

English Nature Research Reports

Number 440

English Nature's Research Programme 2001/2002

Compiled by W D Hebden
Edited by J J Hopkins

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Northminster House, Peterborough PE1 1UA

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1. Introduction

The research and development undertaken by English Nature is driven by a wide range of policy and operational needs, and is therefore diverse. In our approach to planning and executing research we use a topic based approach, with the topics reflecting important areas where research and development is required to meet our needs. These topics are not of equal weight in terms of their current spend. A small number of them account for a significant part of our total research and development spend, and reflect the areas of work where we have previously focussed our spend on research and development. They are in a sense mature science areas, and it is likely that in some cases we will gradually reduce our spending on these. Conversely, some areas of spend are ones where very little work has been done so far, and where spend is likely to increase in the future. These include topics, such as Public Access and Invasive Exotic Species, where historically our research activities have been limited, but where there are now major new policy and operational needs to be met. Other areas, specifically relating to Remote Sensing and Risk Assessment, are where we aim to improve conservation practice.

Classification of our research is not a straightforward issue. Some of our research is focussed upon a narrow goal. In other cases, research may cover a number of aspects. For example, in the case of widespread species and habitats, studies of status and ecology are often separated. However, in the case of rare habitats and species, which may occur at very few sites, survey, ecological studies and even management activities are often most efficiently carried out in a single contract. Projects are therefore classified here into the topics they most closely fit, but many have relevance under other headings, particularly those relating to surveys.

Foot and Mouth Disease

Much of our research involves fieldwork, often on agricultural land. In 2001 the spread of Foot and Mouth Disease caused us to severely constrain and cancel many of these activities. Currently, we are evaluating the extent to which projects listed here have been affected. Some of the project work may therefore be deferred until 2002 or in some cases cancelled.

In this register, the projects are grouped under the following headings:

Climate change

It is now broadly accepted that our climate is changing, despite uncertainties about the precise degree to which it is due to anthropogenic impacts. Climate is one of the most important factors influencing plant and animal distribution, and therefore work is required to understand more clearly the way in which climate change may impact on the distribution and abundance of wildlife. We also need to improve our understanding of how changing patterns of land use will impact on wildlife.

Coastal processes

Over the past ten years there has been a growing recognition of the importance of natural processes of erosion and deposition in the maintenance of coastal biodiversity and Earth heritage. Some of this work has been stimulated by observed sea level change, and Government's reassessment of the cost-benefit of engineered coastal defences. In addition, the coast is a preferred area for certain specific types of development, particularly relating to recreation and transport infrastructure. Significant research has therefore been commissioned to allow English Nature to respond to these policy and operational needs.

Diffuse pollution

Pesticides, other synthetic chemicals, and nutrients are now widespread in the biosphere. Their effects upon wildlife are predominantly adverse. Research continues to be required to allow our advice to Government to be formulated. Research is also required to allow us to understand better the local effects of diffuse pollution, not least in aquatic systems.

Earth heritage

English Nature has significant statutory duties relating to the conservation of geological and geomorphological heritage, and we have recently updated our strategy for Earth heritage conservation. Current research relates largely to the identification and protection of Earth heritage sites. In the future, work relating to the methods of site protection, the value of Earth heritage in the interpretation of contemporary environmental change, and also the role of rocks and landforms as the template of biodiversity is likely to be developed.

Habitat and area survey

Included here are single habitat surveys aimed at determining the biodiversity resource in England, and also combined habitat and species survey covering discrete geographical areas.

Habitat management

A significant proportion of our statutory and advisory work is aimed at the management of habitats. Even in the case of rare species, habitat management is often the conservation action required. A range of studies are programmed to explore the science of current conservation management practice. Further work is being developed to promote new management methods using innovative machinery and novel management approaches.

Hydrology

Water and wetlands are a highly managed and heavily exploited resource in England. We need to respond to a wide range of policy proposals and to site related casework. Understanding hydrology is also a key element of planning and delivering habitat restoration, particularly in flood plains where new methods of management are being explored as a response to flooding in recent years.

Impact studies

Commercial and other exploitation of natural systems, for example fisheries and peat extraction, often has complex impacts upon ecosystems. Research is therefore required into the ways in which some of the interactions operate, so that opportunities for amelioration can be identified.

Invasive exotic species

This is a new topic. Invasive exotic plants, animals and micro-organisms, particularly diseases, have had a profound effect upon both terrestrial and aquatic systems in England. Our current focus is upon methods for the control and eradication of species which are already established. This may require follow up on selected species where currently there are no effective control strategies. In 2001 DETR initiated a review of current policy, and this may identify other research needs.

Landscape ecology and restoration

Effective biodiversity conservation requires action at a range of geographical scales. Traditional conservation practice has placed heavy emphasis upon site based activity. Our research aims to understand how larger scale processes such as dispersal and colonisation influence biodiversity, and also to integrate these and other findings into tangible plans for action at a landscape scale.

Natural heritage information systems

Collecting information about habitat, species and earth heritage features is a very large part of our science activity. Included here are projects which invest in the information systems required to effectively store and utilise the information collected.

Public access

This is a new topic. In 2001 English Nature acquired a responsibility to advise Government on the ecological impacts of access rights to open land under the Countryside and Rights of Way Act. This is an issue which we have had limited past advisory responsibilities, and research is required to ensure that our advice is based on sound current knowledge.

Remote sensing and telemetry

As the area covered by protected sites increases, we need to develop more efficient ways of monitoring changes to them. Aerial photography continues to be an important technique, and part of our research spend covers the acquisition of such photography. Increasingly, we are investigating the potential for remote sensing methodologies to make significant contributions to survey and monitoring work.

Risk assessment

This is a new topic. The way in which science is used in public policy and similar contexts has become increasingly controversial in recent years. The outcome has been a recognition that often science cannot predict precisely, but that it can identify the risks and uncertainties

associated with a series of options. In contexts such as pesticide use, health, and industrial plant design and management, a more structured approach to such risk analysis has developed, and we are investigating ways in which these might be adapted to natural heritage conservation.

Site survey

In order to inform site specific conservation, we need up to date information on the distribution and abundance of species and habitats within individual sites. Work in this area is largely carried out through the commissioning of external specialists, and reflects local need.

Socio-economics

Understanding the way in which social and economic factors drive impacts on natural heritage conservation is a valuable adjunct to natural science studies, not least in the formulation of advice on economics and other policy instruments.

Species recovery projects

The English Nature Species Recovery Programme aims to secure a future for England's most threatened wildlife. The mechanism for delivering these goals is ultimately through planned practical action. However, survey, ecological research, monitoring and the development of new conservation methods, such as genetic analysis and breeding in captivity to boost native populations, form a significant part of the work.

Species survey

Not all species of interest to English Nature and others are covered by the species recovery programme, and a range of additional species research is included in our programme.

It should be noted that many of our projects aim to meet a range of objectives and therefore this classification should only be seen as indicative of the main objective of a given project.

The information for each entry is laid out as follows:

1. The project title is listed.
2. The contractor is named immediately beneath the project title. Work may be done in-house, via an independent consultant, or via an external organisation.
3. The project end date is given.
4. The cost of the work during 2001/2002 is shown.
5. The English Nature officer responsible for managing the project is identified, followed by the team managing the work.

We have also included within this document listings of publications produced by English Nature staff since April 2000.

I would like to thank all those organisations and individuals who have contributed to English Nature's research effort, as contractors, consultants, research managers and partners. Your efforts in maintaining action for nature through sound scientific information are valued greatly. Thank you all for your help.

A handwritten signature in black ink, appearing to read 'K L Duff'. The signature is stylized with a large 'K' and 'L' and a 'Duff' that has a long, sweeping tail.

Dr K L Duff
Chief Scientist

November 2001

Address of English Nature's Specialist Support Teams

English Nature
Northminster House
Peterborough PE1 1UA
Telephone (switchboard): (01733) 455000

Direct Telephone Lines

Environmental Impacts	(01733) 455203
Lowlands	(01733) 455260
Maritime	(01733) 455226
Strategic Development & Reporting (SDRT)	(01733) 455118
Species Recovery Programme	(01733) 455266
Uplands	(01733) 455260

Addresses of English Nature's Local Area Teams

Bedfordshire, Cambridgeshire and Northamptonshire	Ham Lane House Ham Lane Nene Park Orton Waterville Peterborough PE2 5UR Telephone: (01733) 405850
Cornwall and Isles of Scilly	Trevint House Strangways Villas Truro Cornwall TR1 2PA Telephone: (01872) 265710
Cumbria	Juniper House Murley Moss Oxenholme Road Kendal Cumbria LA9 7RL Telephone: (01539) 792800

Devon	Level 2 Renslade House Bonhay Road Exeter Devon EX4 3AW Telephone: (01392) 889770
Dorset	Slepe Farm Arne Wareham Dorset BH20 5BN Telephone: (01929) 557450
East Midlands	The Maltings Wharf Road Grantham Lincolnshire NG31 6BH Telephone: (01476) 584800
Essex, Hertfordshire and London	Harbour House Hythe Quay Colchester Essex CO2 8JF Telephone: (01206) 796666
Hampshire & Isle of Wight	1 Southampton Road Lyndhurst Hampshire SO43 7BU Telephone: (02380) 283944
Humber to Pennines	Bullring House Northgate Wakefield West Yorkshire WF1 1HD Telephone: (01924) 334500
Kent	The Countryside Management Centre Coldharbour Farm Wye Ashford Kent TN25 5DB Telephone: (01233) 812525
Norfolk	60 Bracondale Norwich Norfolk NR1 2BE Telephone: (01603) 598400

North and East Yorkshire	Genesis Building 1 Science Park University Road Heslington York YO1 5DQ Telephone: (01904) 435500
Northumbria	Stocksfield Hall Stocksfield Northumberland NE43 7TN Telephone: (01661) 845500
North West	Pier House, First Floor Wallgate Wigan Lancs WN3 4AL Telephone: (01942) 820342
Peak District and Derbyshire	Manor Barn Over Haddon Bakewell Derbyshire DE45 1JE Telephone: (01629) 816640
Somerset and Avon	Roughmoor Bishop's Hull Taunton Somerset TA1 5AA Telephone: (01823) 283211
Suffolk	Regent House 110 Northgate Street Bury St Edmunds Suffolk IP33 1HP Telephone: (01284) 762218
Sussex and Surrey	Phoenix House 32-33 North Street Lewes East Sussex BN7 2PH Telephone: (01273) 476595
Thames and Chilterns	Foxhold House Thornford Road Crookham Common Thatcham Berkshire RG19 8EL Telephone: (01635) 268881

Three Counties

Bronsil House
Eastnor
Nr Ledbury
Herefordshire HR8 1EP
Telephone: (01531) 638500

West Midlands

Attingham Park
Shrewsbury
Shropshire SY4 4TW
Telephone: (01743) 282000

Wiltshire

Prince Maurice Court
Hambleton Avenue
Devizes
Wiltshire SN10 2RT
Telephone: (01380) 726344

2. Project groups

2.1 Climate change

Climate change, project 1

UKCIP
M Harley, EIT

September, 2001
£ 2,000

Publication of MONARCH 1 outputs : technical report and summary document.

Climate change, project 2

ECI, Oxford
M Harley, EIT

April, 2002
£ 20,000

Phase 1, MONARCH 2 : enhancement of MONARCH 1 methodology for site-level application.

Climate change, project 3

Tyndall Centre, University of East Anglia
M Harley, EIT

October, 2004
£ 3,000

Collaborative research studentship with Tyndall Centre investigating carbon sinks and nature conservation management.

Marine biodiversity and climate change (MarClim) for Britain and Ireland

Various statutory bodies and NGOs
D Laffoley, Maritime

March, 2006
£ 37,500

Four year programme to establish a single Britain and Ireland focus to start to improve the understanding of the relationship between climate change and marine biodiversity. The project will address the implications of responses to climate change to inform policies and provide a framework for the conservation, management, protection and utilisation of marine biota.

2.2 Coastal processes

Coastal flood and defence project appraisal

To be decided
J Burney, EIT

February, 2002
£ 4,000

Research on how to integrate BAP targets into a cost-effectiveness model for flood and coastal defence appraisal.

Estuary morphology

To be decided
T Collins, Maritime

March, 2002
£ 25,000

Second stage of research work on how physical processes shape estuary morphology.

Geomorphological advice at Dibden Bay, Solent

Newcastle University
T Collins, Maritime

March, 2002
£ 30,000

Technical advice on coastal processes and ways of defining favourable conservation status. Prepare technical proof of evidence in time for submission to the inspector before the enquiry commences.

Geomorphological advice Ribble Estuary

Newcastle University
T Collins, Maritime

August, 2001
£ 25,000

Assess the effects on the integrity of the site with respect to displacement of wetland birds due to indirect changes in estuarine morphology. To provide this technical information for submission as evidence for the Public Inquiry.

Geomorphological casework advice contract

Newcastle University
T Collins, Maritime

March, 2002
£ 25,000

Technical advice on coastal processes and ways of defining favourable conservation status for whole estuary systems. This work is necessary to provide advice for Regulation 33 packages for Special Areas of Conservation and Special Protection Areas under the UK Habitat Regulations.

North Sea sediment study

Great Yarmouth Borough Council
C Pater, Maritime

March, 2002
£ 25,000

Investigate sand and shingle movement within the southern North Sea, from Flamborough head to North Foreland (Kent). The study will improve understanding of sediment movements to assist planning for a sustainable coastline, and to aid the assessment of aggregate dredging licence applications.

Sustainable management of the Holderness coast, East Yorkshire

Local Authority
D Leach, North & East Yorks

March, 2002
£ 7,000

The second phase of a project to assess and make recommendations regarding a sustainable future for the changing coast of Holderness, East Yorkshire.

Teesmouth sedimentation

To be decided
M Leakey, Northumbria

March, 2002
£ 15,000

Production of a report, following a desk study, to enhance understanding of the patterns of sediment change within the Tees estuary, 1970-2000, predict the future patterns of sediment change and outline and evaluate options for sediment mitigation.

2.3 Diffuse pollution

Analysis of kestrel tissue samples for rodenticides

Centre for Ecology and Hydrology
I Carter, Uplands

September, 2001
£ 5,600

Determine whether kestrels in England are regularly exposed to second-generation rodenticides and obtain an initial indication of the extent of contamination.

Nutrient enrichment at Hell Kettles SSSI

University of Durham
S Hedley, Northumbria

March, 2002
£ 2,400

Third year of funding a PhD looking at ecological change within a calcareous spring-fed pond. Specific aspects this year are chemical analysis of sediments, including chemical and nuclear magnetic resonance studies of phosphorus fractions.

Nutrient enrichment of sand dunes

To be decided
M Harley, EIT

March, 2002
£ 10,000

Assess the potential impact on sand dune ecosystems of atmospheric nitrogen deposition. English Nature contribution to Countryside Council for Wales-led project.

Review of timber treatments

WRc
A Burn, EIT

January, 2002
£ 5,000

English Nature contribution to an Environment Agency-led review of the impacts and risks of timber treatments and other surface biocides, to wildlife. To provide guidance on safe biocide treatments to use in nature conservation situations.

River Wye and River Lugg farm nutrient management plans

FWAG, Herefordshire
M Wilkinson, Three Counties

March, 2003
£ 5,900

The second year of a three year project to test and deliver farm nutrient budget advice to farms fringing or connecting with cSAC and SSSI rivers. To enable targeted nutrient reductions for the benefit of river water quality and farm business efficiency.

Water quality overview document

To be decided
A Burn, EIT

February, 2002
£ 15,000

Update the report *Guidelines for managing water quality impacts within UK European Marine Sites* to include new technical information and appropriate revisions to policy and case study examples.

2.4 Earth Heritage

Dorset coast management

Dorset County Council
J Larwood, EIT

March, 2003
£ 5,000

To pilot working with a local authority on developing the science base of policy and practice to ensure the sustainable management of important geological features.

Geological site management

To be decided
C Prosser, EIT

March, 2003
£ 25,000

Undertake a thorough review of current geological site management practice used to deliver conservation. To then produce new guidance on good practice, using case studies looked at in the review.

Geological sites and BAP

To be decided February, 2002
C Prosser, EIT £ 6,000

Explore the potential contribution of sites managed for geological conservation, to BAP and biological conservation.

Minerals

Symonds Group Ltd October, 2001
N Bennett, EIT £ 8,000

An examination of the work that the minerals extraction industry currently does and potentially could make to geological conservation.

2.5 Habitat and area survey

Acid grassland survey of Normanby Park, Scunthorpe

Bullen Consultants September, 2001
B Davies, Humber to Pennines £ 2,000

Provide English Nature with detailed survey information of the acid grassland communities at Normanby Hall and at other sites in the Scunthorpe area. The area is a priority for acid grassland re-recreation.

Biodiversity audit of Humberhead peatlands

To be decided March, 2002
A Graham-Smith, Humber to Pennines £ 10,000

Build on previous literature review by collating further information and by focusing on information management.

Botanical survey of magnesian limestone grasslands

To be decided February, 2002
T Kohler, Humber to Pennines £ 4,000

Provide English Nature with detailed survey information of the magnesian limestone grassland in the team area.

Chasmophytic vegetation study

To be decided
A Crowle, Uplands

March, 2004
To be decided

Inter agency project with Countryside Council for Wales and Scottish Natural Heritage, aimed at identifying and assessing important Chasmophytic vegetation communities in the uplands.

Cheshire lowland wood pasture

To be decided
R Duff, West Midlands

To be decided
£ 3,000

Determine extent, character and quality of wood pastures within Cheshire by means of survey; to develop management guidance for owners and managers; to review operations; and to follow national guidelines and best practice.

Condition assessment of Natura 2000 sites in Humber to Pennines team

To be decided
B Fleming, Humber to Pennines

March, 2004
£ 10,000

Provide a condition assessment for all Natura 2000 sites in the team area.

Condition assessment of Natura 2000 sites, North and East Yorkshire

In-house
P Welsh, North & East Yorks

March, 2002
£ 18,000

Baseline assessment and mapping of the habitat condition of qualifying habitats in moorland and limestone cSACs in North and East Yorkshire.

Development of a minimum intervention reserve series

Various
K Kirby, Lowlands

March, 2003
£ 10,000

A series of minimum intervention woodland reserves are being established across the country. Baseline monitoring work/repeats of earlier studies are being carried out to support this concept.

Ecology, hydrology and nutrient dynamics of flood-plain meadows in England

Dr D Gowing, The Open University
R Jefferson, Lowlands

December, 2001
£ 25,000

Review literature relating to the ecology, hydrology and nutrient dynamics of flood plain meadows (principally NVC type MG4) in England and produce a summary report and recommendations including future information and research requirements.

Exmoor heaths cSAC and NVC survey

To be decided
F Ulf-Hansen, Somerset

December, 2001
£ 3,000

NVC survey of moorland and bracken change mapping (also using aerial photography), to guide future management.

Gloucestershire Biodiversity Action Plan implementation

Gloucestershire Biodiversity Partnership
C Pagendam, Three Counties

March, 2002
£ 5,000

Continue support for a Gloucestershire LBAP Coordinator post, to enable delivery of habitat and species targets through the Gloucestershire LBAP partnership. To develop the provisional county parkland inventory (funded 00/01) into targeted conservation action towards the national Parklands and Wood Pasture HAP.

Ground truthing survey of potential grassland and scrub expansion sites in the Chilterns

To be decided
M Edworthy, Thames & Chilterns

October, 2001
£ 2,500

Verify predicted land use changes produced by the Chilterns GIS project.

Hampshire habitat survey

Hampshire Wildlife Trust
R Wright, Hants & Isle of Wight

December, 2003
£ 6,250

Refining the understanding of the county's biological resource to assist the forward planning and development control processes, guide the identification of Sites of Importance for Nature Conservation, and enable LPAs to undertake their reviews of wildlife as required in Planning Policy Guidance 9.

Herefordshire Biodiversity Action Plan implementation

Herefordshire Nature Trust
H Stace, Three Counties

March, 2002
£ 5,000

Continue support for a local BAP coordinator post, to enable delivery of habitat and species targets through the Herefordshire LBAP partnership.

Herefordshire millennium map

Herefordshire Nature Trust
H Stace, Three Counties

March, 2004
£ 5,000

Undertake a Phase 1 habitat survey of Herefordshire's Natural Areas and analyse the abundance and distribution of habitat types.

Humber to Pennines NVC survey

Bullen Consultants
R Warren, Humber to Pennines

March, 2002
£ 25,000

Provide complete NVC survey data for all SSSIs in the Humber to Pennines team area.

Lake District High Fells NVC survey

To be decided
I Soane, Cumbria

March, 2004
£ 2,000

The start date for this project has been deferred to 2002 as Foot & Mouth is preventing field survey being carried out. However, £2,000 is being used this FY for preparatory work. This project will produce NVC vegetation maps for the Lake District High Fells cSAC, which will be used as an essential component of condition assessment monitoring of conservation objectives.

Lowland grassland sample survey

To be decided
H Robertson, Lowlands

March, 2004
£ 10,000

Assess the changing status of the lowland grassland resource in England including a final report detailing the results of the sample survey. This project will enable English Nature to report on BAP action plan targets for lowland grassland habitats. Work in 2001/02 is concentrating on the production of sample site information dossiers in preparation for field survey in 2002/03 (postponed in 2001/02 due to Foot and Mouth Disease restrictions).

Lyme Bay reefs project

Devon Wildlife Trust
J Crix, Devon

March, 2003
£ 5,000

Carry out extensive surveys of three reef systems within Lyme Bay, that is Beer Home Ground, Lanes Ground and Sawtooth Ledges.

Macrophytes Lake District

University of Hertfordshire
A Giacomelli, EIT

January, 2003
£ 2,500

PhD on the aquatic macrophytes of selected Cumbrian lakes comparing macrophyte distribution and abundance with physical and chemical lake data.

Maritime cliff and slope inventory

Southampton University
S Rees, Maritime

July, 2001
£ 2,350

Completion of database for Phase 1 of inventory.

Maritime cliff and slope inventory

To be decided
S Rees, Maritime

March, 2003
£ 57,000

Carry out surveys of cliff habitats to contribute to overall knowledge of the resource and contribute to implementation of the Maritime Cliff and Slope HAP. Phase 2 of project.

Mediterranean Temporary Ponds in the UK, their status, ecology and management

University of Plymouth, Department of Biological Sciences
J Clitherow, Cornwall

March, 2002
£ 7,000

Documentation of the extent and location of Mediterranean Temporary Ponds and associated still water habitats on the Lizard and New Forest heaths.

North Kent marshes sea wall survey

To be decided
L Solly, Kent

March, 2002
£ 5,000

Identify distribution and management requirements of nationally rare or scarce plants on sea walls within North Kent marshes Ramsar sites.

Peak District grasslands

To be decided
J Stewart, Peak District & Derbys

March, 2002
£ 12,500

Comprehensive grassland survey across the White Peak.

Prioritisation of acid grassland survey on the Coversands

ESL Ltd
B Davies, Humber to Pennines

September, 2001
£ 2,000

Provide a prioritised list of sites for survey. Priority to be based upon suitability of site for acid grassland and heathland re-creation.

Review of acid grasslands in Derbyshire

Derbyshire Wildlife Trust
R Catchpole, Peak District & Derbys

March, 2003
£ 3,000

Ongoing survey of acid grassland sites in Derbyshire. Contribution to work led by Wildlife Trusts.

River gravels

To be decided
J Barrett, Northumbria

February, 2002
£ 5,000

Provide baseline information to assess the long-term viability of calaminarian grasslands. Predict whether the calaminarian grassland interest of the SSSIs and cSAC can be maintained, and if so, what management is required to do so.

River Shep geomorphological survey

L Kendrick, Friends of River Shep
D Radley, Beds, Cambs & Northants

November, 2001
£ 3,000

Provision of information to be used for river enhancement for benefit of riverine species, including white clawed crayfish and water vole.

Shingle vegetation survey, Benacre-Easton

To be decided
A Burrows, Suffolk

September, 2001
£ 1,000

Establish baseline data for distribution of annual and perennial vegetation of shingle banks on the Benacre to Easton Bavents SSSI.

Soft cliff vegetation survey, South & East coasts of Isle of Wight

R Collingridge
A Gordon, Hants & Isle of Wight

August, 2001
£ 3,000

Produce phase 1 habitat maps and identify and relate NVC communities to maps for soft cliff vegetation between St Catherine's point to Ventnor; Luccombe chines to Shanklin chine on Isle of Wight. To update information on soft cliff vegetation between Hanover point to St Catherine's point and redefine SSSI boundary.

SSSI woodland survey pilot

Ecotech, Shrewsbury
M July, Three Counties

August, 2001
£ 1,000

To field trial and evaluate an SSSI woodland survey method, which combines the requirements of the Forestry Commission Native Woodland Plans pilot, (through the Woodland Grant Scheme), with English Nature's need for baseline information for SSSI woodland condition assessment.

Survey of Cheshire meres and mosses

Whild Associates
C Walker, West Midlands

December, 2001
£ 11,000

Produce vegetation maps, using the NVC classification, and descriptions for a number of sites. Rare species to be located and mapped.

Thanet coast, distribution of reef and sea cave communities

To be decided
D Pound, Kent

January, 2002
£ 15,000

Set a baseline against which the favourable condition of the habitats can be monitored.

Three Counties Grassland survey

Wildworks/Ecotech
J Bingham, Three Counties

March, 2002
£ 2,000

Survey SSSI and NNR grassland sites as baselines for condition assessment. Also to assess potentially threatened grassland sites which are not SSSIs.

Upland habitat inventory

To be decided
A Crowle, Uplands

March, 2003
To be decided

To establish the extent and distribution of upland habitats in England.

White Peak lead rakes survey

Peak District National Park Authority
J Stewart, Peak District & Derbys

March, 2002
£ 1,390

Contribution to project to survey White Peak lead rake habitats (project managed by Peak District National Park).

Worcestershire Biodiversity Action Plan implementation

Worcestershire County Council
P Holmes, Three Counties

August, 2002
£ 10,000

Continuation of a three year Local BAP coordinator post, to enable delivery of habitat and species targets through the Worcestershire LBAP partnership.

***Zostera* awareness**

To be decided
V Copley, Dorset

March, 2002
£ 1,000

Increase understanding on the distribution and quality of eel-grass *Zostera* species in coastal Dorset.

2.6 Habitat management

Beach management manual

To be decided
S Rees, Maritime

March, 2002
£ 5,000

Contribution to Tidy Britain Group project to develop a beach management manual. This will help to implement some of the actions in the Sand Dune Habitat Action Plan (HAP).

Calcareous grassland restoration, Year 3

Torbay Coast and Countryside Trust
D Appleton, Devon

March, 2002
£ 5,000

The third year of a 3-year project aimed at restoring Torbay's prime calcareous and coastal grassland.

Changes in biodiversity in British woodland 1971-2002

To be decided
K Kirby, Lowlands

May, 2003
£ 10,000

Surveys carried out in woodland across Great Britain in 1971 will be repeated and changes in flora, woodland structure and soils assessed. The changes will be related to known trends in woodland management or environment.

Clarepool moss, peat survey

Nicol Jones & Lomax
C Hogarth, West Midlands

March, 2002
£ 2,000

Survey to establish and map the extent of the peat body, to provide a basis for management of the site under a S15 management agreement.

Coastal grazing marsh

University of East Anglia
M Drake, Lowlands

December, 2003
£ 1,375

This PhD study will investigate the influence of management on invertebrate populations and avian usage of coastal grazing marshes.

Contribution to the Hampshire grazing project

Hampshire County Council
B Proctor, Hants & Isle of Wight

October, 2001
£ 16,000

To link landowners with graziers to restore grazing.

Cotswold grasslands

The Cotswolds AONB Partnership
P Hackman, Three Counties

March, 2004
£ 5,000

Contribute to an HLF-supported programme of conservation management of neglected lowland calcareous grasslands, linked to the development of sustainable grazing management regimes, and local livestock marketing initiatives in support of farm business diversification.

Cotswold Water Park Biodiversity Action Plan implementation

Cotswold Water Park Society
H Ward, Three Counties

March, 2003
£ 11,000

Continue to support the implementation of the Cotswold Water Park Biodiversity Action Plan in Gloucestershire and Wiltshire.

Deer Initiative

England Deer Initiative
K Kirby, Lowlands

March, 2004
£ 15,000

The biggest threat to the biodiversity of many lowland woods is the increase in deer populations. This contribution to the work of the Deer Initiative will improve our understanding of the impact of deer and their control.

Ecological assessment of *Hippophae rhamnoides* (Sea Buckthorn)

Dr T Dargie
C Weaver, East Midlands

December, 2001
£ 6,644

Conduct an ecological appraisal of sea buckthorn (including botanical and invertebrate interest) and make recommendations for management of this habitat on Saltfleetby -

Theddlethorpe Dunes and Gibraltar Point cSAC. *Hippophae rhamnoides* scrub is a Habitats Directive Annex I habitat.

Ecologically sustainable grazing management of lowland semi-natural grassland

IGER
R Jefferson, Lowlands

October, 2004
£ 10,000

Identify optimum grazing management for semi-natural grassland based on sward structural criteria, to enhance/maintain its ecological value and to quantify the impact of this management on the growth of commercial beef cattle. The project will provide information that will underpin grazing management practices on protected sites and agri-environment scheme agreements.

Eco-surfaces and regeneration

EcoSchemes Ltd
M Frith, EIT

February, 2002
£ 7,200

Review the potential for supporting biodiversity on raised artificial surfaces (roofs/walls etc) within urban regeneration and new development schemes.

Environmentally sustainable grazing systems in the uplands

To be decided
M Rebane, Uplands

March, 2007
£ 10,000

Joint research with DEFRA and Countryside Council for Wales to determine environmentally sustainable and economically viable grazing systems for the restoration and maintenance of upland dwarf shrub heath in England and Wales.

Exmoor lichen management survey

V Giavarini
F Ulf-Hansen, Somerset

December, 2001
£ 3,000

Survey woodlands for lichens and produce guidelines for future management.

Fenns and Whixall Moss, vegetation change

K Horton
J Daniels, West Midlands

March, 2002
£ 1,000

An assessment of the cover of key species, to measure the extent of recolonisation and vegetation change, in the light of reclamation management. To assess site condition and future work requirements.

Guidance on the use of herbicides in nature conservation sites

ADAS, Drayton
A Burn, EIT

April, 2002
£ 29,000

Produce a comprehensive guidance manual for English Nature staff on the efficacy and environmental risks of herbicides available for management of vegetation in nature conservation sites.

Herefordshire commons

Herefordshire Council and Herefordshire Nature Trust
H Stace, Three Counties

March, 2004
£ 10,000

Promote the sustainable management of selected Herefordshire commons for conservation, recreation and farming, including delivery of UK and local BAP targets.

Impacts of grazing on lowland heathland in the UK

Dr J Bullock, CEH Dorset
I Alonso, Lowlands

July, 2001
£ 11,104

The aim of the project is to produce a report assessing current knowledge, and existing experimental work, to determine gaps in knowledge (species, stock rates, geographical variation, etc) and recommendations for future research. The contract should also look at methodologies for investigating the gaps in knowledge.

Information review for wetland HAPs

Penny Anderson Associates
R Meade, EIT

June, 2001
£ 4,600

Review research on the restoration and creation of fens, raised bogs, grazing marshes and reedbeds.

Isle of Wight Biodiversity Action Plan project

M Chatfield, Isle of Wight Biodiversity Action Plan Steering
Group
A Gordon, Hants & Isle of Wight

December, 2003
£ 5,000

Produce habitat action plans for vegetated sea cliffs, grazing topic report for grassland, heathland, wetlands and wood pasture, and Calcareous grassland local HAP.

Leaflet on woody debris in streams

To be decided
M Drake, Lowlands

December, 2002
£ 2,750

A leaflet will describe the importance of woody debris in streams for proper functioning of the system for a wide range of animals, including BAP invertebrates and fish.

Lullington Heath, effects of grazing on sward composition

Dr E John, University of Sussex
M Emery, Sussex & Surrey

April, 2002
£ 1,000

On-going monitoring of higher plants in permanent quadrats to detect changes in chalk heath community composition in the presence of sheep grazing. Replicate sets of quadrats with exclosures and controls. Three surveys completed. Analysis and report expected on completion of fourth survey (pending relaxation of Foot and Mouth restrictions).

Marches Woodland Initiative

Ecotech, Shrewsbury
M July, Three Counties

August, 2001
£ 1,000

Preparation of an English Nature research report of a desk-based "Review of environmental outcomes of the Marches Woodland Initiative". This is an audit of the nature and landscape conservation benefits deriving from a sample of approved Woodland Grant Schemes within the Marches Objective 5b project area.

Moorland management, Long Mynd

National Trust
A Hearle, West Midlands

March, 2002
£ 3,000

Monitoring and assessment of impacts - including: heather condition and consumption survey; condition of flushes and dwarf-shrub heath; recovery of heather cuts and burns; stocking levels and supplementary feeding practice; and review of management plans for heather and bracken.

Nutrient monitoring in hay meadows

FRCA
A Hurst, Peak District & Derbys

November, 2001
£ 2,000

Analysis of nutrient levels in hay from species-rich hay meadows in Peak District, to gather data underpinning advice on grazing to owners and occupiers.

Ombrotrophic peat

University of Plymouth, Department of Biological Sciences
R Meade, EIT

February, 2002
£ 2,300

Developing a method for assessing health of a restored bog surface by looking at its testate Amoebae.

Pond restoration project by Ponds Conservation Trust

Ponds Conservation Trust
M Drake, Lowlands

December, 2002
£ 10,000

Produce The Ponds Book. Implement the first stage of the Ponds for People project in the North-east of England.

Portland arable strips

Portland Bird Observatory
J Stobart, Dorset

March, 2002
£ 2,000

Botanical and ornithological monitoring of results of re-establishing arable cultivation on Portland, Dorset.

Regenerating raised bog

University of Sheffield
R Meade, EIT

March, 2005
£ 9,700

Optimise rewetting technique for cut-over raised bog.

Research on habitat management for BAP-listed saproxylic invertebrates

CABI Bioscience (Dr O Cheeseman)
R Key, Lowlands

December, 2002
£ 20,000

Research the conservation needs of the nine species of saproxylic beetle listed under the UK BAP, and also to research more generally the conservation implications of interactions between invertebrates, fungi and abiotic factors in veteran trees in Lowland parkland and Wood-pasture.

Restoration of replanted ancient woodland sites

Forest Enterprise & Woodland Trust
K Kirby, Lowlands

March, 2003
£ 15,000

Thousands of hectares of replanted ancient woodland are being restored to native broadleaves across the country to meet HAP targets. These contributions will assist novel elements of particular programmes including wood-pasture restoration and a better understanding of the basic science underpinning restoration.

SAFFIE - Sustainable Arable Farming for an Improved Environment

To be decided
A Burn, EIT

October, 2006
£ 10,000

Contribution to a multi-funded project under the DEFRA LINK collaborative research programme. The project will evaluate practical techniques for addressing the impact of arable agriculture (including pesticide use) on farmland biodiversity.

The impact of heather burning regimes

To be decided
A Crowle, Uplands

March, 2005
To be decided

A PhD studentship to assess the impacts of burning of heather upon the soils and associated plant and invertebrate communities.

The impact of organic manures on semi-natural grasslands

Consortium led by Institute of Grassland and Environmental Research
R Jefferson, Lowlands

March, 2005
£ 10,000

Determine optimum rates of farmyard manure application to semi-natural meadows through the conduct of experimental research in the field. To test whether equivalent nutrient supply by inorganic fertilisers and other slow-release fertilisers can substitute for farmyard manure. The results of this work will be used to develop best conservation management practices.

2.7 Hydrology

Effects of drain maintenance on raised bog habitat and agricultural land within Bowness Common SSSI

J Labadz, Nottingham-Trent University
M Robinson, Cumbria

March, 2002
£ 4,000

Assessment of the effects different management options for peripheral drains around Bowness Common SSSI will have on the water budget of the raised bog and the surrounding agricultural land. This is a joint project with the Environment Agency (EA), and is intended to be extended to the other cSAC raised bogs in Cumbria.

Fenns and Whixall Moss, discharge flow measurement

To be decided
J Daniels, West Midlands

To be decided
£ 1,000

Measure water flows leaving the main exits from the site, to provide data to counter local concerns about English Nature's restoration management of the moss. Install v-notch weirs and chart recorders at five locations on main outflows and carry out chart analysis.

Hydrological advice contract

S Bennett
R Meade, EIT

March, 2004
£ 8,000

Provide hydrological advice to local teams as the need arises.

Lower Derwent Valley, assessment of levels and vegetation communities

To be decided
S Woolven, North & East Yorks

March, 2003
£ 17,500

Topographic and levelling survey of the main floodplain related to the occurrence of vegetation communities.

Moorland grip blocking trials

To be decided
S Barrett, Peak District & Derbys

March, 2002
£ 5,000

Demonstrate the benefits of blocking drainage grips on shooting moors in restoring moorland habitats and species.

Pool of Bryher, Isles of Scilly

To be decided
J Clitherow, Cornwall

March, 2002
£ 5,000

Investigation into the hydrology flora and fauna of the Pool of Bryher, Isles of Scilly.

Swanpool hydrology

To be decided
B Tonkin, Cornwall

March, 2002
£ 6,000

Hydrological survey of Swanpool, Cornwall.

Wedholme Flow drainage

Nottingham Trent University
R Meade, EIT

September, 2001
£ 5,000

Estimate the degree of drainage caused by peat cutting at Wedholme Flow.

2.8 Impact studies

Asulam effects on non target plants

Manchester University
A Burn, EIT

September, 2002
£ 1,500

Contribute towards a PhD which extends the work funded by EN/SNH on asulam risks to non-target plants, and examines further risks and impacts in semi-field situations

Bran sands, Teesside

INCA (Tees Estuary Management Plan)
M Leakey, Northumbria

March, 2002
£ 3,000

Promotion and facilitation of a sustainable approach to the exploitation of sea-angling bait at Bran sands (South Gare and Coatham Sands SSSI, Teesmouth and Cleveland Coast Special Protection Area (SPA)). This involves close liaison with a range of organisations, discussion of potential mechanisms and production of a final report.

Control of predation on moorland fringe birds

To be decided
S Barrett, Peak District & Derbys

March, 2002
£ 15,000

Continuing study of predator control impacts on bird numbers on in-bye land at edge of South Pennine Moors SPA.

Elterwater sediment study

To be decided
A Stewart, Cumbria

January, 2002
£ 2,500

Repeat surface sediment sampling in Elterwater SSSI for total phosphorus analysis. This project will allow some indication of the rate of recovery of Elterwater from eutrophication after the removal of a sewage treatment discharge from the site. Results will inform the next stages of restoration of Elterwater to favourable condition.

Impact of agri-chemicals on lower plants

To be decided
P Lambley and Carl Borges, Norfolk

October, 2004
£ 5,000

Undertake literature review prior to investigating the impact of agri-chemicals on lower plants.

Investigation into the extent of bait collection and its impacts on features of conservation interest for birds within the Solent and Poole Bay Natural Area

S Fowler, Nature Conservation Bureau Ltd
A Gordon, Hants & Isle of Wight

June, 2001
£ 2,734

Investigations into the extent of bait collection and its impact on features of conservation interest for birds, within the Solent and Poole Bay Natural Area.

Lindisfarne refuge project

Dr S Percival
S Coles, Northumbria

March, 2003
£ 6,566

Assess the effect of the refuge on the wintering waterbirds at Lindisfarne NNR.

Microwave radiation and wildlife

Centre for Ecology and Hydrology
A Burn, EIT

November, 2001
£ 5,907

Carry out a brief literature review and assess the evidence for significant risk to wildlife arising from radio frequency radiation from telecommunication systems.

No Take Zones

To be decided
P Knapman, Maritime

March, 2002
£ 10,000

Establish No Take Zones and monitor their effect.

Organic loading on birds

British Trust for Ornithology
A Burn, EIT

September, 2001
£ 17,000

Outline a modelling approach to enable an assessment of effects of organic and nutrient loadings on SPA populations.

Red kites and rodenticides

Leicester University
A Burn, EIT

March, 2003
£ 2,000

Contribute towards a study of the behavioural responses of rodents during baiting operations using rodenticides, and risks of secondary poisoning of predators and scavengers such as Red kite.

Research on the direct and indirect effects of human activity on Turnstones

K Webb
D Pound, Kent

December, 2003
£ 6,000

Assess the effects of different human activity on the survival rate of wintering Turnstone and provide information to guide management.

Risks of sheep dip disposal on terrestrial wildlife

Durham University
A Burn, EIT

April, 2003
£ 1,750

Contribution towards a continuation of Durham Universities study for EA/EN on the terrestrial impact of sheep dip disposal. To improve current guidance to statutory authorities on the possible impacts on special features of SSSIs and SPAs.

River Wensum nutrient removal

Environment Agency
D Withrington, EIT

March, 2002
£ 12,000

PhD to assess the impact of nutrient removal on the River Wensum, Norfolk.

Shell fisheries

Northumberland County Council
S Coles, Northumbria

March, 2004
£ 3,000

To help Northumberland Sea Fisheries Committee deliver their duties, under the Berwickshire and North Northumberland Coast European Marine Site management scheme, to monitor fishing activity.

Transport advice contract

Transport Research Laboratory
D Markham, EIT

March, 2002
£ 15,000

Provide specialist advice and guidance to English Nature nationally and locally on transport issues, specifically consultations arising out of regional transport strategies, local transport plans and multi-modal studies.

2.9 Invasive exotic species

Alien crayfish control

University of Portsmouth
D Fraser, EIT

December, 2001
£ 12,200

Evaluate the potential of using pheromones as a means of modifying alien crayfish behaviour, in order to enhance removal efficiency as part of control and eradication efforts.

Bullfrog eradication

Froglife
B Banks, Kent

February, 2002
£ 6,000

Survey of bullfrogs on the Kent and Sussex border. Coordination of bullfrog eradication.

Problem exotic species management

Professor R Marris, University of Liverpool
J Hopkins, SDRT

October, 2002
£ 38,730

Compilation of current knowledge concerning the management and control of those introduced species which cause damage to biodiversity in Britain. A methodology for decision making about management will be developed, and species specific data found will be published on web pages.

2.10 Landscape ecology and restoration

Central rivers project

Partnership project
J Blowers, West Midlands

March, 2003
£ 2,000

Create a habitat network throughout the study area, targeting key BAP habitats and species. Regenerate the river corridor and improve its quality in accordance with Staffordshire landscape guidelines. Provide opportunities for diversification of farm incomes.

Collation and analysis of woodland data

Forest Research
K Kirby, Lowlands

June, 2002
£ 10,000

Combination of the ancient woodland inventory and the Forestry Commission's Inventory of Woodland and Trees with other data-sets is enabling us to address a wide range of questions about the distribution, abundance, composition and condition of England's woods. This is a continuation of a previous contract, taking forward ideas identified from the earlier work.

North Norfolk heaths re-creation plan

To be decided
A Millar, Norfolk

March, 2002
£ 10,000

Natural Area-wide heath re-creation strategy aimed at progressing heath BAP targets in North Norfolk, as part of UK BAP. To be used to influence targeting of effort and resources.

North Pennines woodland enhancement - Phase 1

V Howard
S Hedley, Northumbria

October, 2001
£ 9,600

Form conservation objectives for a series of neglected SSSI woodlands and take forward in Site Management Statements with owners and occupiers. Identify opportunities for urgent management work (Phase 2 of project) or longer-term opportunities within Woodland Grant Scheme (WGS).

Predicting the response of farmland bird populations to agricultural change

BTO and RSPB
P Grice, Uplands

March, 2002
£ 10,000

Joint project with DEFRA to review all recent research findings on farmland birds and predict impacts of different agriculture policies on the 'farmland bird index'.

Research on monitoring methodology and the effects of habitat fragmentation and isolation on saproxylic invertebrates

University of Birmingham (Dr A Pullin)
R Key, Lowlands

December, 2002
£ 13,930

PhD studentship to develop non-invasive survey methodology for the monitoring of saproxylic invertebrates listed in BAP, and to use the methodology to examine the effects of barriers to dispersal, on the viability of populations of saproxylic invertebrates in Lowland Parkland and Wood-pasture.

Severn vales whole farm plans

Worcestershire and Gloucestershire FWAG
P Holmes, Three Counties

March, 2005
£ 6,000

Target the production of Whole Farm Plans at land holdings affecting the target zones for the Severn and Avon vales wetland restoration project.

South Norfolk commons biodiversity project - feasibility study

Norfolk Wildlife Services Ltd
A Millar, Norfolk

March, 2002
£ 10,000

Costed feasibility study into an over-arching project, aimed at achieving landscape-scale habitat restoration and re-creation on common land in South Norfolk. Delivery of grassland and fen HAPs, and Species BAPs.

Suffolk Coast and Heaths Lifescapes Vision

Suffolk Biological Records Centre
R Rafe, Suffolk

March, 2002
£ 20,000

Development and storage of a Geographic Information System (GIS) based landscape scale biodiversity vision for the Suffolk coast and heaths.

Support to Suffolk Biodiversity Action Plan Coordinator

Suffolk County Council
R Rafe, Suffolk

March, 2002
£ 3,000

Financial support to Suffolk Biodiversity Action Plan Coordinator, employed on behalf of the Suffolk Biodiversity Partnership.

The conservation value of White (*Nardus* grassland) moorland

To be decided
A Crowle, Uplands

March, 2005
To be decided

A PhD studentship to develop guidance on the restoration of "White Moor", and to make an assessment of the conservation value of this habitat.

The Green Wye vision

To be decided
M Wilkinson, Three Counties

March, 2004
£ 11,000

National Lifescape pilot project for the River Wye floodplain, linking zonal vision map to protect and enhance the river which is both an SSSI and SAC with BAP habitat creation and local socio-economic enhancement, through farm diversification etc.

Waders of wet meadows

RSPB
G Walker, West Midlands

March, 2003
£ 6,000

Achieve restoration of wet grasslands in Cheshire, Staffordshire and Shropshire. Target habitats for lapwings and other wading birds.

Woolhope Dome Prime Biodiversity Area project

Herefordshire Nature Trust
C Pagendam, Three Counties

March, 2002
£ 10,000

Develop the options outlined in the Scoping Study prepared in 2000. Identify options for habitat management and restoration of semi-natural grasslands, woodlands and traditional orchards within the Woolhope Dome Prime Biodiversity Area (PBA).

2.11 Natural Heritage Information Systems

Atlas 2000, a new atlas of the flora of Britain and Ireland

Botanical Society of the British Isles
S Leach, Lowlands

May, 2002
£ 2,000

Produce a CD Rom of the Atlas.

Black Country Biodiversity Action Plan

Walsall MBC
H Griffiths, West Midlands

March, 2002
£ 3,000

Prepare a local Biodiversity Action Plan, to support production of a LBAP document, by coordinating the activities of local habitat and species groups.

BogBASE

University of Sheffield
R Meade, EIT

November, 2002
£ 5,300

Compile a database (Bog BASE) of archaeological and palaeoecological information about lowland raised bogs, especially "archaic" peat deposits.

Conservation objectives and site assessment for invertebrates on SSSI

A Godfrey
M Drake, Lowlands

December, 2001
£ 1,685

The work will offer guidance in the form of condition assessment tables relating to individual species, assemblages and habitats.

Dark Peak site unitisation

To be decided
J Stewart, Peak District & Derbys

March, 2002
£ 8,000

Field and desk study of previous habitat surveys, to reassess monitoring units across the Dark Peak Natural Area.

Dune habitat inventory

To be decided
S Rees, Maritime

March, 2002
£ 15,000

Contribution to South West England BAP pilot inventory, to focus on dune resource.

England inventory for the Wetland Habitat Action Plan : pilot project

T Dargie
M Drake, Lowlands

December, 2001
£ 8,700

Compile metadata on the occurrence of lowland fens, lowland raised bogs and reedbeds in England, both within and outside of SSSIs. Create a GIS database of habitat maps, incorporating existing digitised data where available. Link associated information about each polygon, and write a manual for users of the database.

ERCCIOS Service Level Agreement

Environmental Records Centre
J Clitherow, Cornwall

March, 2002
£ 10,000

Contribution towards the running costs and recorder support for the Environmental Records Centre for Cornwall and the Isles of Scilly.

Evaluation of European marine site designation in the Atlantic Biogeographic Zone

S Toy
R Morris, Maritime

November, 2001
£ 10,000

Investigate boundary selection for SACs containing the Annex 1 habitat Estuaries in neighbouring states of the Atlantic Biogeographic Zone. It will endeavour to establish the scientific rationale for boundary selection and whether such rationale is consistently applied.

GIS base for Oxford city biodiversity data

EXEGESIS SDM Ltd
M Edworthy, Thames & Chilterns

January, 2002
£ 10,340

Construct a GIS system, linked to Recorder 2000, that allows species and habitat data to be more easily accessible to, and interpreted by, city strategic/development planners and conservation staff.

Herefordshire Biological Record Centre

Herefordshire Council
D Heaver, Three Counties

March, 2003
£ 10,000

Progress a business plan funded in 00/01 for a local record centre, to provide information through the National Biodiversity Network.

Local Biological Records Centre

To be decided
J Barrett, Northumbria

March, 2002
£ 19,100

Undertake a feasibility study to assess the potential and practicality of establishing a North East Environmental Records Centre. Enter data on to Recorder 2000 and convert existing data into similar format for entry onto database.

Lowland parkland and wood-pasture information system

Environmental Information Management Ltd (Dr C Copp) and
Blue Bag Ltd (Drs G Boobyer and D Tantram)
R Key, Lowlands

December, 2002
£ 6,000

Prove a web based, single point of access information source to the biological, landscape, historical and cultural conservation values of lowland parkland and wood pasture sites in Britain. This is being done as an adjunct to the National Biodiversity Network (NBN) and connects NBN data with external, non-biological information sources for the first time.

MarLIN database and web access to data on marine biodiversity and sensitivity

MarLIN, Marine Biological Association of the UK
D Laffoley, Maritime

March, 2002
£ 30,000

Provide world wide web access to information on marine habitats and species, in order to support implementation of the Habitats Directive and Biodiversity Action Plans in the seas around the UK.

MarMedia

MarLIN, Marine Biological Association of the UK
D Laffoley, Maritime

March, 2002
£ 30,000

Develop an "internet gateway" to a spatial metadata catalogue on the marine environment. Data for point sources and spatial coverage will be provided using a map interface.

North and East Yorkshire Data Centre

North and East Yorkshire Data Centre
L Jones-Walters, North & East Yorks

March, 2002
£ 5,000

This project continues to support the development of the centre and its staff. The intention is to achieve a stand-alone data centre for habitat and species information, that can provide up-to-date information to a group of core bodies, and to other enquirers and researchers.

Old growth stands in the UK - definition and scoping for inventory purposes

To be decided
K Kirby, Lowlands

March, 2002
£ 5,000

The term old-growth has a distinct meaning in North American and continental literature, but is starting to be used in a different way in the UK to mean collections of old trees. If we are not to have considerable confusion created we need to establish a clear definition for old growth in the UK and determine if it needs to be inventoried separately to Wood-pastures and other ancient woodland.

Options assessments for local Biological Records Centres

To be decided
M Edworthy, Thames & Chilterns

December, 2001
£ 14,100

Establish development priorities for local Record Centres in Thames and Chilterns in view of user needs, NBN compatibility and good practice elsewhere in the UK. The project will suggest a number of development options based on these priorities.

Rare and scarce plants database

To be decided
I Slater, Cumbria

March, 2002
£ 2,000

A partnership project to produce a database of rare, scarce and locally uncommon plants in Cumbria. This will aid the achievement of national and local BAP targets, to inform statutory species casework, and to assist partners in coming to informed decisions in their work.

Review of supply and demand in the UK ports industry

MDS transmodal through RSPB
R Morris, Maritime

September, 2001
£ 11,750

Re-visit the dataset compiled to inform "Nature Conservation and Ports: supply and demand in the UK ports industry". Using subsequent years data, to evaluate the accuracy of supply/demand predictions and re-assess predictions to 2015.

SSSI conservation objectives

Humphries Rowell Associates
D Withrington, EIT

April, 2001
£ 3,100

Produce a list of species and habitats present in wetland SSSIs, and to rationalise these into groupings and compare with monitoring units already used. Produce a draft reporting form for condition assessment of wetland SSSIs.

Support to Suffolk Biological Records Centre

Suffolk County Council
R Rafe, Suffolk

March, 2002
£ 8,000

Management and development of the County Local Records Centre.

Warwickshire Local Biodiversity Action Plan

Warwickshire Wildlife Trust
J Irving, West Midlands

March, 2002
£ 3,000

To support the production of a Local Biodiversity Action Plan, by coordinating the activities of local habitat and species groups.

West Midlands Regional Biodiversity Forum

To be decided
M July, Three Counties

March, 2002
£ 2,000

Contribute to a work programme to address priorities for biodiversity information needs at the regional level. To prepare a publication on the regions' biodiversity and the Forum's work.

White Peak cave unitisation

Professor J Gunn, Huddersfield University
B LeBas, Peak District & Derbys

March, 2002
£ 5,000

Study of cave systems in White Peak to identify suitable monitoring strategy and recording units.

Worcestershire Biological Record Centre

To be decided
D Heaver, Three Counties

March, 2003
£ 10,000

Progress a business plan funded in 00/01 for a local record centre, to provide information through the National Biodiversity Network (NBN).

2.12 Public access

Woodlark recreational disturbance

University of East Anglia
A Brown, Uplands

January, 2004
£ 9,000

Determine the population level impacts of recreational activity on breeding Woodlarks.

2.13 Remote sensing and telemetry

Development of remote sensing techniques for monitoring

Environment Agency
E Murray, SDRT

March, 2003
£ 22,500

Assess the use of CASI and LIDAR remote sensing tools on habitat discrimination on five different coastal habitat types . To assess the accuracy and repeatability of these techniques, and their potential in long-term monitoring.

2.14 Risk assessment

Anthelmintics and wildlife

To be decided
A Burn, EIT

August, 2001
To be decided

Develop a modelling approach towards understanding the risks of anthelmintics use to wildlife in various nature conservation situations.

Effects of organic enrichment on coastal and estuarine bird populations

BTO led consortium
A Burn, EIT

September, 2001
£ 15,000

Carry out a literature review and complete a preliminary modelling exercise to evaluate the risk to coastal and estuarine bird populations from cleaning up coastal sewage discharges under the Urban Waste Water and Bathing Waters Directives.

Environmental risk assessment in the work of English Nature

To be decided
A Burn, EIT

April, 2002
£ 30,000

Develop a series of projects, at various scales, to take forward the understanding of environmental risk assessment within English Nature and to improve environmental risk assessment methodology. Will involve activities such as seminars, support for expert workshops.

Gene stacking in herbicide-tolerant oilseed rape (canola): lessons from the North American experience

J Orson, Morley Research Centre
A Hope, Lowlands

October, 2001
£ 8,000

Provide detailed evidence from North America of the incidence and spread of oilseed rape volunteers containing two or more stacked HT genes, and to document changes in herbicide use associated with management of stacked-gene volunteers. To draw some general conclusions regarding the likelihood that transgene stacking in GM herbicide tolerant crops

could cause problems for wildlife conservation in the UK, and predicted speeds/densities at which this could occur, based on the North American experience.

Natura 2000 guidelines for managing water quality impacts within UK European Marine Sites

To be decided
A Burn, EIT

March, 2002
To be decided

To update the existing 'water quality' guidance for assessing risk and impacts of polluting activities on marine Nature 2000 sites.

Nutrient enrichment in the near shore

University of Hull
J Burt, EIT

August, 2001
£ 7,600

Examine the range of models available for understanding the impact of nutrients in coastal and estuarine environments, and to help develop a risk assessment framework.

Taxonomic distinctiveness project

Plymouth Marine Laboratory
J Burt, EIT

December, 2001
£ 5,000

English Nature joint project with JNCC. To assess the validity of taxonomic distinctness and distinctiveness approaches to assessing biodiversity for nature conservation purposes.

2.15 Site survey

Ashton Court survey and monitoring

Scott Wilson Ecology
K Pollock, Somerset

March, 2002
£ 1,500

Assessment of habitat value of veteran trees for Saprophytic invertebrate fauna.

Chatsworth tree survey

To be decided
R Catchpole, Peak District & Derbys

March, 2002
£ 2,000

An aerial survey of veteran trees in Chatsworth Park SSSI to study age ranges, identify gaps and contribute to future management.

Houghton Regis marl lakes, Sundon chalk quarry, Totternhoe chalk quarry

N Hodgetts
S Hamley, Beds, Cambs & Northants

October, 2001
£ 1,700

Detailed Phase 2 survey of three SSSIs in Bedfordshire and three adjacent county wildlife sites. Survey to provide information on current botanical interest to inform decisions on future management.

Invertebrate survey, Castle Eden Dene NNR

To be decided
S Cooter, Northumbria

December, 2001
£ 5,000

Review the important invertebrates of Castle Eden Dene NNR and set up management priorities and prescriptions for them.

Isle of Wight SSSI management project

Collingridge Ecological Associates, Hampshire Wildlife Trust and
Miss J L Barneveld
A Gordon, Hants & Isle of Wight

March, 2002
£ 29,867

Carry out condition assessment of SSSI units on the Isle of Wight, produce Site Management Statements and, where appropriate, seek positive management to bring a site into favourable condition.

Lichen survey of Brignall Banks SSSI

Dr O Gilbert
S Hedley, Northumbria

March, 2002
£ 1,500

Identify lichen interest and compare to an earlier baseline prior to recommending management works in this woodland.

Lucombe & Shanklin Chines invertebrate survey - Isle of Wight

S Colenutt and A Wright
A Gordon, Hants & Isle of Wight

September, 2001
£ 2,400

Carry out invertebrate survey between Lucombe Chine to Shanklin Chine for SSSI notification purposes.

North Somerset (Burlledge Hill) grassland survey

Avon Wildlife Trust
S Lee, Somerset

November, 2001
£ 5,000

NVC survey of pSSSI areas of neutral grassland (previously poorly known) in North Somerset.

Northumberland rocky shores

To be decided
S Coles, Northumbria

March, 2002
£ 3,000

Digitise aerial photographs onto GIS to then be able to map extent of intertidal reefs that form part of the Berwickshire and North Northumberland Coast European Marine Site.

NVC mapping, Sunbiggin Tarn

P G Kelly
S Webb, Cumbria

March, 2002
£ 2,300

Obtain accurate and up to date NVC survey of Sunbiggin Tarn and surrounding area. This information will be used to judge plans or projects submitted on the SAC, and to inform our judgements on the condition of this area.

NVC survey of Chippenham Fen NNR

Ecology Land and People
N Sibbett, Suffolk

September, 2001
£ 4,150

Describe, both quantitatively and qualitatively, the plant communities within Chippenham Fen National Nature Reserve.

NVC survey of North Lincolnshire coast

Dr T Dargie
C Weaver, East Midlands

December, 2001
£ 5,961

Conduct National Vegetation Classification survey of dune and saltmarsh from Saltfleet to northern county boundary, thus completing NVC map and data for Lincolnshire, part of Humber coast, flats and marshes SPA.

Ouse washes, assessment of vegetation change

Ecological Surveys
J Graham, Beds, Cambs & Northants

December, 2001
£ 7,000

Survey to gather evidence of vegetation changes on Ouse washes SAC between 1997 and 2001. Investigate link between any changes and physical/chemical measurements (hydrochemistry, soil phosphorus and water levels). Repeat survey of three established transects and eight new transects.

Phase II habitat survey, Broadmoor - Bagshot SSSI/pSPA

To be decided
S Brocklehurst, Thames & Chilterns

January, 2002
£ 3,000

Obtain adequate baseline data to ensure the site is managed appropriately to maintain favourable conservation status of its European features.

Poole harbour flora

Dorset Environmental Records Centre
J Stobart, Dorset

April, 2003
£ 6,000

Produce the first comprehensive flora for Poole Harbour, map upper, middle and lower saltmarsh habitats and undertake site unit recording on 40 Site Management Units.

River Blythe resurvey

To be decided
J Irving, West Midlands

To be decided
£ 2,000

Undertake a survey of the aquatic macrophytes of the River Blythe SSSI, by repeating the survey lengths from the 1997 survey. Provide English Nature with information on the nature and distribution of river types along the watercourse, and the changes since the previous surveys.

Saltmarsh monitoring, Wash and Essex estuaries

Posford Duvivier
E Murray, SDRT

December, 2002
£ 51,000

Map the extent and community composition of saltmarsh on the Wash, North Norfolk and Essex estuaries SACs. Identify fixed monitoring transects for repeat survey, as part of the validation monitoring network trials.

South Pennine Moors in-bye survey

RSPB
P Duncan, Humber to Pennines

March, 2004
£ 4,400

Heritage Lottery Fund funded review of the nature conservation value on in-bye land around the South Pennine Moors SPA, to inform future management priorities.

The Solent European Marine Sites Project Officer

Hampshire County Council
C McMullon, Hants & Isle of Wight

September, 2002
£ 3,000

Contribute towards the funding of a Project Officer, to facilitate and service the Management and Advisory Group, and to compile the Management Scheme for the Solent European Marine Site.

Tintagel NVC

CTNC Ltd
D Hazlehurst, Cornwall

March, 2003
£ 5,000

Carry out an NVC survey of the Tintagel-Marsland Clovelly cSAC.

Widdybank Fell vegetation digitisation

To be decided
S Hedley, Northumbria

March, 2002
£ 10,000

Digitise existing vegetation data to set quantitative conservation objectives for large upland SAC.

Woodland SSSI surveys

Various
M July, Three Counties

March, 2002
£ 6,000

Undertake Phase 2 woodland surveys for selected SSSIs to inform site management plans, where required as a condition of entry to the Woodland Grant Scheme within the Native Woodland Plans pilot.

2.16 Socio economics

A literature review of the Livestock Sector : production, environmental impacts and policy development

Asken Ltd
S Hooper, Uplands

August, 2001
£ 7,379

Literature review to determine environmental impacts and policy developments associated with the livestock sector across Europe. Background paper for European Livestock Seminar November 2001 to be hosted by Interagency Land Use Policy Group.

Agricultural economics

To be decided February, 2002
J Burney, EIT £ 5,000

Research on current agricultural economics issues, possibly in partnership with MAFF.

Beacon business

W S Atkins October, 2001
D Withrington, EIT £ 15,000

Investigate how we would put forward a water company as a 'beacon business'.

Black Mountains Foot & Mouth impact assessment

Herefordshire FWAG September, 2001
H Stace, Three Counties £ 1,500

Assess the extent and nature of changes in livestock businesses affected by the Foot and Mouth outbreak, and their potential impact on the nature conservation objectives for the Black Mountains SSSI. To recommend a strategy to regenerate the local economy and secure environmental outcomes.

Business and biodiversity

Earthwatch June, 2001
H Sisman, EIT £ 5,000

Business and biodiversity guide for the BiE Index of Corporate Environmental Engagement.

Classification of land to reflect the environmental value and difficult farming conditions of upland grazing land

Cranfield University April, 2002
S Hooper, Uplands £ 6,885

Identification of indicators to create new classification for upland farmland to improve the delivery of the objectives of the Hill Farm Allowance Scheme. Joint project with DEFRA. (Phase 2 field testing delayed because of Foot & Mouth disease).

Contribution to Forest Friendly Farming project, Phase 2

New Forest Committee December, 2002
R Ekins, Hants & Isle of Wight £ 5,000

Identify ways in which agriculture and small woodland management in the New Forest can be made more environmentally and socio-economically sustainable, and to develop practical initiatives which support the project's aims in conjunction with the local community.

Dean biodiversity project

Gloucestershire Wildlife Management
C Pagendam, Three Counties

March, 2002
£ 3,000

Support an integrated rural development project in the Forest of Dean in partnership with the Countryside Agency and Forest of Dean District Council

Economic incentives to reduce diffuse source nutrient pollution

To be decided
J Burney, EIT

February, 2002
£ 4,000

Research on the potential for a nutrient pollution tax or alternative incentive mechanism.

Environmental capital

Countryside Agency
H Sisman, EIT

March, 2002
£ 5,000

Maintenance of Quality of Life Capital website and regional training events for staff of English Heritage, English Nature, Countryside Agency and Environment Agency.

Fisheries advice contracts

D Symes & S Lockwood
P Knapman, Maritime

March, 2002
£ 15,000

Provide technical advice on fisheries related matters to English Nature's fisheries liaison officer.

Habitat accounts

Centre for Ecology and Hydrology
J Burney, EIT

February, 2002
£ 12,000

Complete an analysis of Countryside Survey 2000 data to construct environmental accounts for habitats.

Herefordshire rivers Foot & Mouth impact

Herefordshire FWAG
M Wilkinson, Three Counties

September, 2001
£ 1,050

Obtain an interim understanding of the impact of Foot and Mouth on livestock farmers adjoining the River Wye cSAC and their likely business responses. To promote advice on opportunities for integrating agri-environment schemes into farm business planning where herds have been culled, including new woodland planting.

Peak District Environmental Quality Mark

To be decided
J Stewart, Peak District & Derbys

March, 2004
£ 5,000

Incorporation of nature conservation and other environmental resources into quality standard for farm products.

Planning advice contract

David Tyldesley Associates
J Price, EIT

August, 2001
£ 15,000

Provide a call-off contract for advice on town and country planning matters and related environmental legislation, including assistance and evidence at planning inquiries.

Public participation

University College London
J Burney, EIT

June, 2002
£ 4,000

PhD CASE studentship partnership studying the potential application of participation techniques in the context of English Nature's work.

Recreation and tourism

To be decided
D Markham, EIT

March, 2002
£ 10,000

Review our engagement with the tourism sector and produce further guidance on the contribution of biodiversity and earth heritage to sustainable tourism.

Severn and Avon vales wetland restoration project

Environment Agency
P Holmes, Three Counties

July, 2001
£ 15,000

Year 2 of a 3 year post which seeks to access funding for implementation of the Severn and Avon vales wetland strategy. To enable the achievement of BAP targets through partnership and cross-sectoral working.

Shropshire farm study

Shropshire County Council
S Hooper, Uplands

September, 2001
£ 2,000

Survey of farms and land management practices in Shropshire, linked to environmental outcomes.

Social functions of nature

To be decided February, 2002
J Burney, EIT £ 3,000

Production contract to enable publication of in-house research paper.

Socio-economic profile of the Chilterns Natural Area

To be decided January, 2002
M Edworthy, Thames & Chilterns £ 15,000

Link social and economic drivers for change in the Chilterns, to policies and strategies that will achieve our biodiversity targets. The costs of achieving BAP targets using a variety of existing mechanisms will be balanced against biodiversity's contribution to the area.

Sustainable development framework

ERM June, 2001
H Sisman, EIT £ 15,000

Preparation of sustainable development toolkit for local teams.

Water Framework Directive research

Institute of European Environmental Policy May, 2001
D Withrington, EIT £ 15,000

Produce a guide to the Water Framework Directive for conservation agencies.

Wildlife Trust seminar

To be decided March, 2002
M Frith, EIT £ 1,000

Organise seminar in association with the Wildlife Trusts to promote new urban biodiversity conservation opportunities. This will help to guide the development of English Nature's urban strategy.

Wise use of floodplains

RSPB April, 2002
J Burney & C Doarks, EIT £ 2,500

Contribution to RSPB Life project on development of appraisal methods in relation to the implementation of the Water Framework Directive.

2.17 Species recovery projects

Action for Plants

Plantlife
J Sutcliffe and I Taylor, Lowlands

April, 2002
£121,128

Enhance the capacity of a VCO to deliver BAP targets, by employing staff and supporting their work programmes.

Arable plants

To be decided
R Porley, Lowlands

April, 2002
£ 5,000

Establish baseline monitoring scheme for arable plants.

Bumblebee conservation, Romney Marsh

Romney Marsh Countryside Project
B Banks, Kent

February, 2002
£ 3,000

Promotion of arable field margin buffer strips to promote bumblebee conservation on Romney Marsh.

Conservation genetics

Royal Botanic Gardens, Kew
I Taylor, Cumbria

April, 2003
£ 10,000

Determine answers to genetic questions of relevance to nature conservation, with regard to BAP priority plant species.

Coordination of BAP ground beetle projects in England

To be decided
R Key, Lowlands

December, 2003
£ 12,000

Overview project to progress BAP targets of all (32) BAP-listed ground beetles in England, including funds for sub-contracting work on individual species or groups of species.

Creeping marshwort *Apium repens*

Oxon Rare Plants Group
J Sutcliffe, Lowlands

April, 2004
£ 1,000

Survey and monitor Creeping marshwort *Apium repens* and liaise with relevant interested groups and individuals.

Determine the hydrological requirements of *Vertigo moulinsiana* in fens and river valleys

P Tattersfield
M Drake, Lowlands
December, 2002
£ 8,925

Establish the hydrological requirement of this Whorl snail to refine conservation objectives at four cSACs.

Ecological research on *Hericium* species and *Buglossoporus pulvinus* fungi

Cardiff University
C Borges, Essex, Herts & London
September, 2003
£ 6,000

Investigate the ecology, including ex situ cultivation and translocation techniques, for species of the genus *Hericium*, including *H. ennaceum*, *H. coralloides* and *H. cirrhatum*. Also, where possible, make similar investigations for the Oak Polypore (*Buglossoporus pulvinus*).

Ex-situ bryophyte project

Royal Botanic Gardens, Kew
R Porley, Lowlands
April, 2003
£ 17,000

Develop ex-situ methods for the conservation of bryophytes.

Eyebright *Euphrasia* species

Edinburgh University
I Taylor, Cumbria
April, 2003
£ 3,000

Conduct research into five eyebright species.

Fen orchid *Liparis loeselii*

Norfolk Wildlife Trust
C Doarks, Lowlands
April, 2004
£ 3,000

Conduct monitoring of re-introduction sites.

Fen Raft Spider monitoring

To be decided
M Drake, Lowlands
December, 2003
£ 3,600

Develop a monitoring method for the spider at Pevensey Levels to measure changes in its status in response to habitat restoration under the HAP. Continue monitoring of the spider at pools at Redgrave & Lopham Fen NNR and measure any changes in response to fen restoration and borehole closure.

Fen violet *Viola persicifolia*

Oxon Rare Plants Group
J Sutcliffe, Lowlands

April, 2004
£ 1,000

Monitor sites.

Fenland rare plants

Bugle Ecological Services
J Sutcliffe, Lowlands

December, 2003
£ 8,930

Monitor sites supporting Ribbon-leaved water plantain *Alisma gramineum*, Fen ragwort *Senecio paludosus* and Fen violet *Viola persicifolia*, with a view to establishing self sustaining populations.

Fumitory *Fumaria* species

To be decided
I Taylor, Cumbria

April, 2002
£ 4,000

Undertake literature review and survey.

Greater water-parsnip *Sium latifolium* survey on Romney Marsh

Romney Marsh Countryside Project
B Banks, Kent

December, 2001
£ 1,500

Survey of Greater water-parsnip *Sium latifolium* on Romney Marsh. Monitoring of populations recorded last year.

Ground beetle *Panagaeus crux-major* SRP survey and monitoring

Entotax Ltd
R Key, Lowlands

December, 2002
£ 2,300

Survey for additional populations of the species and research its ecological requirements. Project to be subsumed into the *Coordination of BAP ground beetle projects in England project* in future.

House sparrow

RSPB and De Montford University
P Grice, Uplands

March, 2004
£ 1,000

Investigate the causes of the decline in urban and suburban House sparrow populations.

Ladybird spider *Eresus niger* project

Dr P Merret, I Hughes, Mrs A Binding, A Williams
R Key, Lowlands

December, 2003
£ 3,815

Survey for additional sites for the ladybird spider *Eresus niger*, monitor the population of the only known colony, and undertake captive rearing and establishment trials for the species pending a re-introduction project. Also, to undertake large and small scale habitat management for the species at its only known site.

Lady's slipper orchid *Cypripedium calceolus*

To be decided
I Taylor, Cumbria

April, 2002
£ 1,000

Undertake literature review and experimental work on associated Mycorrhiza.

Lichens : survey of BAP species

To be decided
P Lambley, Norfolk

April, 2002
£ 4,000

Re-survey BAP lichens.

Lichens : survey of metaliferous sites

To be decided
P Lambley, Norfolk

April, 2004
£ 5,000

Undertake survey of metaliferous mine sites for BAP lichens.

Marsh saxifrage *Saxifraga hirculus*

P Kelly
I Taylor, Cumbria

April, 2002
£ 3,000

Complete research report on Marsh saxifrage *Saxifraga hirculus* status.

Marsh saxifrage *Saxifraga hirculus*

To be decided
I Taylor, Cumbria

April, 2002
£ 3,000

Undertake small sites project.

Millennium seedbank

Royal Botanic Gardens, Wakehurst Place
I Taylor, Cumbria

April, 2003
£ 15,000

Supplement the British seed bank with a biogeographically based sampling of UK plants.

Native oyster *Ostrea edulis*

To be decided
P Knapman, Maritime

March, 2002
£ 18,000

Fulfil actions in UK Action Plan.

Oblong woodsia *Woodsia ilvensis*

Royal Botanic Gardens, Edinburgh
R Cooke, SDRT

April, 2002
£ 2,000

Monitor re-introduced populations of the plant.

Orchid micropropagation

Royal Botanic Gardens, Kew
I Taylor, Cumbria

April, 2002
£ 5,000

Aid the conservation of rare orchids by the use of micropropagation techniques.

Pollination and biodiversity

Dr J Memmott, University of Bristol
D Sheppard, Lowlands

March, 2004
£ 14,000

Determine the pollination requirements of the UK BAP priority plants and the pollen/nectar requirements of the UK BAP priority invertebrates

Population diversity and speciation in *Hydnellum* and *Phellodon* species of fungus

Berkbeck College
C Borges, Essex, Herts & London

September, 2002
£ 6,000

Investigate the genetic diversity of *Hydnellum scrobiculatum/concrescens* and *Phellodon confluens* at and between distinct sites in SE England and Scotland, and to use molecular diversity measures to suggest the relative roles of mycelial growth and fruiting body production in population maintenance and spread. Speciation within a part of this group and other fungi will be investigated by comparison of specific DNA sequences.

Pre-recovery projects

Various
D Sheppard, Lowlands

March, 2002
£ 15,000

The project encompasses a series of small studies on species for which additional data are required or for which conservation concerns have been raised.

Prickly sedge *Carex muricata*

Lancaster University
I Taylor, Cumbria

April, 2002
£ 2,000

Conduct enclosure experiments.

Reservoir bryophyte survey

To be decided
R Porley, Lowlands

December, 2004
£ 3,000

Evaluate the current status of four BAP bryophytes in England, and identify those reservoirs that support populations of these plants. Assess any correlation between drought years and incidence of records.

Restoration of the Golden hoverfly *Callicera spinolae* in East Anglia

G Rotheray
M Drake, Lowlands

December, 2003
£ 2,600

Research the autecology of the Golden hoverfly *Callicera spinolae* by searching for larvae and establishing their habitat requirements. Test the efficacy of artificial breeding chambers with a view to increasing the number of occupied sites. Raise awareness of the issue of tree rot-hole fauna using *C. spinolae* as a flagship species.

Review of invertebrate interest of base-rich seepage fen

To be decided
M Drake, Lowlands

December, 2002
£ 2,500

Collate information on the value of base-rich seepages for invertebrates, including Habitats Directive listed and BAP species, as a precursor to a survey of the invertebrates of this habitat.

Roseate tern Species Recovery Programme for the Isles of Scilly

Channel Seabirds Research Group
J Clitherow, Cornwall

March, 2003
£ 3,000

Encourage the return of breeding Roseate tern to the Isles of Scilly.

Shad genetics project

Environment Agency
D Heaver, Three Counties

January, 2004
£ 6,000

To investigate the genetic structure of British shad populations.

Site assessment for southern damselfly *Coenagrion mercuriale*

L Kerry and D Boyce
M Drake, Lowlands

December, 2002
£ 2,500

Information on the habitat conditions at all Southern damselfly *Coenagrion mercuriale* sites in England and Wales will be collated. Improved advice for habitat management will be the main outcome.

Southern damselfly *Coenagrion mercuriale* on chalk streams

University of Liverpool
M Drake, Lowlands

December, 2004
£ 6,000

The PhD will investigate the autecology of Southern damselfly *Coenagrion mercuriale* at its chalk stream and fen sites in England and Wales. The information will allow better habitat management and setting of conservation objectives at the SACs.

Species Recovery Programme

Various
D Stone, SDRT

To be decided
£1,155,000

English Nature's Species Recovery Programme is intended to ensure a future for England's most threatened wildlife. A significant proportion of this work is therefore directed towards practical conservation actions. However, the development of a sound science base for this work has been important to the success of the programme, and this forms a significant part of the costs of the work. Our level of knowledge of the individual species varies considerably and depending upon the species the scientific work required to support species recovery routinely includes survey, monitoring and autecological studies, particularly studies of how habitat features influence species viability. Less routinely, work planned to investigate species genetics, particularly using DNA analysis, breeding in captivity to supplement critically endangered animal populations, storage of higher and lower plant materials to avoid risks of complete extinction in the wild and also veterinary and chemical studies so that causes of mortality can be interpreted.

Stinking hawk's-beard, *Crepis foetida*, Species Recovery Programme

Dr B Ferry
B Banks, Kent

December, 2001
£ 4,100

Survey of habitats used by Stinking hawk's-beard *Crepis foetida* in Belgium and Holland, with search for similar habitats in the UK. Monitoring of established UK shingle populations.

Studies on *Vertigo* species in England

I Killeen
M Drake, Lowlands

December, 2001
£ 1,500

Four projects on each of the four HSD *Vertigo* species; devising a monitoring process and undertaking a baseline round for *V. moulinsiana*, *V. angustior* and *V. geyeri*; mapping the distribution of *V. angustior* and *V. geyeri* on key SACs; surveying the extent of *V. genesii* in the Pennines.

Survey and ecology of Lesser water beetle *Hydrochara caraboides* in Somerset

D Boyce
M Jones and M Drake, Lowlands

December, 2003
£ 4,000

Survey Lesser silver water beetle *Hydrochara caraboides* at sites in Somerset, establish the life history and habitat requirements of larvae and adults, and produce management advice to increase the population size.

Survey and monitoring of Fiery clearwing *Bembecia chrysidiformis* moth

T Rouse
B Banks, Kent

December, 2001
£ 2,792

Monitoring of known populations. Survey for potential new sites in Suffolk, Essex, Kent and East Sussex.

Tassel stonewort survey, Otmoor SSSI, Oxon

Pond Action, c/o Oxford Brookes University
W Fojt, Thames & Chilterns

July, 2001
£ 1,175

To discover the extent, location and habitat characteristics of the species. To discover the impact of management on the species.

Threatened bryophytes database

BRC
R Porley, Lowlands

April, 2004
£ 10,000

Maintain and develop a database of rare and threatened bryophytes.

Tree sparrow and Reed bunting

RSPB
P Grice, Uplands

March, 2004
£ 20,000

Conduct autecological studies to investigate the causes of the declines in tree sparrow and reed bunting populations on England farmland, and identify appropriate remedial actions.

Turtle dove

Game Conservancy Trust
P Grice, Uplands

March, 2002
£ 15,000

As follow-up to recently completed 3-year autecological study, analyse long-term data sets held by BTO (Common Bird Census, Nest Record Cards) and bird observatories.

Waxcap fungi in England

S Evans & M Rotherow
C Borges, Essex, Herts & London

September, 2001
£ 4,100

Collate site information, prioritise sites, literature search and provide ecological information known, and recommend future research requirements.

Wye and Dean bat cave plans

Gloucestershire Caving Access Group
C Pagendam, Three Counties

May, 2001
£ 3,000

Identify and implement integrated management of recreation and conservation in SSSI and cSAC caves and bat sites.

2.18 Species survey

Atlas 2000, a new atlas of the flora of Britain and Ireland

Botanical Society of the British Isles
S Leach, Lowlands

May, 2002
£ 10,000

Produce a sister document to the atlas, relating the current plant distribution to their policy implications.

Avon Gorge survey

Partnership project with local authority
S Lee, Somerset

March, 2004
£ 3,000

Ongoing botanical survey of important characteristic species of limestone cliffs and rock outcrops within Avon Gorge SSSI.

Bechstein bats

To be decided
M Heath, Dorset

To be decided
£ 2,000

Establish status of Bechstein bats at a number of sites close to a SAC.

Bird count analysis for Southampton Water

Hampshire County Council
C McMullon, Hants & Isle of Wight

March, 2003
£ 1,070

Contribute towards the collection and analysis of bird population data for Southampton Water and Dibden Reclaim, particularly for Wigeon.

Bittern monitoring programme

RSPB
A Brown, Uplands

March, 2002
£ 26,000

Determine number of booming Bitterns, number of nesting females and fledging success of bitterns in England. To determine habitat selection by radio-tagged birds.

Black bog ant *Formica candida*

A Abbott
A Nicholson, Dorset

March, 2002
£ 1,000

Ascertain the status and distribution of the Black bog ant *Formica candida*.

Black grouse

Game Conservancy Trust
J Barrett, Northumbria

March, 2005
£ 11,000

Provide a co-ordinated approach to management to meet the targets set out in the black grouse Species Action Plan (SAP) for England.

Bryophytes monitoring

To be decided
B Tonkin, Cornwall

March, 2003
£ 6,000

Continuous monitoring of Bryophytes.

Conservation ecology of beetles of the genus *Cryptocephalus*

Leeds University (Dr S G Compton)
R Key, Lowlands

December, 2002
£ 9,210

Undertake applied autecological research (including subcontracted survey for populations on which to work) on the ecology of five species of 'pot' beetle in the genus *Cryptocephalus*, to inform habitat management and translocation initiatives under the BAP.

Conservation ecology of the Tansy beetle *Chrysolina graminis*

University of York (Dr G Oxford)
R Key, Lowlands

December, 2002
£ 1,000

Ascertain the population dynamics and conservation ecology of the tansy beetle *Chrysolina graminis* in the Vale of York, and to inform the Environment Agency in their river management for sites with this species.

Cryptogam officer

Natural History Museum
R Mitchell, R Porley, P Lambley, Lowlands

September, 2003
£ 25,000

Support and coordinate the work of the lower plant societies, with a view to delivery of BAP targets.

Dormouse project, Shropshire and Warwickshire

Shropshire County Council
A Hearle & J Irving, West Midlands

March, 2002
£ 4,000

Overall aim is to maintain and increase dormouse populations in Shropshire and Warwickshire through advising on programmes of woodland and hedgerow management and linkage of woodland sites and increasing understanding of habitat and management requirements of dormice among landowners and managers.

Exmoor Barbastelle bat research

G Billington
F Ulf-Hansen, Somerset

March, 2003
£ 15,700

Attempted radio-tracking of Barbastelle bats into unknown hibernacula, and further work on habitat preferences and diet.

Genetic taxonomy of purported UK endemic species

University of Leeds (Dr S G Compton)
R Key, Lowlands

December, 2002
£ 6,000

Determine the true taxonomic status of species of invertebrate purported to be endemic to the UK (and thus automatically included on BAP) by DNA examination and multivariate analysis of morphological characteristics. Research to date has already shown two supposed endemics not to be good species.

Grass-wrack pondweed *Potamogeton compressus* survey

Whild Associates
C Walker, West Midlands

April, 2002
To be decided

The main aim is to establish the status of Grass-wrack pondweed *Potamogeton compressus* in England, and to report on abundance of the species at each existing locality.

Heath Tiger beetle *Cicindela sylvatica* survey

T Allen
R Key, Lowlands

December, 2001
£ 1,500

Survey for populations of Heath tiger beetle *Cicindela sylvatica* and, if successful, to undertake ecological observations to elucidate their conservation needs. Project to be subsumed into the 'Coordination of BAP ground beetle projects in England' project in future.

Investigation of ecological requirements of the spined loach

To be decided
D Isaac, East Midlands

March, 2004
To be decided

This is a joint project with the Environment Agency (EA). Manipulation experiment to assess the impact of channel management on Spined loach. Production of guidance pamphlet for staff.

Lamprey survey, River Derwent, North Yorkshire

To be decided
S Woolven, North & East Yorks

March, 2002
£ 7,000

Assessment of lamprey populations in the River Derwent.

Little tern feeding studies

Chesil Bank and Fleet Nature Reserve
V Copley, Dorset

February, 2002
£ 1,500

Increase understanding of Little tern feeding patterns, especially through identifying key foraging sites.

Lundy cabbage *Coincya wrightii* and its associated insect fauna project *Psylliodes luridipennis*, *Psylliodes napi* and *Ceutorhynchus contractus pallipes*

University of Leeds (Dr S G Compton) and Ropeworks Ltd
Mr A Tillotson)
R Key, Lowlands

December, 2003
£ 9,240

Research into the ecology of the endemic species of invertebrates associated with Lundy cabbage *Coincya wrightii*, as well as ecological studies and monitoring of the Lundy cabbage itself and their vulnerability to competition from invasive alien species and grazing by domestic and feral herbivores.

Monitoring of Moss *Brachythecium appleyardiae*

To be decided
A Hurst, Peak District & Derbys

March, 2002
£ 2,000

Survey of *Brachythecium appleyardiae* sites in Derbyshire and incorporation of management requirements into agreements and designation of new sites if appropriate.

North Lincolnshire coast survey of potential saline lagoons

Unicomarine Ltd
C Weaver, East Midlands

December, 2001
£ 4,972

Survey saltmarsh pools and borrow pits for saline lagoon invertebrates.

North Norfolk coast SPA, low tide bird survey (winter)

To be decided
M Rooney, Norfolk

March, 2002
£ 10,000

Provide numerical and distributional data on wildfowl and wader populations, using intertidal habitats on the North Norfolk coast. Data required to inform SPA monitoring programme.

Otter survey

Derbyshire Wildlife Trust
R Catchpole, Peak District & Derbys

March, 2002
£ 3,000

Extension of survey of otter readvance into the Peak District.

Qualifying species in Natura 2000 rivers audit

To be decided
M Andrews, Peak District & Derbys

March, 2002
£ 7,000

A species audit of qualifying riverine animals in Natura 2000 rivers in Derbyshire and the Peak District. Species to be surveyed will include white-clawed crayfish, bullhead and spined loach.

Radio tracking of greater horseshoe bat

Greena Ecological Consultancy
J Diamond, Devon

March, 2004
£ 10,000

Identify foraging areas used by pregnant and lactating females, and/or juvenile bats. Identify linear features of the landscape used as commuting routes between roosts and foraging areas. Identify night time feeding roosts used by the bats.

Report on the East Anglian fenland invertebrate survey

D Lott
M Drake, Lowlands

December, 2002
£ 6,000

The survey undertaken will be written up so that the results and conclusions of this major study are made available. It will form a baseline for comparison with future survey in Broadland following major changes in fenland management over the last decade.

River Yeo crayfish survey

Environment Agency
M Heath, Dorset

November, 2001
£ 1,000

Assess status of crayfish in the Yeo catchment.

***Sabellaria spinulosa* investigative survey of Morecambe Bay European Marine Site**

North Western & North Wales Sea Fisheries Committee
H Johnston, Cumbria

August, 2001
£ 1,000

Review the previous records of subtidal *Sabellaria* in Morecambe Bay and undertake a search for *Sabellaria spinulosa*, and to map the distribution of any records. Conduct an initial search survey in order to see whether *S. spinulosa* is present within the Bay.

Severn estuary - 'Bird roost key feeding sites' survey

To be decided
K Jeffreys, Somerset

May, 2002
£ 8,400

Determine winter use of agricultural land near the Severn estuary SPA by roosting and feeding waterfowl.

Skylark nest plots

RSPB
P Grice, Uplands

March, 2003
£ 10,000

Trial establishment of use of specially created nest plots for skylarks in autumn-sown cereal crops.

Somerset Levels and Moors aquatic invertebrates *Hydrochara caraboides* survey

D Boyce
M Jones and M Drake, Somerset

December, 2001
£ 4,000

Reassess distribution of Lesser silver water beetle *Hydrochara caraboides*, and habitat management requirements on Somerset Levels and Moors. (*H. caraboides* is RDB endangered species).

Somerset Levels and Moors SPA winter wildfowl survey

D Chown
H Paget-Wilkes, Somerset

March, 2002
£ 6,700

Gain an understanding of the nocturnal feeding requirements of overwintering waterfowl on the Somerset Levels and Moors.

Spined loach, Ouse Washes

Dr M Perrow, University of East Anglia
J Graham, Beds, Cambs & Northants

February, 2002
£ 7,000

Determine current status of spined loach in the Counter drain, Old Bedford river and Ouse Washes. Re-assess habitat preferences, and provide information on likely impacts of dredging and weed cutting on Ouse Washes SAC.

Spined loach, surveys at Wicken Fen and Moreton's Leam

Environment Agency
J Graham, Beds, Cambs & Northants

December, 2001
£ 1,000

Determine current status of Spined loach at Wicken Fen and Nene Washes (Moreton's Leam) SAC. Provide information on likely impacts of management operations at these two sites. This is part of a much larger region-wide survey incorporating nine separate projects.

Survey and autecology of Gilkicker weevil *Pachytychius haematocephalus*

Dr J Denton, Dr T Warne and Mr P Hodge
A Gordon, Hants & Isle of Wight

December, 2001
£ 1,000

Determine the distribution of the weevil *Pachytychius haematocephalus* on Gilkicker Fort Bank and on the shingle along the north shore of the Solent and to make ecological observation to inform the species' conservation. This was in response to a development proposal which may result in destruction of a significant proportion of what was thought to be the only location for the species in England. Future work will be subsumed into a larger project.

Survey and autecology of leaf beetle *Cryptocephalus exiguus*

Natural History Museum (H Mendel) and Mrs A Binding
R Key, Lowlands

December, 2002
£ 2,600

Attempt to re-discover a population of the leaf beetle *Cryptocephalus exiguus* at its only known site, and to survey for additional populations and research its ecological requirements. Future work will be subsumed into a larger project.

Survey and autecology of the Scarlet malachite beetle *Malachius aeneus*

P Hodge, T Allen and C Plant
R Key, Lowlands

December, 2001
£ 3,500

Survey for previously undiscovered populations of the Scarlet malachite beetle *Malachius aeneus* and, if successful, to undertake ecological observations to inform conservation management for the species.

Survey for Noble chafer *Gnorimus nobilis*

People's Trust for Endangered Species (Dr V Keeble)
R Key, Lowlands

December, 2001
£ 3,000

Research former records and current distribution of the Noble chafer *Gnorimus nobilis* in order to conserve any extant population that may be found.

Survey of shield bug *Geotomus puncticollis*

Dr P Kirby
R Key, Lowlands

December, 2001
£ 1,368

Ascertain the distribution of the shield bug *Geotomus puncticollis* in Cornwall and the Scilly Isles, in order to inform statutory site protection to accommodate this species, which is not known to occur on any SSSI.

Survey of *Vertigo moulinsiana* in The Broads SAC

To be decided
M Drake, Lowlands

December, 2001
£ 1,500

Survey this snail protected under the Habitats Directive in The Broads, to inform conservation objectives and monitoring.

Twite survey

To be decided
R Pollitt, Peak District & Derbys

March, 2002
£ 3,000

Survey of Twite breeding and feeding sites on the moorland edge, and collation of management guidance for farmers.

Upper Severn estuary bird survey

Wildfowl and Wetlands Trust
C Pagendam, Three Counties

July, 2002
£ 2,000

Survey to establish its actual and potential use by breeding waders, wintering wildfowl and other bird species. To evaluate the condition of the land and identify factors limiting use by these groups of birds.

Violet click beetle *Limoniscus violaceus* project

Dr P Skidmore, P Whitehead, Capability Landscapes (M Frater)
R Key, Lowlands

December, 2003
£ 2,887

Survey for additional sites for the Violet click beetle *Limoniscus violaceus* in Lowland parkland and Wood-pasture sites in southern England, and to research artificial methods of augmenting wild populations of the species by the construction of 'artificial hollow trees'.

Whitebeam *Sorbus* and sedge *Carex* cliff survey and management

Libby Houston and Ropeworks
D Heaver, Three Counties

May, 2003
£ 4,000

Provide an accurate map of critically rare species found on cliffs with the aim of relocating the plants for future management and conservation work. Develop conservation management plans based on the findings of the surveys.

Appendix 1. List of Species Recovery Programme taxa

The current subject of research and development

Higher taxon	Species	English Nature contact
Amphibian	<i>Bufo calamita</i>	Jim Foster, Lowlands
	<i>Rana lessonae</i>	Jim Foster, Lowlands
	<i>Triturus cristatus</i>	Jim Foster, Lowlands
Ant	<i>Anergates atratulus</i>	David Sheppard, Lowlands
	<i>Formica candida</i>	David Sheppard, Lowlands
	<i>Formica exsecta</i>	David Sheppard, Lowlands
	<i>Formica pratensis</i>	David Sheppard, Lowlands
	<i>Formica rufibarbis</i>	David Sheppard, Lowlands
	<i>Formicoxenus nitidulus</i>	David Sheppard, Lowlands
Bee	<i>Andrena ferox</i>	David Sheppard, Lowlands
	<i>Andrena lathyri</i>	David Sheppard, Lowlands
	<i>Bombus humilis</i>	David Sheppard, Lowlands
	<i>Bombus sylvarum</i>	David Sheppard, Lowlands
	<i>Lasioglossum angusticeps</i>	David Sheppard, Lowlands
	<i>Nomada armata</i>	David Sheppard, Lowlands
	<i>Nomada errans</i>	David Sheppard, Lowlands
	<i>Nomada ferruginata</i>	David Sheppard, Lowlands
	<i>Osmia parietina</i>	David Sheppard, Lowlands
	<i>Bombus monticola</i>	David Sheppard, Lowlands
	Beetle	<i>Agabus brunneus</i>
<i>Amara famelica</i>		Roger Key, Lowlands
<i>Amara strenua</i>		Roger Key, Lowlands
<i>Ampedus nigerrimus</i>		Roger Key, Lowlands
<i>Ampedus ruficeps</i>		Roger Key, Lowlands
<i>Ampedus rufipennis</i>		Roger Key, Lowlands
<i>Anisodactylus nemorivagus</i>		Roger Key, Lowlands
<i>Anisodactylus poeciloides</i>		Roger Key, Lowlands
<i>Anostirus castaneus</i>		Roger Key, Lowlands
<i>Badister collaris</i>		Roger Key, Lowlands
<i>Badister peltatus</i>		Roger Key, Lowlands
<i>Byctiscus populi</i>		Roger Key, Lowlands
<i>Carabus intricatus</i>		David Sheppard, Lowlands
<i>Cicindela germanica</i>		Roger Key, Lowlands
<i>Cicindela hybrida</i>		Roger Key, Lowlands
<i>Cicindela maritima</i>		Roger Key, Lowlands
<i>Cicindela sylvatica</i>		Roger Key, Lowlands
<i>Cryptocephalus coryli</i>		Roger Key, Lowlands
<i>Cryptocephalus decemmaculatus</i>		Roger Key, Lowlands
<i>Cryptocephalus exiguus</i>		Roger Key, Lowlands
<i>Cryptocephalus nitidulus</i>		Roger Key, Lowlands
<i>Cryptocephalus primarius</i>		Roger Key, Lowlands
<i>Cryptocephalus sexpunctatus</i>		Roger Key, Lowlands
<i>Donacia aquatica</i>		Roger Key, Lowlands
<i>Donacia bicolora</i>		Roger Key, Lowlands
<i>Dryophthorus corticalis</i>		Roger Key, Lowlands
<i>Dyschirius angustatus</i>		Roger Key, Lowlands
<i>Elater ferrugineus</i>		Roger Key, Lowlands
<i>Eucnemis capucina</i>		Roger Key, Lowlands
<i>Gastrallus immarginatus</i>		Roger Key, Lowlands
<i>Gnorimus nobilis</i>		Roger Key, Lowlands
<i>Gnorimus variabilis</i>		Roger Key, Lowlands

Higher taxon	Species	English Nature contact
	<i>Graphoderus zonatus</i>	Catherine Chatters, Hampshire & Isle of Wight
	<i>Harpalus cordatus</i>	Roger Key, Lowlands
	<i>Harpalus dimidiatus</i>	Roger Key, Lowlands
	<i>Harpalus froelichi</i>	Roger Key, Lowlands
	<i>Harpalus obscurus</i>	Roger Key, Lowlands
	<i>Harpalus parallelus</i>	Roger Key, Lowlands
	<i>Harpalus punctatulus</i>	Roger Key, Lowlands
	<i>Hydrochara caraboides</i>	Not appointed
	<i>Hypebaeus flavipes</i>	Roger Key, Lowlands
	<i>Laccophilus poecilus</i>	Not appointed
	<i>Lacon querceus</i>	Roger Key, Lowlands
	<i>Limoniscus violaceus</i>	Roger Key, Lowlands
	<i>Lucanus cervus</i>	Roger Key, Lowlands
	<i>Malachius aeneus</i>	Roger Key, Lowlands
	<i>Megapenthes lugens</i>	Roger Key, Lowlands
	<i>Melanapion minimum</i>	Roger Key, Lowlands
	<i>Melanotus punctolineatus</i>	Roger Key, Lowlands
	<i>Pachytychius haematocephalus</i>	Roger Key, Lowlands
	<i>Panagaeus crux-major</i>	Roger Key, Lowlands
	<i>Procas granulicollis</i>	Roger Key, Lowlands
	<i>Psylliodes luridipennis</i>	Roger Key, Lowlands
	<i>Pterostichus kugelanni</i>	Roger Key, Lowlands
	<i>Rhynchaenus testaceus</i>	Roger Key, Lowlands
	<i>Chrysolina graminis</i>	Roger Key, Lowlands
	<i>Brindalus porciculus</i>	Roger Key, Lowlands
	<i>Cryptocephalus frontalis</i>	Roger Key, Lowlands
Bird	<i>Acrocephalus palustris</i>	Andy Brown, Uplands
	<i>Alauda arvensis</i>	Phil Grice, Uplands
	<i>Botaurus stellaris</i>	Andy Brown, Uplands
	<i>Burhinus oedicnemus</i>	Phil Grice, Uplands
	<i>Crex crex</i>	Phil Grice, Uplands
	<i>Emberiza cirius</i>	Phil Grice, Uplands
	<i>Emberiza schoeniclus</i>	Phil Grice, Uplands
	<i>Miliaria calandra</i>	Phil Grice, Uplands
	<i>Passer montanus</i>	Phil Grice, Uplands
	<i>Sterna dougallii</i>	Andy Brown, Uplands
	<i>Streptopelia turtur</i>	Phil Grice, Uplands
	<i>Tetrao tetrix</i>	John Barrett, Northumbria
	<i>Circus aeruginosus</i>	Ian Carter, Uplands
	<i>Circus pygargus</i>	Ian Carter, Uplands
	<i>Milvus milvus</i>	Ian Carter, Uplands
	<i>Pyrhacorax pyrrhacorax</i>	Phil Grice, Uplands
	<i>Lophopus crystallinus</i>	Not appointed
Butterfly	<i>Argynnis adippe</i>	David Sheppard, Lowlands
	<i>Aricia artaxerxes</i>	David Sheppard, Lowlands
	<i>Boloria euphrosyne</i>	David Sheppard, Lowlands
	<i>Carterocephalus palaemon</i>	David Sheppard, Lowlands
	<i>Euphydrya aurinia</i>	David Sheppard, Lowlands
	<i>Hesperia comma</i>	David Sheppard, Lowlands
	<i>Lycaena dispar</i>	David Sheppard, Lowlands
	<i>Lysandra bellargus</i>	David Sheppard, Lowlands
	<i>Maculinea arion</i>	David Sheppard, Lowlands
	<i>Mellicta athalia</i>	David Sheppard, Lowlands
	<i>Plebejus argus</i>	David Sheppard, Lowlands
	<i>Coenonympha tullia</i>	David Sheppard, Lowlands
	<i>Thymelicus acteon</i>	David Sheppard, Lowlands

Higher taxon	Species	English Nature contact
	<i>Boloria selene</i>	David Sheppard, Lowlands
Coral	<i>Eunicella verrucosa</i>	Roger Covey, Maritime
Cricket	<i>Decticus verrucivorus</i>	David Sheppard, Lowlands
	<i>Gryllotalpa gryllotalpa</i>	David Sheppard, Lowlands
	<i>Gryllus campestris</i>	David Sheppard, Lowlands
	<i>Stethophyma grossum</i>	David Sheppard, Lowlands
	<i>Chorthippus vagans</i>	David Sheppard, Lowlands
Crustacean	<i>Austropotamobius pallipes</i>	Maggie Robinson, Cumbria
	<i>Triops cancriformis</i>	Roger Key, Lowlands
Damselfly	<i>Coenagrion mercuriale</i>	Not appointed
Fish	<i>Alosa alosa</i>	David Heaver, Three Counties
	<i>Alosa fallax</i>	David Heaver, Three Counties
	<i>Coregonus albula</i>	Erika Donnison, Cumbria
	<i>Cobitis taenia</i>	Chris Mainstone, EIT
Fly	<i>Asilus crabroniformis</i>	Not appointed
	<i>Bombylius discolor</i>	Not appointed
	<i>Bombylius minor</i>	Not appointed
	<i>Callicera spinolae</i>	Not appointed
	<i>Chrysotoxum octomaculatum</i>	Not appointed
	<i>Doros profuges</i>	Not appointed
	<i>Eristalis cryptarum</i>	Not appointed
	<i>Lipsothrix errans</i>	Not appointed
	<i>Lipsothrix nervosa</i>	Not appointed
	<i>Lipsothrix nigristigma</i>	Not appointed
	<i>Odontomyia hydroleon</i>	Not appointed
Fungi	<i>Bankera fuligineoalba</i>	Carl Borges, Essex, Herts & London
	<i>Battarraea phalloides</i>	Carl Borges, Essex, Herts & London
	<i>Boletus regius</i>	Carl Borges, Essex, Herts & London
	<i>Boletus satanas</i>	Carl Borges, Essex, Herts & London
	<i>Buglossoporus pulvinus</i>	Carl Borges, Essex, Herts & London
	<i>Hericium erinaceum</i>	Carl Borges, Essex, Herts & London
	<i>Hydnellum concrescens</i>	Carl Borges, Essex, Herts & London
	<i>Hydnellum ferrugineum</i>	Carl Borges, Essex, Herts & London
	<i>Hydnellum scrobiculatum</i>	Carl Borges, Essex, Herts & London
	<i>Hydnellum spongiospies</i>	Carl Borges, Essex, Herts & London
	<i>Hygrocybe calyptriformis</i>	Carl Borges, Essex, Herts & London
	<i>Hygrocybe spadicea</i>	Carl Borges, Essex, Herts & London
	<i>Microglossum olivaceum</i>	Carl Borges, Essex, Herts & London
	<i>Phelladon confluens</i>	Carl Borges, Essex, Herts & London
	<i>Phellodon melaleucus</i>	Carl Borges, Essex, Herts & London
	<i>Phellodon tomentosus</i>	Carl Borges, Essex, Herts & London
	<i>Poronia punctata</i>	Carl Borges, Essex, Herts & London
	<i>Sarcodon imbricatus</i>	Carl Borges, Essex, Herts & London
	<i>Sarcodon scabrosus</i>	Carl Borges, Essex, Herts & London
	<i>Boletus pseudoregius</i>	Carl Borges, Essex, Herts & London
	<i>Hericium coralloides</i>	Carl Borges, Essex, Herts & London
	<i>Hydnellum mirabile</i>	Carl Borges, Essex, Herts & London
Lichen	<i>Bacidia incompta</i>	Peter Lambley, Norfolk
	<i>Biatoridium monasteriense</i>	Peter Lambley, Norfolk
	<i>Bryoria smithii</i>	Peter Lambley, Norfolk
	<i>Buellia asterella</i>	Peter Lambley, Norfolk
	<i>Calicium corynellum</i>	Peter Lambley, Norfolk
	<i>Caloplaca aractina</i>	Peter Lambley, Norfolk
	<i>Caloplaca luteoalba</i>	Peter Lambley, Norfolk
	<i>Catapyrenium psoromoides</i>	Peter Lambley, Norfolk
	<i>Cladonia mediterranea</i>	Peter Lambley, Norfolk
	<i>Collema dichotomum</i>	Peter Lambley, Norfolk

Higher taxon	Species	English Nature contact
	<i>Enterographa elaborata</i>	Peter Lambley, Norfolk
	<i>Enterographa sorediata</i>	Peter Lambley, Norfolk
	<i>Graphina pauciloculata</i>	Peter Lambley, Norfolk
	<i>Heterodermia leucomelos</i>	Peter Lambley, Norfolk
	<i>Lecanactis hemisphaerica</i>	Peter Lambley, Norfolk
	<i>Squamarina lentigera</i>	Peter Lambley, Norfolk
	<i>Teloschistes chrysophthalmus</i>	Peter Lambley, Norfolk
	<i>Catillaria laureri</i>	Peter Lambley, Norfolk
	<i>Fulgensia fulgens</i>	Peter Lambley, Norfolk
	<i>Parmelia minarum</i>	Peter Lambley, Norfolk
	<i>Teloschistes flavicans</i>	Peter Lambley, Norfolk
Liverwort	<i>Cephaloziella nicholsonii</i>	Beth Tonkin, Cornwall & Isles of Scilly
	<i>Jamesoniella undulifolia</i>	Ron Porley, Thames & Chilterns
	<i>Lejeunea mandonii</i>	Ron Porley, Thames & Chilterns
	<i>Lophozia rutheana</i>	Ron Porley, Thames & Chilterns
	<i>Marsupella profunda</i>	Ron Porley, Thames & Chilterns
	<i>Pallavicinia lyellii</i>	Ron Porley, Thames & Chilterns
	<i>Petalophyllum ralfsii</i>	Ron Porley, Thames & Chilterns
	<i>Riccia huebeneriana</i>	Ron Porley, Thames & Chilterns
	<i>Cephaloziella massalongi</i>	Beth Tonkin, Cornwall & Isles of Scilly
Mammal	<i>Arvicola terrestris</i>	Tony Mitchell-Jones, Lowlands
	<i>Barbastella barbastellus</i>	Tony Mitchell-Jones, Lowlands
	<i>Lepus europaeus</i>	Tony Mitchell-Jones, Lowlands
	<i>Muscardinus avellanarius</i>	Tony Mitchell-Jones, Lowlands
	<i>Myotis bechsteinii</i>	Tony Mitchell-Jones, Lowlands
	<i>Phocoena phocoena</i>	Angela Moffat, SDRT
	<i>Pipistrellus pipistrellus</i>	Tony Mitchell-Jones, Lowlands
	<i>Rhinolophus ferrumequinum</i>	Tony Mitchell-Jones, Lowlands
	<i>Rhinolophus hipposideros</i>	Tony Mitchell-Jones, Lowlands
	<i>Sciurus vulgaris</i>	Tony Mitchell-Jones, Lowlands
	<i>Myotis nattereri</i>	Tony Mitchell-Jones, Lowlands
Mollusc	<i>Catinella arenaria</i>	Not appointed
	<i>Margaritifera margaritifera</i>	Not appointed
	<i>Pisidium tenuilineatum</i>	Not appointed
	<i>Pseudanodonta complanata</i>	Not appointed
	<i>Vertigo angustior</i>	Not appointed
	<i>Vertigo genesii</i>	Not appointed
	<i>Vertigo geyeri</i>	Not appointed
	<i>Vertigo moulinsiana</i>	Not appointed
Moss	<i>Acaulon triquetrum</i>	Ron Porley, Thames & Chilterns
	<i>Atrichum angustatum</i>	Ron Porley, Thames & Chilterns
	<i>Brachythecium appleyardiae</i>	Ron Porley, Thames & Chilterns
	<i>Bryum calophyllum</i>	Ron Porley, Thames & Chilterns
	<i>Bryum mamillatum</i>	Ron Porley, Thames & Chilterns
	<i>Bryum neodamense</i>	Ron Porley, Thames & Chilterns
	<i>Bryum turbinatum</i>	Ron Porley, Thames & Chilterns
	<i>Bryum uliginosum</i>	Ron Porley, Thames & Chilterns
	<i>Bryum warneum</i>	Ron Porley, Thames & Chilterns
	<i>Buxbaumia viridis</i>	None
	<i>Cryphaea lamyana</i>	Ron Porley, Thames & Chilterns
	<i>Tortula cernuus</i>	Ron Porley, Thames & Chilterns
	<i>Didymodon tomaculosus</i>	Ron Porley, Thames & Chilterns
	<i>Ditrichum cornubicum</i>	Beth Tonkin, Cornwall & Isles of Scilly
	<i>Ditrichum plumbicola</i>	Ron Porley, Thames & Chilterns
	<i>Fissidens exiguus</i>	Ron Porley, Thames & Chilterns
	<i>Leptodontium gemmascens</i>	Ron Porley, Thames & Chilterns
	<i>Orthodontium gracile</i>	Ron Porley, Thames & Chilterns

Higher taxon	Species	English Nature contact
	<i>Orthotrichum obtusifolium</i>	Ron Porley, Thames & Chilterns
	<i>Orthotrichum pallens</i>	Ron Porley, Thames & Chilterns
	<i>Seligeria carniolica</i>	Ron Porley, Thames & Chilterns
	<i>Sphagnum balticum</i>	Ron Porley, Thames & Chilterns
	<i>Tetradontium repandum</i>	Ron Porley, Thames & Chilterns
	<i>Thamnobryum angustifolium</i>	Ron Porley, Thames & Chilterns
	<i>Thamnobryum cataractarum</i>	Ron Porley, Thames & Chilterns
	<i>Tortula freibergii</i>	Ron Porley, Thames & Chilterns
	<i>Weissia multicapsularis</i>	Ron Porley, Thames & Chilterns
	<i>Weissia rostellata</i>	Ron Porley, Thames & Chilterns
	<i>Weissia squarrosa</i>	Ron Porley, Thames & Chilterns
	<i>Zygodon forsteri</i>	Ron Porley, Thames & Chilterns
	<i>Zygodon gracilis</i>	Ron Porley, Thames & Chilterns
	<i>Didymodon glaucus</i>	Ron Porley, Thames & Chilterns
Moth	<i>Acosmetia caliginosa</i>	David Sheppard, Lowlands
	<i>Aspitates gilvaria gilvaria</i>	David Sheppard, Lowlands
	<i>Athetis pallustris</i>	David Sheppard, Lowlands
	<i>Pyropteron chrysidiformis</i>	Brian Banks, Kent
	<i>Calophasia lunula</i>	David Sheppard, Lowlands
	<i>Catocala promissa</i>	David Sheppard, Lowlands
	<i>Catocala sponsa</i>	David Sheppard, Lowlands
	<i>Coleophora tricolor</i>	David Sheppard, Lowlands
	<i>Coscinia cribraria bivittata</i>	David Sheppard, Lowlands
	<i>Cosmia diffinis</i>	David Sheppard, Lowlands
	<i>Shargacucullia lychnitis</i>	David Sheppard, Lowlands
	<i>Cyclophora pendularia</i>	David Sheppard, Lowlands
	<i>Dicycla oo</i>	David Sheppard, Lowlands
	<i>Epione parallelaria</i>	David Sheppard, Lowlands
	<i>Eustroma reticulata</i>	David Sheppard, Lowlands
	<i>Hadena albimacula</i>	David Sheppard, Lowlands
	<i>Heliophobus reticulata marginosa</i>	David Sheppard, Lowlands
	<i>Hemaris tityus</i>	David Sheppard, Lowlands
	<i>Hydraecia osseola hucherardi</i>	David Sheppard, Lowlands
	<i>Hydrelia sylvata</i>	David Sheppard, Lowlands
	<i>Hypena rostralis</i>	David Sheppard, Lowlands
	<i>Idaea dilutaria</i>	David Sheppard, Lowlands
	<i>Idaea ochrata cantiata</i>	David Sheppard, Lowlands
	<i>Jodia croceago</i>	David Sheppard, Lowlands
	<i>Lycia zonaria britannica</i>	David Sheppard, Lowlands
	<i>Lygephila craccae</i>	David Sheppard, Lowlands
	<i>Minoa murinata</i>	David Sheppard, Lowlands
	<i>Moma alpium</i>	David Sheppard, Lowlands
	<i>Mythimna turca</i>	David Sheppard, Lowlands
	<i>Noctua orbona</i>	David Sheppard, Lowlands
	<i>Oria musculosa</i>	David Sheppard, Lowlands
	<i>Paracolax tristalis</i>	David Sheppard, Lowlands
	<i>Paradiarsia sobrina</i>	David Sheppard, Lowlands
	<i>Pareulype berberata</i>	David Sheppard, Lowlands
	<i>Pechipogo strigilata</i>	David Sheppard, Lowlands
	<i>Polia bombycina</i>	David Sheppard, Lowlands
	<i>Polymixis xanthomista</i>	David Sheppard, Lowlands
	<i>Rheumaptera hastata</i>	David Sheppard, Lowlands
	<i>Schrankia taenialis</i>	David Sheppard, Lowlands
	<i>Scotopteryx bipunctaria</i>	David Sheppard, Lowlands
	<i>Siona lineata</i>	David Sheppard, Lowlands
	<i>Trichopteryx polycommata</i>	David Sheppard, Lowlands
	<i>Trisateles emortualis</i>	David Sheppard, Lowlands

Higher taxon	Species	English Nature contact
	<i>Tyta luctuosa</i>	David Sheppard, Lowlands
	<i>Xestia alpicola alpina</i>	David Sheppard, Lowlands
	<i>Xestia rhomboidea</i>	David Sheppard, Lowlands
	<i>Xylena exsoleta</i>	David Sheppard, Lowlands
	<i>Gortyna borelii lunata</i>	David Sheppard, Lowlands
	<i>Luperina nickerlii guenei/leechi</i>	David Sheppard, Lowlands
	<i>Thalera fimbralis</i>	David Sheppard, Lowlands
Reptile	<i>Dermochelys coriacea</i>	Angela Moffat, SDRT
	<i>Lacerta agilis</i>	Jim Foster, Lowlands
	<i>Coronella austriaca</i>	Jim Foster, Lowlands
Spider	<i>Dolomedes plantarius</i>	Not appointed
	<i>Eresus cinnaberinus</i>	Roger Key, Lowlands
Stonewort	<i>Tolypella intricata</i>	Simon Leach, Somerset
	<i>Tolypella prolifera</i>	Simon Leach, Somerset
True bug	<i>Cicadetta montana</i>	David Sheppard, Lowlands
Vascular plant	<i>Alchemilla minima</i>	Ian Taylor, Cumbria
	<i>Alisma gramineum</i>	Jill Sutcliffe, Lowlands
	<i>Apium repens</i>	Graham Steven, Thames & Chilterns
	<i>Arabis glabra</i>	Jill Sutcliffe, Lowlands
	<i>Bromus interruptus</i>	Ron Porley, Thames & Chilterns
	<i>Carex muricata ssp muricata</i>	Ian Taylor, Cumbria
	<i>Carex vulpina</i>	Ron Porley, Thames & Chilterns
	<i>Centaurea cyanus</i>	Ron Porley, Thames & Chilterns
	<i>Coincya wrightii</i>	Roger Key, Lowlands
	<i>Crepis foetida</i>	Brian Banks, Kent
	<i>Cypripedium calceolus</i>	Ian Taylor, Cumbria
	<i>Damasonium alisma</i>	Ron Porley, Thames & Chilterns
	<i>Dianthus armeria</i>	Jill Sutcliffe, Lowlands
	<i>Euphrasia rivularis</i>	Ian Taylor, Cumbria
	<i>Euphrasia vigursii</i>	Ian Taylor, Cumbria
	<i>Filago lutescens</i>	Ron Porley, Thames & Chilterns
	<i>Filago pyramidata</i>	Ron Porley, Thames & Chilterns
	<i>Fumaria occidentalis</i>	Simon Leach, Somerset
	<i>Fumaria purpurea</i>	Ian Taylor, Cumbria
	<i>Galeopsis angustifolia</i>	Ron Porley, Thames & Chilterns
	<i>Galium tricornutum</i>	Ron Porley, Thames & Chilterns
	<i>Juncus pygmaeus</i>	Simon Leach, Somerset
	<i>Juniperus communis</i>	Jill Sutcliffe, Lowlands
	<i>Leersia oryzoides</i>	Simon Leach, Somerset
	<i>Liparis loeselii</i>	Clive Doarks, Norfolk
	<i>Luronium natans</i>	Chris Walker, West Midlands
	<i>Lycopodiella inundata</i>	Ian Taylor, Cumbria
	<i>Melampyrum sylvaticum</i>	Ian Taylor, Cumbria
	<i>Mentha pulegium</i>	Ron Porley, Thames & Chilterns
	<i>Najas flexilis</i>	Allan Stewart, Cumbria
	<i>Pilularia globulifera</i>	Rob Cooke, SDRT
	<i>Potamogeton compressus</i>	Chris Walker, West Midlands
	<i>Ranunculus tripartitus</i>	Simon Leach, Somerset
	<i>Saxifraga hirculus</i>	Ian Taylor, Cumbria
	<i>Scandix pecten-veneris</i>	Ron Porley, Thames & Chilterns
	<i>Schoenoplectus triqueter</i>	Brian Johnson, Somerset
	<i>Scleranthus perennis ssp. prostra</i>	Nick Sibbett, Suffolk
	<i>Sium latifolium</i>	Stephen Parker, Somerset
	<i>Thlaspi perfoliatum</i>	David Heaver, Three Counties
	<i>Torilis arvensis</i>	Ron Porley, Thames & Chilterns
	<i>Valerianella rimosa</i>	Ron Porley, Thames & Chilterns
	<i>Woodsia ilvensis</i>	Rob Cooke, SDRT

Higher taxon	Species	English Nature contact
	<i>Adonis annua</i>	Ron Porley, Thames & Chilterns
	<i>Ajuga chamaepitys</i>	Ron Porley, Thames & Chilterns
	<i>Althaea hirsuta</i>	Flemming Ulf-Hansen, Somerset
	<i>Atriplex pedunculata</i>	Eric Steer, Essex, Herts & London
	<i>Carex depauperata</i>	Ian Taylor, Cumbria
	<i>Cephalanthera longifolia</i>	Ian Taylor, Cumbria
	<i>Chamaemelum nobile</i>	Simon Leach, Somerset
	<i>Corrigiola litoralis</i>	Simon Dunsford, Devon
	<i>Cyperus fuscus</i>	Stephen Parker, Somerset
	<i>Filago gallica</i>	Ron Porley, Thames & Chilterns
	<i>Himantoglossum hircinum</i>	Ian Taylor, Cumbria
	<i>Hypericum linarifolium</i>	Simon Leach, Somerset
	<i>Melampyrum arvense</i>	Ron Porley, Thames & Chilterns
	<i>Ophrys fuciflora</i>	Ian Taylor, Cumbria
	<i>Orchis militaris</i>	Ian Taylor, Cumbria
	<i>Orchis simia</i>	Ian Taylor, Cumbria
	<i>Populus nigra</i>	Patrick Robinson, Suffolk
	<i>Ranunculus arvensis</i>	Ron Porley, Thames & Chilterns
	<i>Ranunculus ophioglossifolius</i>	David Heaver, Three Counties
	<i>Salvia pratensis</i>	Ian Taylor, Cumbria
	<i>Senecio paludosus</i>	Jill Sutcliffe, Lowlands
	<i>Sorbus spp.</i>	Ian Taylor, Cumbria
	<i>Stachys germanica</i>	Heather Whetter, Thames & Chilterns
	<i>Stachys germanica</i>	Tanya Gilbert, Thames & Chilterns
	<i>Viola persicifolia</i>	Jill Sutcliffe, Lowlands
	<i>Limonium britannicum</i>	Simon Leach, Somerset
	<i>Limonium dodartiforme</i>	Simon Leach, Somerset
	<i>Limonium loganicum</i>	Simon Leach, Somerset
	<i>Limonium procerum</i>	Simon Leach, Somerset
	<i>Limonium recurvum</i>	Simon Leach, Somerset
Wasp	<i>Cerceris quadricincta</i>	David Sheppard, Lowlands
	<i>Cerceris quinquefasciata</i>	David Sheppard, Lowlands
	<i>Chrysis fulgida</i>	David Sheppard, Lowlands
	<i>Chrysura hirsuta</i>	David Sheppard, Lowlands
	<i>Evagetes pectinipes</i>	David Sheppard, Lowlands
	<i>Homonotus sanguinolentus</i>	David Sheppard, Lowlands
	<i>Pseudepipona herichii</i>	David Sheppard, Lowlands
	<i>Ceropales variegata</i>	David Sheppard, Lowlands
Worm	<i>Armandia cirrhosa</i>	Paul Gilliland, Maritime
	<i>Hirudo medicinalis</i>	Brian Banks, Kent

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