Rhizophagidae (Narrow bark beetles):**	Rhizophagus nitidulus	**Nb**
	[Rhizophagus oblongicollis]	**RDB1**
	[Rhizophagus picipes]	**Na**
▶ Scaphidiidae (Scaphidiid beetles):	Scaphisoma boleti	**Nb**
▶ **Scarabaeidae (Dung beetles):**	Aphodius distinctus	**Nb**
	Aphodius porcus	**Nb**
	[Euheptaulacus villosus]	**Na**
	[Onthophagus nuchicornis]	**Na**
▶ **Scirtidae (Marsh beetles):**	**[Prionocyphon serricornis]**	**Nb**
▶ *Scolytidae (Bark beetles):*	*Ernoporus tiliae*	**pRDB1**
	Pityophthorus lichtensteini	**RDB3**
	[Xyloterus signatus]	**Nb**
▶ **Scraptiidae (False darkling beetles):**	**[Scraptia fuscula]**	**pRDB1**
	Scraptia testacea	**pRDB3**
▶ **Scydmaenidae (Small ant-like beetles):**	**[Eutheia linearis]**	**RDB1**
	Microscydmus minimus	**pRDB3**
	[Neuraphes plicicollis]	**Nb**
	[Scydmoraphes sparshalli]	**pRDBK**
	[Stenichnus godarti]	**pRDB3**
▶ Silphidae (Carrion beetles):	Aclypea opaca	**Na**
	[Aclypea undata]	**pRDB1**
	Dendroxena quadrimaculata	**Nb**
	[Nicrophorus interruptus]	**Nb**
	[Nicrophorus vestigator]	**Na**
	[Silpha obscura]	**pRDB2**

Release date: 1998

▶ **Silphidae (Carrion beetles): Cont:**	[Silpha tyrolensis]	Nb
▶ **Sphindidae (Sphindid beetles):**	[Sphindus dubius]	Nb
▶ **Staphylinidae (Rove beetles):**	Acidota cruentata	Nb
	[Aleochara moerens]	Nb
	Aloconota languida	Nb
	[Atheta benickiella]	Nb
	Atheta hygrobia	Nb
	[Atheta nigritula]	Nb
	[Atheta picipes]	Nb
	[Atheta pilicornis]	Nb
	Brachyusa concolor	Nb
	Calodera riparia	Nb
	Calodera uliginosa	pRDBK
	Carpelimus lindrothi	Nb
	Carpelimus obesus	Nb
	Carpelimus similis	Nb
	Dexiogyia corticina	Nb
	Dochmonota clancula	Nb
	Gabrius bishopi	Nb
	Gnypeta ripicola	Nb
	Gnypeta velata	Nb
	[Ilyobates nigricollis] / [subopacus]	pRDBK/Nb
	Ilyobates propinquus	Nb
	Lamprinodes saginatus	Na
	[Mycetoporus punctus]	Nb
	Myllaena elongata	Nb
	[Myllaena fowleri]	pRDBK
	[Ocypus ophthalmicus]	Na
	Oligota apicata	Nb
	[Omalium allardi]	Nb
	[Omalium exiguum]	Nb
	Omalium rugatum	Nb
	Oxypoda exoleta	Nb
	Oxypoda recondita	Nb
	[Oxypoda spectabilis]	Nb
	Oxytelus fulvipes	Na

CONTINUED OVER...

Release date: 1998

▶ **Staphylinidae (Rove beetles): Cont:**	**[Philonthus ebeninus]**	**Nb**
	Phloeoporo angustiformis	**Nb**
	[Phyllodrepa salicis]	**pRDBK**
	[Placusa tachyporoides]	**Nb**
	[Platydracus fulvipes]	**Nb**
	[Platydracus pubescens]	**Nb**
	Platysthethus nodifrons	**Nb**
	Proteinus crenulatus	**Nb**
	[Pseudopsis sulcata]	**Nb**
	[Quedius fulgidus]	**Nb**
	[Quedius puncticollis]	**Nb**
	Quedius scitus	**Nb**
	[Quedius ventralis]	**Nb**
	Quedius xanthopus	**Nb**
	Schistoglossa gemina	**Nb**
	Sepedophilus testaceus	**Nb**
	[Stenus atratulus]	**Nb**
	[Stenus fuscicornis]	**Nb**
	[Stenus nigritulus]	**Nb**
	[Trichophya pilicornis]	**Nb**
▶ **Tenebrionidae (Darkling beetles)**	**Corticeus unicolor**	**RDB3**
	Eledona agricola	**Nb**
	Mycetochara humeralis	**Na**
	Prionychus ater	**Nb**
	Prionychus melanarius	**RDB2**
	Pseudocistela ceramboides	**Nb**
	Scaphidema metallicum	**Nb**
▶ **Tetratomidae (False darkling beetles)**	[Tetratoma desmaresti]	**Na**
▶ **Trogossitidae (Bark-gnawing beetles)**	**[Nemozoma elongatum]**	**RDB3**

Release date: 1998

VASCULAR PLANTS

This catagory includes flowering plants, conifers, ferns and their relatives.

Several UK Long List vascular plant species occur in Nottinghamshire (indicated in **bold**). The following list includes:

- All UK Long List species which have been recorded in Nottinghamshire.
- All species recorded in 9 or fewer localities in the County since 1980 (excluding species which are not native to the UK).
- Species which were identified by the consultation as being particularly characteristic of Nottinghamshire or popular with local people (most of these were already listed due to their conservation status).

LIST OF VASCULAR PLANTS OF CONSERVATION CONCERN

Alternate golden saxifrage	Chrysosplenium alternifolium
Annual knawel	Scleranthus annuus agg.
Arrowgrass	Triglochin palustris
Autumn gentian	Gentianella amarella agg.
Basil thyme	Clinopodium acinos
Bay willow	Salix pentandra
Bilberry	Vaccinium myrtillus
Bird's nest orchid	Neottea nidus-avis
Bistort	Persicaria bistorta
Black bog rush	Schoenus nigricans
Black poplar	Populus nigra
Black spleenwort	Asplenium adiantum-nigrum
Blackcurrant	Ribes nigrum
Bladder sedge	Carex vesicaria
Blinks	Montia fontana
Bloody cranesbill	Geranium sanguineum
Blue fescue	Festuca longifolia
Blue water-speedwell	Veronica anagallis-aquatica
Bluebell	Hyacinthoides non-scripta
Blunt-leaved pondweed	Potamogeton obtusifolius

CONTINUED OVER...

Release date: 1998

Bog myrtle	Myrica gale
Bog pimpernel	Anagallis tenella
Bog pondweed	Potamogeton polygonifolius
Bog stitchwort	Stellaria alsine
Bogbean	Menyanthes trifoliata
Bottle sedge	Carex rostrata
Brackish water-crowfoot	Ranunculus baudotii
Brittle bladder fern	Cystopteris fragilis
Broad leafed helleborine	Epipactis helleborine
Broad-leaved spurge	Euphorbia platyphyllus
Brookweed	Samolus valerandi
Bugloss	Lycopsis arvensis
Burnt orchid	Orchis ustulata
Butterfly orchid	Platanthera chlorantha
Butterwort	Pinguicula vulgaris
Cambridge milk-parsley	Selinum carvifolia
Charlock (ketlock)	Sinapis arvensis
Chicory	Cichorium intybus
Clustered bellflower	Campanula glomerata
Columbine	Aquilegia vulgaris
Common berberis	Berberis vulgaris
Common broomrape	Orobanche minor
Common calamint	Calamintha ascendens
Common cotton grass	Eriophorum angustifolium
Common cow wheat	Melampyrum pratense
Common polypody	Polypodium vulgare
Common ramping-fumitory	Fumaria muralis ssp borei
Corn buttercup	Ranunculus arvensis
Corn cleavers	Galium tricornutum
Corn gromwell	Lithospermum arvense
Corn marigold	Chrysanthemum segetum
Corn parsley	Petroselinum segetum
Cornflower	Centaurea cyanus
Cowslip	Primula veris
Creeping willow	Salix repens
Crested buckler-fern	Dryopteris cristata
Cross leaved heather	Erica tetralix
Cyperus sedge	Carex pseudocyperus

Release date: 1998

SECTION 9: APPENDIX A

Deadly nightshade	Atropa belladona
Dioecious sedge	Carex dioica
Distant sedge	Carex distans
Dwarf gorse	Ulex minor
Dwarf mallow	Malva neglecta
Early marsh orchid	Dactylorhiza incarnata
Eyebright	Euphrasia anglica
Eyebright	Euphrasia pseudokerneri
Fen bedstraw	Gallium uliginosum
Fen pondweed	Potamogeton coloratus
Fen violet	Viola persicifolia
Fennel pondweed	Potamogeton pectinatus
Few flowered spike rush	Eleocharis quinqueflora
Field garlic	Allium oleraceum
Field speedwell	Veronica agrestis
Field woundwort	Stachys arvensis
Flat-stalked pondweed	Potamogeton friesii
Flea sedge	Carex pulicaris
Flixweed	Descurainia sophia
Floating scirpus	Eleogiton fluitans
Fluellen	Kickxia spuria
Fly orchid	Ophrys insectifera
Fragrant agrimony	Agrimonia procera
Fragrant orchid	Gymnadenia conopsea
Frog orchid	Coeloglossum viride
Gladdon	Iris foetidissima
Golden rod	Solidago virgaurea
Grass poly	Lythrum hyssopifolia
Grass-wrack pondweed	Potamogeton compressus
Great duck weed	Spirodela polyrhiza
Great spearwort	Ranunculus lingua
Great wood rush	Luzula sylvatica
Greater broomrape	Orobanche rapum-genistae
Greater chickweed	Stellaria neglecta
Greater water-parsnip	Sium latifolium
Green bears' foot	Helleborus viridis

CONTINUED OVER...

Release date: 1998

Green winged orchid	Orchis morio
Gromwell	Lithospermum officinale
Hairlike pondweed	Potamogeton trichoides
Hairy buttercup	Ranunculus sardous
Hard fern	Blechnum spicant
Hare's tail cotton grass	Eriophorum vaginatum
Heath cudweed	Gnaphalium silvaticum
Hedge sison	Sison amomum
Hemlock water-dropwort	Oenanthe crocata
Henbane	Hyoscyamus niger
Herb Paris	Paris quadrifolia
Hoary cinquefoil	Potentilla argentea
Hound's tongue	Cynoglossum officinale
Hybrid avens	Geum x intermedium
Hybrid dog-rose	Rosa xdumalis
Hybrid eared willow	Salix aurita x viminalis
Hybrid goat willow	Salix caprea x viminalis
Hybrid oak	Quercus robur x petraea
Hybrid osier	Salix purpurea x viminalis x cinerea
Hybrid purple willow	Salix purpurea x viminalis
Hybrid shield-fern	Polystichum xbicknellii
Imperforate St. John's wort	Hypericum maculatum
Ivy leaved speedwell	Veronica hederifolia
Ivyleaved crowfoot	Ranunculus hederaceus
Keel-fruited cornsalad	Valerianella carinata
Knotted hedge parsley	Torilis nodosa
Knotted pearlwort	Sagina nodosa
Large hemp nettle	Galeopsis speciosa
Lesser apium	Apium inundatum
Lesser stitchwort	Stellaria graminea
Lesser trefoil	Trifolium dubium
Lesser water plantain	Baldellia ranunculoides
Lily of the valley	Convallaria majalis
Ling	Calluna vulgaris
Linton's pondweed	Potamogeton xlintonii
Long stalked cranesbill	Geranium columbinum
Longheaded poppy	Papaver dubium
Maiden pink	Dianthus deltoides

Release date: 1998

SECTION 9: APPENDIX A

Marsh cinquefoil	Potentilla palustris
Marsh hawksbeard	Crepis paludosa
Marsh pea	Lathyrus palustris
Marsh pennywort	Hydrocotyle vulgaris
Marsh speedwell	Veronica scutellata
Marsh stitchwort	Stellaria palustris
Marsh violet	Viola palustris
Meadow brome	Bromus commutatus
Meadow cranesbill	Geranium pratense
Meadow saxifrage	Saxifraga granulata
Milkwort	Polygala serpilifolia
Mistletoe	Viscum album
Moor sedge	Carex binervis
Mossy tillaea	Crassula tillaea
Mountain currant	Ribes alpinum
Mountain St. John's wort	Hypericum montanum
Mudwort	Limosella aquatica
Narrow fruited corn salad	Valerianella dentata
Narrow-leaved meadow-grass	Poa angustifolia
Narrow-leaved pepperwort	Lepidium ruderale
Narrow-leaved water-plantain	Alisma lanceolatum
Needle furze	Genista anglica
Nettle leaved bell flower	Campanula trachelium
Nightflowering catchfly	Silene noctiflora
Nipplewort	Lapsana communis
Northern dog-rose	Rosa caesia
Opposite leafed pondweed	Groenlandia densa
Orpine	Sedum telephium
Pale persicaria	*Polygonum lapathifolium*
Pale sedge	Carex pallescens
Parsley water dropwort	Oenanthe lachenalii
Pennyroyal	Mentha pulegium
Petty spurge	Euphorbia peplus
Plot's elm	Ulmus plotii
Prickly sedge	Carex muricata ssp lamprocarpa
Purple small reed	Calamagrostis canescens

CONTINUED OVER...

SECTION 9: APPENDIX A

Pyramid orchid	Anacamptis pyramidalis
Rannoch-rush	Scheuchzeria palustris
Red hemp-nettle	Galeopsis angustifolia
Rock rose	Helianthemum nummularium
Rough hawk's-beard	Crepis biennis
Rue leaved saxifrage	Saxifraga tridactylites
Rustyback	Ceterach officinarum
Sand leek	Allium scorodoprasum
Sand sedge	Carex arenaria
Scarlet pimpernel	Anagallis arvensis ssp arvensis
Scotch thistle	Onopordon acanthium
Sea aster	Aster tripolium
Sea club rush	Bolboschoenus maritimus
Sea mouse-ear	Cerastium diffusum
Sheep's bit	Jasione montana
Sherard's downy-rose	Rosa sherardii
Shining pondweed	Potamogeton lucens
Short-leaved water-starwort	Callitriche truncata
Short-styled field-rose	Rosa stylosa
Silky bent	Apera spica-venti
Slender bird's foot trefoil	Lotus glaber
Slender soft-brome	Bromus lepidus
Slender trefoil	Trifolium micranthum
Small flowered buttercup	Ranunculus parviflorus
Small fluellen	Kickxia elatine
Small pondweed	Potamogeton berchtoldii
Small teasel	Dipsacus pilosus
Small water-pepper	Persicaria minor
Small-flowered catchfly	Silene gallica
Smith's cress	Lepidium heterophyllum
Smooth brome	Bromus racemosus
Smooth cat's ear	Hypochoeris glabra
Smooth hawksbeard	Crepis capillaris
Smooth leaved elm	Ulmus carpinifolia
Smooth rupturewort	Herniaria glabra
Spotted medick	Medicago arabica
Stag's horn club moss	Lycopodium clavatum
Star headed sedge	Carex echinata

Release date: 1998

Stemless thistle	Cirsium acaule,
Stinking mayweed	Anthemis cotula
Subterranean clover	Trifolium subterraneum
Sweet mountain fern	Oreopteris limbosperma
Tasteless water-pepper	Persicaria laxiflora
Tawny sedge	Carex hostiana
Thyme leaved sandwort	Arenaria serpyllifolia ssp serpyllifolia
Toothwort	Lathraea squamaria
Tufted sedge	Carex elata
Various leafed pondweed	Potamogeton gramineus
Venus' comb	Scandix pecten-veneris
Viper's bugloss	Echium vulgare
Water crowfoot	Ranunculus fluitans
Water crowfoot	Ranunculus omiophyllus
Water crowfoot	Ranunculus penicillatus
Water soldier	Stratiotes aloides
Water starwort	Callitriche intermedia
Water violet	Hottonia palustris
Watercress	Rorippa nasturtium-aquaticum
Weld	Reseda luteola
Western gorse	Ulex gallii
White sedge	Carex curta
Whitlow grass	Erophila verna
Whorl grass	Catabrosa aquatica
Whorled water-milfoil	Myriophyllum verticillatum
Wild carrot	Daucus carota
Wild thyme	Thymus polytrichus
Winter-cress	Barbarea vulgaris
Wood barley	Hordelymus europaeus
Wood club rush	Scirpus sylvaticus
Wood dog violet	Viola reichenbachiana
Wood everlasting pea	Lathyrus sylvestris
Wood horsetail	Equisetum sylvaticum
Wood spurge	Euphorbia amygdaloides
Wood stitchwort	Stellaria nemorum
Wood vetch	Vicia sylvatica

CONTINUED OVER...

Release date: 1998

▶ **Yellow bird's nest**	Monotropa hypopitys agg.
▶ **Yellow spurred dog violet**	Viola canina ssp canina
▶ **Yellow star of Bethelehem**	Gagea lutea
▶ **Yellow-sedge**	Carex viridula ssp brachyrrhyncha

Release date: 1998

SECTION 9: APPENDIX B

LIST OF HABITATS OF CONSERVATION CONCERN IN NOTTINGHAMSHIRE

The criteria used to select priority habitats are described in section 2.9. Habitats indicated in **bold type** are those listed as key habitats in the UK Biodiversity Action Plan. Dots indicate habitats for which county action plans have been prepared. All other habitats should have action plans by the end of 1998.

Wet broadleaved woodland	
Oak-birch woodland	●
Mixed ash dominated woodland	
Planted coniferous woodland	
Lowland wood pasture and parkland	
Lowland heathland	●
Ancient and/or species rich hedgerows	
Ditches	
Cereal field margins	
Arable fields	
Improved grassland	
Lowland wet grassland (Included in UK key habitat 'coastal and floodplain grazing marsh')	●
Unimproved neutral grassland (Equivalent to UK key habitat 'lowland hay meadow')	●
Lowland dry acid grassland	
Lowland calcareous grassland	
Reedbed	●
Fen	
Marsh	
Eutrophic standing waters	
Mesotrophic lakes	
Rivers and streams	●

CONTINUED OVER...

Release date: 1998

SECTION 9: APPENDIX B

- Canals
- ***Saline lagoons***
- Urban land
- Post-industrial land

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PRIORITIES FOR BIOGEOGRAPHICAL AREAS

The following table lists the species and habitat action plans currently in operation, and identifies the key Regional Character Areas and Natural Areas for each (see section 3.4 for maps). In this way, resources can be targetted to where they are most effective, and those working in particular areas of the County can identify priorities for biodiversity conservation in these areas.

The biogeographical areas listed may not be the only ones in which the particular species or habitat is found, and this table is not intended to describe distributions. It simply defines, in broad terms, where action for the habitat or species is likely to be most effective. It will be updated as more action plans are produced.

ACTION PLAN	KEY REGIONAL CHARACTER AREAS	KEY NATURAL AREAS
Oak-birch woodland	Sherwood Idle Lowlands East Nottinghamshire Sandlands	Sherwood Humberhead Levels Trent Valley and Rises
Lowland heathland	Sherwood Idle Lowlands East Nottinghamshire Sandlands	Sherwood Humberhead Levels Trent Valley and Rises
Unimproved neutral grassland	Mid-Nottinghamshire Farmlands Trent Washlands Nottinghamshire Wolds	Trent Valley and Rises Coal Measures

CONTINUED OVER...

Release date: 1998

ACTION PLAN	KEY REGIONAL CHARACTER AREAS	KEY NATURAL AREAS
Unimproved neutral grassland (Cont.)	Nottinghamshire Coalfield South Nottinghamshire Farmlands	Trent Valley and Rises Coal Measures
Lowland wet grassland	All, but particularly: Trent washlands Idle Lowlands	All, but particularly: Trent Valley and Rises Humberhead Levels
Reedbed	Trent Washlands Idle Lowlands	Trent Valley and Rises Humberhead Levels
Rivers and streams	All	All
Bats	All	All
Otter	All but particularly: Idle Lowlands Trent washlands	All but particularly: Humberhead Levels Trent Valley and Rises
Water vole	All	All
White clawed crayfish	All, but particularly: Magnesian Limestone Ridge	All, but particularly: Southern Magnesian Limestone
Grizzled skipper and dingy skipper	All, but particularly: Magnesian Limestone Ridge Nottinghamshire Wolds South Nottinghamshire Farmlands Vale of Belvoir	All, but particularly: Southern Magnesian Limestone Trent Valley and Rises

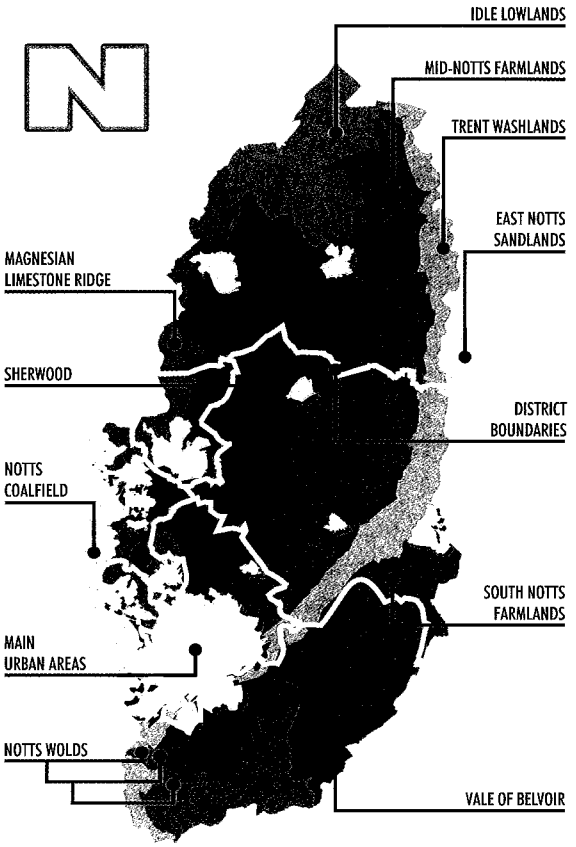
Release date: 1998

SECTION 9: APPENDIX D

PRIORITIES FOR DISTRICTS

The following map shows district boundaries superimposed on the Nottinghamshire Regional Character Areas. This is to enable those working at a district level to identify priorities for biodiversity conservation in their district by referring to the table in Appendix C.

DISTRICT BOUNDARIES AND REGIONAL CHARACTER AREAS.



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SECTION 9: APPENDIX E

RESULTS OF THE PUBLIC CONSULTATION

A copy of the standard reply form used for the public consultation may be found below. This report is concerned with the respondents' answers to questions 1-4 and question 7. The results of the other questions cannot easily be summarised, but were used at appropriate stages during the production of the plan.

Q1 *Which habitats do you think are particularly characteristic of Nottinghamshire?*

The top ten most popular answers were:

- **Broadleaved woodland**
- **Lowland heathland**
- **Rivers and streams**
- **Hedgerows**
- **Lowland neutral pasture** (of various types)
- **Eutrophic standing water** (mainly ponds and gravel pits)
- **Improved grassland**
- **Arable fields**
- **Post-industrial land**
- **Lowland hay meadow**

Q2 *If you had to choose 3 habitats to be priorities in the BAP, what would they be?*

The top ten most popular answers were:

- **Broad-leaved woodland**
- **Hedgerows**

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- **Lowland heathland**
- **Rivers and streams**
- **Lowland hay meadow**
- **Lowland neutral pasture**
- **Eutrophic standing waters**
- **Post-industrial land**
- **Cereal field margins**
- **Marsh**

Which plants and animals do you think are characteristic of the County?

The top fifteen most popular answers were:

- **Oaks**
- **Bluebell**
- **Badger**
- **Fox**
- **Birches**
- **Hedgehog**
- **Skylark**
- **Bats**
- **Grey heron**
- **Cowslip**
- **Brown hare**
- **Heather**
- **Deer**
- **Barn owl**
- **Water vole**

If you had to choose 5 species to be priorities in the BAP, what would they be?

The top fifteen most popular answers were:

- **Skylark**
- **Water vole**
- **Barn owl**
- **Otter**
- **Badger**

Release date: 1998

- **Bluebell**
- **Song thrush**
- **Lapwing**
- **Adder**
- **Snipe**
- **Bats**
- **Orchids**
- **Harvest mouse**
- **Nightjar**
- **Oaks**

Q7 *Has the wildlife of your area changed since you have been there? Which species and habitats have you gained or lost?*

The top fifteen species mentioned by respondents as lost or declining were:

- **Skylark**
- **Song thrush**
- **Lapwing**
- **Barn owl**
- **Water vole**
- **Corn bunting**
- **Tree sparrow**
- **Common frog**
- **Common toad**
- **Grey partridge**
- **Kingfisher**
- **Snipe**
- **Yellowhammer**
- **Bullfinch**
- **House martin**

The top ten habitats mentioned as lost or declining were:

- **Hedgerows**
- **Ponds**
- **Wetland**
- **Meadows**

CONTINUED OVER...

Release date: 1998

- **Field margins**
- **Marsh**
- **Heathland**
- **Farmland**
- **Non-woodland trees**
- **Orchards**

Few people thought that any species had colonised or increased. The following five species received three or more mentions:

- **Sparrowhawk**
- **Grey squirrel**
- **Grey heron**
- **Magpie**
- **Speckled wood butterfly**

Only five habitats were mentioned as gained or increasing, these were:

- **Gravel pits**
- **Arable fields**
- **Garden ponds**
- **Irrigation lakes**
- **Trees (planted)**

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ACTION FOR WILDLIFE

Reply Form

Thank you for agreeing to take part in this consultation.

This form has been designed for use by interested members of the public, as well as by specialist groups and professionals.If you would like to expand on any of your answers, or make additional comments, please do, but try to be as concise as possible.

When you have completed the reply form, simply return it in the pre-paid envelope provided. The closing date for the return of forms is **30th September 1997**. Thank you for taking the time to comment. Your replies will be of great value during the preparation and implementation of the Biodiversity Action Plan.

Name _____

Address _____

_____

_____

_____

Organisation (If applicable)

_____

☐ If you would like to receive a regular newsletter about the project, please tick here.

This reply form, and the Action for Wildlife booklet, have been produced with the support of the Nottingham Branch of Marks & Spencer, and Severn Trent Water Ltd.

Release date: 1998

Species Habitats

Questions 1-4 are designed to find out which species and habitats (see pages 6 & 10) are most popular with people in Nottinghamshire, and which are considered to be typical of the County. This information will be used to encourage more people to get involved in nature conservation, as well as to help set priorities in the Plan. Please use the lists in the booklet for ideas, but you do not have to limit your answers to these species and habitats.

1. *Which habitats do you think are particularly characteristic of Nottinghamshire?*

2. *If you had to choose 3 habitats to be priorities in the Biodiversity Action Plan, what would they be?*

3. *Which plants and animals do you think are characteristic of the County?*

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Q4 *If you had to choose 5 species to be priorities in the Biodiversity Action Plan, what would they be?*

1 _____
2 _____
3 _____
4 _____
5 _____

Q5 *Do you have any other comments on the habitat list?*

_____
_____
_____
_____
_____

Q6 *Do you have any other comments on the species list?*

_____
_____
_____
_____
_____

Changes Biodiversity

Q7 *Has the wildlife of your area changed since you have been there? Which species and habitats have you gained or lost?*

_____
_____
_____
_____

Release date: 1998

Implementing Plan

Q8 *Choose one of your priority habitats from Q2. What do you suggest should be done to protect and restore it in Nottinghamshire?*

Q9 *Choose one of your priority species from Q4. How do you think this animal or plant should be protected and encouraged in the County?*

Q10 *Is there anything you do, or could do, to carry out these suggestions? This may be at work, or in the area where you live.*

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911 *Many local communities have their own projects to help conserve biodiversity. What type of community based project would you like to see set up in your local area?*

Information Advice

For further information, or advice on completing this form, please contact:

The Biodiversity Officer
c/o Nottinghamshire County Council
Environment
Rural Environment
Trent Bridge House
Fox Road
West Bridgford
Nottingham
NG2 6BJ

Telephone: 0115 977 4213

Release date: 1998

SECTION 9: APPENDIX F

LIST OF ORGANISATIONS CONSULTED

The following organisations were given the opportunity to participate in the consultation process, either by commenting on the consultation document or by attending the 1997 Natural Environment Forum:

- **Action Mansfield**
- **Ashfield District Council**
- **Baker Shepherd Gillespie**
- **Bassetlaw District Council**
- **Boots Company Plc**
- **Brackenhurst College**
- **British Gypsum**
- **British Waterways**
- **Broxtowe Borough Council**
- **Butterfly Conservation**
- **Butterley Aggregates Ltd**
- **Centre Parcs Ltd**
- **Defence Estates Organisation (lands) East**
- **Derbyshire Biological Records Centre**
- **Derbyshire County Council**
- **Derbyshire Entomological Society**
- **Derbyshire Wildlife Trust**
- **Doncaster Metropolitan Borough Council**
- **Doncaster Museum**
- **East Midlands Electricity**
- **English Heritage**
- **English Nature**
- **Forest Enterprise**
- **Friends of the Earth**
- **Froglife**
- **Gedling Borough Council**
- **Gedling Borough Wildlife Group**

CONTINUED OVER...

Release date: 1998

- **Government Office East Midlands**
- **Greenpeace**
- **Groundwork Cresswell**
- **Groundwork Greater Nottingham**
- **Kirkby and District Conservation Society**
- **Leicestershire and Rutland Trust for Nature Conservation**
- **Leicestershire Ecology Centre**
- **Lincolnshire County Council**
- **Lincolnshire Trust for Nature Conservation**
- **Mansfield District Council**
- **Mansfield Natural History Society**
- **Marks and Spencer Plc**
- **Members of Parliament**
- **National Power Plc**
- **Newark & Sherwood District Council**
- **Nottingham City Council**
- **Nottingham Civic Society**
- **Nottingham Friends of Museums**
- **Nottingham Green Partnership**
- **Nottingham Trent University**
- **Nottinghamshire Badger Group**
- **Nottinghamshire Biological and Geological Records Centre**
- **Nottinghamshire Bird Watchers**
- **Nottinghamshire County Council**
- **Nottinghamshire Rural Community Council**
- **Nottinghamshire Wildlife Trust**
- **Plantlife**
- **Powergen**
- **Rail Track**
- **Ready Mixed Concrete (UK) Ltd**
- **Redland Aggregates Ltd**
- **RJB Mining**
- **Rotherham Museum**
- **Rural Development Commission**
- **Rushcliffe Borough Council**
- **Severn Trent Water Ltd**

Release date: 1998

- **Sheffield Museum Records Centre**
- **Sorby Naturalists**
- **South and North Nottinghamshire Bat Groups**
- **Tarmac Roadstone**
- **The Agriculture and Development Advisory Service**
- **The Bat Conservation Trust**
- **The British Trust for Conservation Volunteers**
- **The British Trust for Ornithology**
- **The Confederation of British Industry**
- **The Council for the Preservation of Rural England**
- **The Country Landowners Association**
- **The Countryside Commission**
- **The Farming and Rural Conservation Agency**
- **The Farming and Wildlife Advisory Group**
- **The Forestry Authority**
- **The Greenwood Community Forest**
- **The Hawk and Owl Trust**
- **Idle Valley Natural History Society**
- **The International Tree Foundation**
- **The Ministry of Agriculture, Fisheries and Food**
- **The National Farmers Union**
- **The National Federation of Anglers**
- **The National Trust**
- **The Nottinghamshire Chamber of Commerce and Industry**
- **The Nottinghamshire Federation of Womens Institutes**
- **The Ramblers Association**
- **The Royal Society for the Protection of Birds**
- **The Sherwood Forest Trust**
- **The University of Nottingham**
- **The Welbeck Estate Company Ltd**
- **The Wildlife Trusts**
- **The Womens Environment Network**
- **The Woodland Trust**
- **The World Wide Fund for Nature**

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Release date: 1998

- **Thoresby Estate**
- **Yorkshire Water Plc**

Release date: 1998

SECTION 9: APPENDIX G

SOURCES OF INFORMATION AND ADVICE

For information on any aspect of the Nottinghamshire Local Biodiversity Action Plan, contact:

▶ THE BIODIVERSITY OFFICER

c/o Nottinghamshire County Council,
Rural Environment,
Environment,
Trent Bridge House,
Fox Road,
West Bridgford,
Nottingham,
NG2 6BJ

▶ Telephone (0115) 977 4213

THE BIODIVERSITY ACTION GROUP COMPRISES

▶ THE BRITISH TRUST FOR CONSERVATION VOLUNTEERS

Conservation Training Centre,
Chestnut Grove,
Burton Joyce,
Nottingham,
NG14 5DJ

▶ Telephone (0115) 931 3316

▶ ENGLISH NATURE

The Maltings,
Wharf Road,
Grantham,
Lincolnshire,
NG31 6BH

▶ Telephone (01476) 568431

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▶ THE FARMING AND WILDLIFE ADVISORY GROUP

c/o Brackenhurst College,
Nottingham Road,
Southwell,
Nottinghamshire,
NG25 0QF

▶ (01636) 816808

▶ THE INTER-AUTHORITY SUSTAINABILITY WORKING GROUP

c/o The Environmental Coordinator,
Nottinghamshire County Council,
Trent Bridge House,
Fox Road,
West Bridgford,
Nottingham,
NG2 6BJ

▶ (0115) 977 4658

▶ NOTTINGHAMSHIRE BIOLOGICAL AND GEOLOGICAL RECORDS CENTRE

Natural History Museum,
Wollaton Hall,
Nottingham,
NG8 2AH

▶ (0115) 915 3900

▶ NOTTINGHAMSHIRE COUNTY COUNCIL

Senior Nature Conservation Officer,
Countryside Group,
Trent Bridge House,
Fox Road,
West Bridgford,
Nottingham,
NG2 6BJ

▶ (0115) 977 4557

▶ NOTTINGHAMSHIRE WILDLIFE TRUST

The Old Ragged School,
Brook Street,
Nottingham,
NG1 1EA

▶ (0115) 958 8242

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THE ROYAL SOCIETY FOR THE PROTECTION OF BIRDS

Westleigh Mews,
Wakefield Road,
Denby Dale,
Huddersfield,
West Yorkshire,
HD8 8QD

(01484) 861148

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