

BIOLOGICAL RECORDING IN THE UNITED KINGDOM

Present practice and future development

Volume 2
APPENDICES

Department of the Environment

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Department of the Environment

**BIOLOGICAL RECORDING
IN THE
UNITED KINGDOM**

Present practice and future development

**Volume 2
APPENDICES**

to the Report prepared on behalf of the

Coordinating Commission for Biological Recording

by

John Burnett (CCBR Chairman)

Charles Copp (C J T Copp, Clevedon)

Paul Harding (Institute of Terrestrial Ecology)

*This Report was produced for the
Department of the Environment
and the Joint Nature Conservation
Committee, and supported by the
Institute of Terrestrial Ecology.
Views expressed in it do not
necessarily coincide with those of
any of these organisations.*

The full Report is published by the Department of the Environment in two volumes:

Volume I includes material summarised in this Summary Report

Volume II includes Appendices covering:

- membership of CCBR
- Questionnaire used in the CCBR survey
- a list of respondents to the CCBR Questionnaire
- a legal report prepared by Morrell, Peel & Gamlen, Oxford, for CCBR
- a full bibliography

Department of the Environment
contract number - CRO 110 : PECO 7/2/129

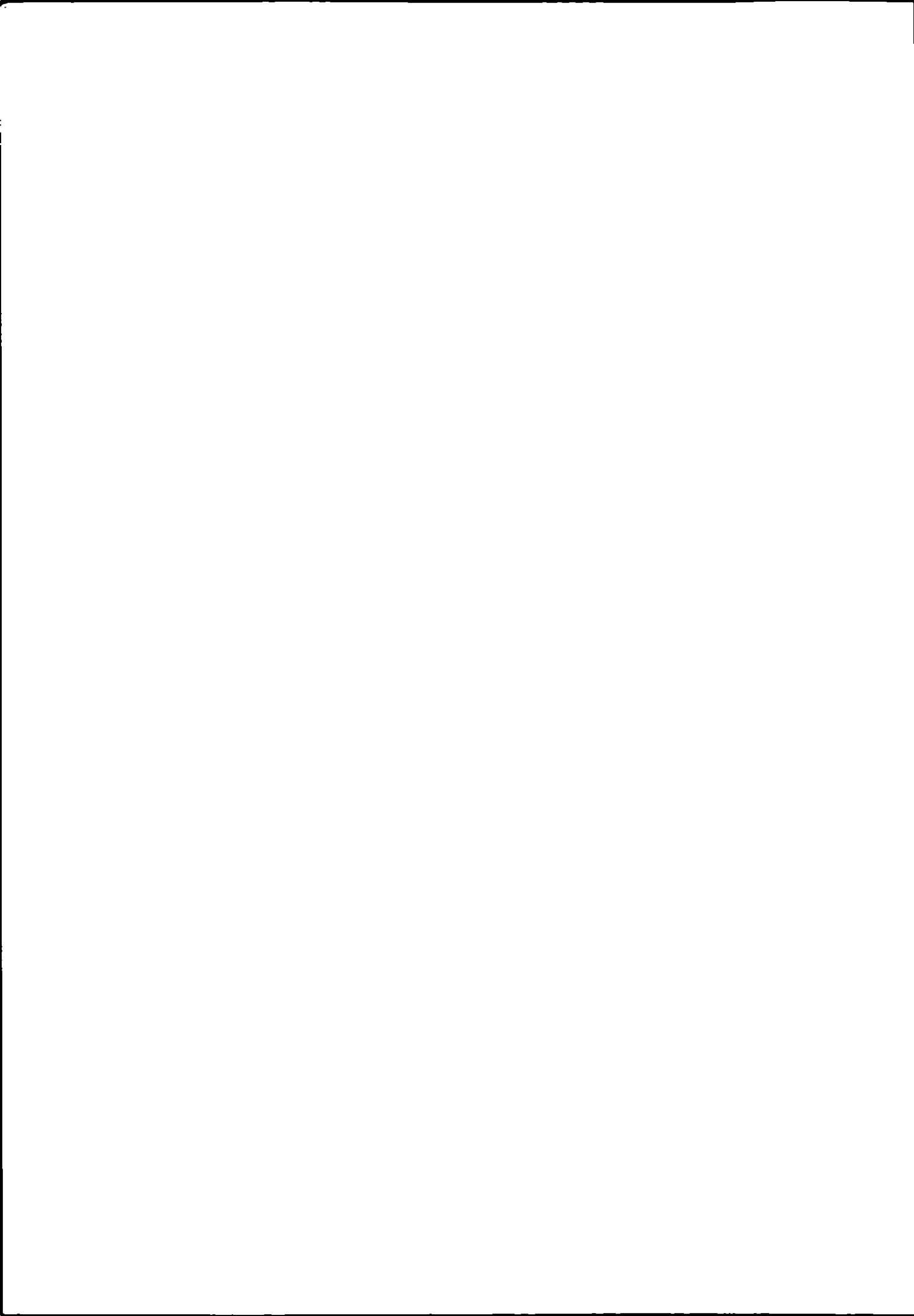
English Nature (on behalf of Joint Nature Conservation Committee)
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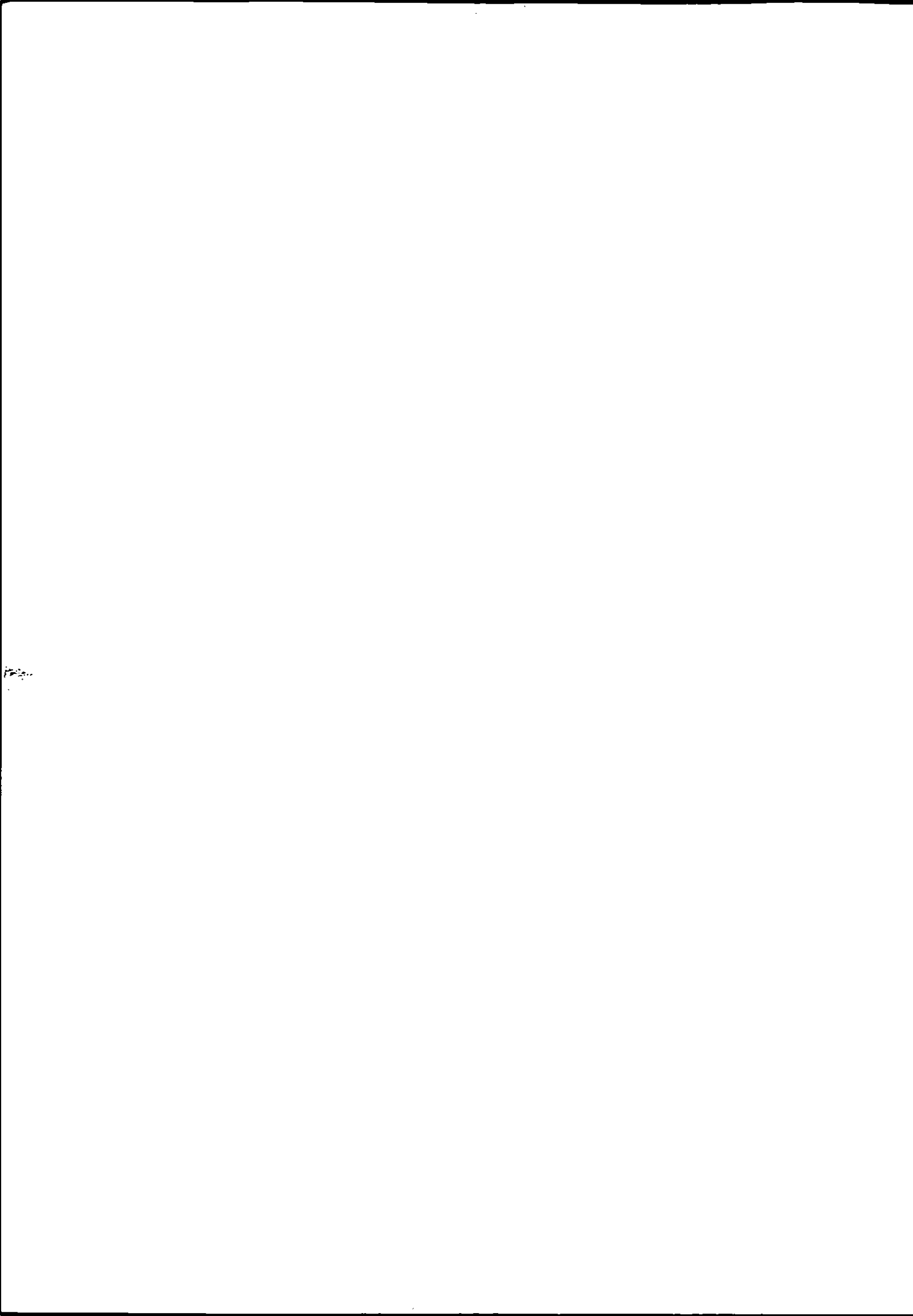
VOLUME 2

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Appendix 1

**Coordinating Commission for Biological Recording:
representation and membership**



Coodinating Commission for Biological Recording: representation and membership

Independent Chairman:

Sir John Burnett *

Representative members (as at 1.12.1994):

Dr.P.Costigan (deputy Dr.R.Brand-Hardy; previously Dr.M.M.Parker)
Ministry of Agriculture, Fisheries and Food

Ms.N.Court

Association of Local Government Ecologists (formerly the Working Panel of Local Authority Ecologists)

Dr.P.Donald (previously Dr.J.J.D.Greenwood, Dr.D.W.Gibbons)
British Trust for Ornithology (from May 1992)

Mr.W.A.Ely

National Federation for Biological Recording

Ms.S.Hawkswell (deputy Dr.G.McGlone, previously Mr.C.Couzens)
*The Wildlife Trusts (formerly The Royal Society for Nature Conservation/Wildlife Trusts Partnership) **

Mr.D.Mellor (previously Mr.C.J.Woodward)

Biological Recording in Scotland Campaign

Dr.G.Ovenden (previously Dr.S.D.Webster, Mr.J.C.Peters)
*Department of the Environment **

Dr.T.M.Reed (deputy Mr.J.Bell; previously Dr.J.M.Hellawell)

*Joint Nature Conservation Committee (representing the statutory nature conservation agencies)
(formerly the Nature Conservancy Council)**

Professor M.R.D.Seaward

Linnean Society of London

Dr.A.J.A.Stewart

*Royal Society for the Protection of Birds (to February 1992)**

Dr.R.A.Sweeting

National Rivers Authority

Dr.B.K.Wyatt (deputy Mr.P.T.Harding)

*Natural Environment Research Council **

Non-executive Secretary

Mr.P.T.Harding

NERC Institute of Terrestrial Ecology

CCBR Programme Consultants

Mr.C.J.T.Copp

Environmental Information Management (formerly Applied New Technologies)

Mr.P.T.Harding

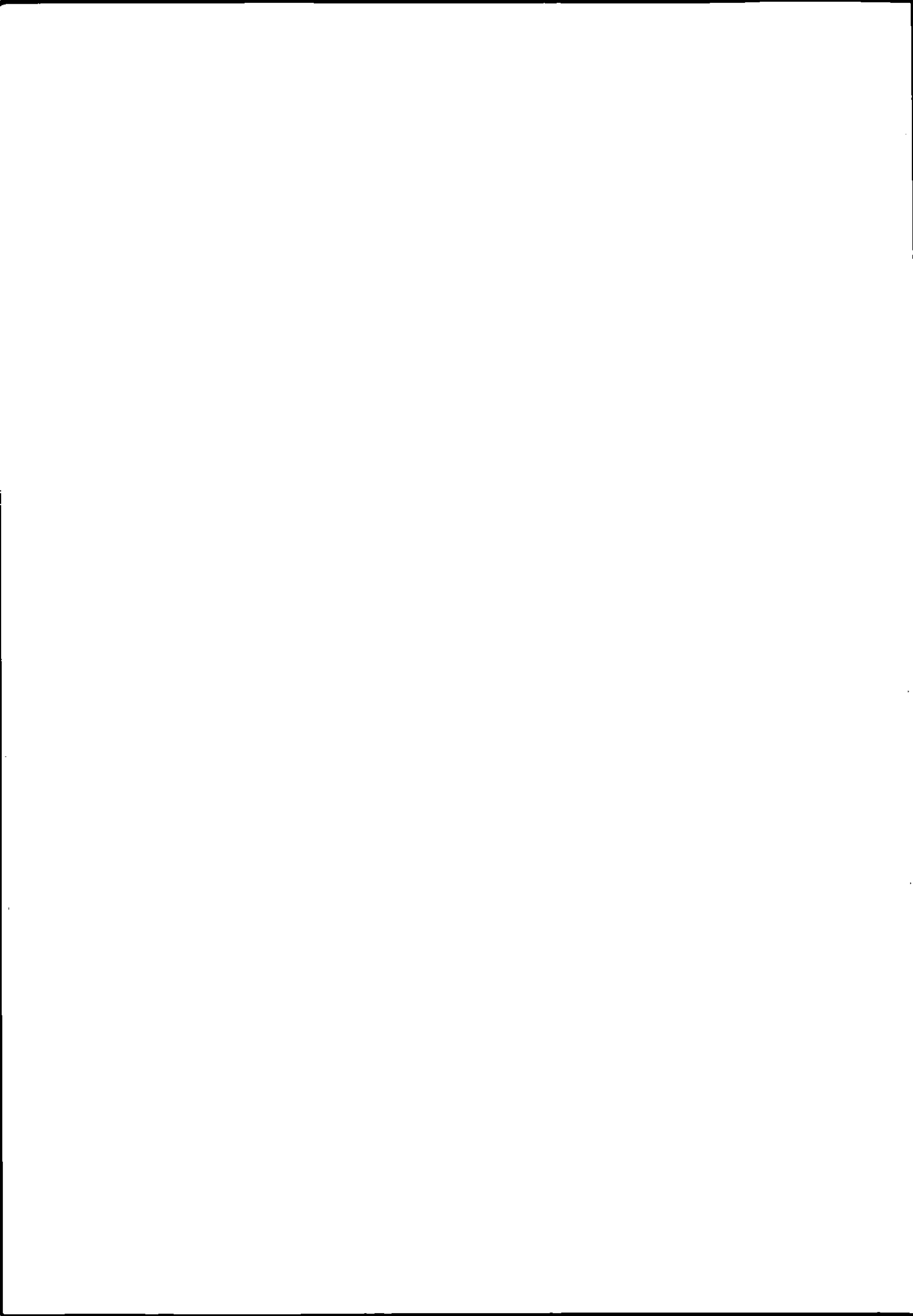
NERC Institute of Terrestrial Ecology

CCBR Legal Consultant

Ms.C.Blackburn

Morrell, Peel and Gamlen

* Member of the Board of Management for the CCBR Programme



Appendix 2

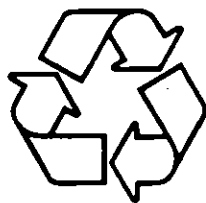
**Programme for the establishment of a national system
for the coordination of biological recording -
Questionnaire**



Co-ordinating Commission For Biological Recording

**Programme for the establishment of a national system
for the co-ordination of biological recording**

Questionnaire



This publication is printed on re-cycled paper.

September 1992

Read this first !

Thank you for agreeing to complete this questionnaire. Although it is of somewhat daunting size, much of the length is taken up with checklists and multi-choice questions. The purpose of this is to ensure a standardised response which will make the job of analysis both simpler and more reliable.

Some of the questions will require a significant amount of work on your behalf to be able to fully answer them. We have attempted to make the task easier by including help notes and worked examples where possible. You will still need to collect the information relating to your own organisation but in many cases, estimates and averages are acceptable providing you can keep within the right order of magnitude!

Some of the questions, especially numbers 11 and 12 have many parts and appear complicated because they are laid out as a matrix. This is because we are giving the space for multiple answers eg. details of several taxon datasets in question 11. We have provided as many columns for answers as space would allow but this may not be enough for your purposes. **Please look at each question before filling it in and decide whether you should photocopy spare pages or request supplemental pages from CCBP to meet your specific needs.**

At several points in the questionnaire, there are supplemental requests for copies of supporting documentation such as operating policies, record cards or published accounts of projects. These documents are particularly important as one of the objectives of the CCBP Programme is to synthesise current best practice and promote the establishment of achievable standards across the range of biological recording activities. Your contributions will help ensure that any proposals arising from the Programme are made on the best informed basis.

It may be helpful for you to collect together the requested documentation prior to filling in the questionnaire and a list of items is given below:

- Copy of formal data exchange agreement (Q6.3)
- Aims and objectives of your biological recording activities (Q7.1)
- General code of practice for data management (Q7.2)
- Policy on data collection and collation (Q7.3)
- Policy on data validation (Q7.3)
- Policy on access to data (Q7.3)
- Policy on security of data (Q7.3)
- Policy on charging for information and services (Q7.3)
- Policy on publication and dissemination of data (Q7.3)
- Any other written or published codes of practice (Q7.3)
- Staff structure (Q9.2)
- Custom designed or modified record cards (Q10.1)
- Details of customised taxonomic coding systems used (Q11.17)
- Written or published specification of computer facilities (Q15.1)
- Policy on computer hardware purchase and use (large organisations) (Q15.2)
- Written or published specification of database use (Q16)
- Written or published account of map-based applications (Q17)
- Written or published account of GIS applications (Q18)

Co-ordinating Commission for Biological Recording

CCBR: Registered Charity (UK) 1012739

TO ALL RESPONDENTS TO THE CCBR QUESTIONNAIRE ON BIOLOGICAL RECORDING

I hope very much that you will respond to this questionnaire. Let me say straight away that you should not be put off by its bulk - very often you may only need to supply one or two ticks per page!

The reason it is so bulky is that we are seeking information from a far wider range of organisations than have ever been involved before, ranging from large governmental agencies like NERC and voluntary bodies like RSPB, to holders of small collections of data. Because the holdings and facilities differ so greatly we have had to devise a form which can cover the largest to the smallest record holder. But be in no doubt, **every record holder's response is valuable to us regardless of size.**

Why are we seeking to collect this information?

We were established at a meeting arranged by NERC to discuss action to be taken on the recommendations in the Linnean Society's report, *Biological Recording: Need and Network*. This project is being supported in full by the Department of the Environment, the Joint Nature Conservation Committee, the Natural Environment Research Council and other national bodies. Our task is to recommend what is required to establish a nationally agreed, coordinated, computerised system for biological recording and to propose an organisation to ensure its continued effective maintenance thereafter. But, first we needed to discover the actual extent of the current biological recording effort throughout the country - hence this questionnaire. Please help us by responding to and returning the form promptly.

Next - **if you need help**. We have interleaved the questionnaire with notes designed to help you to make your return as easily as possible. But we may not always have achieved this and your situation may not be one we had envisaged: **So you may need help to complete the form satisfactorily. If so please get in touch with :-**

Charles Copp
Telephone : 0275 874128

Lastly, this is as much your project as ours. We therefore intend to supply every respondent who completes and returns the questionnaire with a summary report on its findings. Of course, if you want a copy of the full report that will be available but it would have to be purchased.

Good Luck and Thank You



Sir John Burnett
Chairman CCBR

Section A : Organisation Details

Question 1: Contact details

1.1 Contact Details

The name of the organisation required is that of the immediate organisation, branch or unit responsible for the particular activities described in this questionnaire (biological records collection, management or use). In the case of units or sections within an organisational hierarchy there is opportunity in question 1.2 to express these relationships.

More than one telephone number, extension number, Fax and Email address may be entered if appropriate.

The contact name should be the person responsible for completing this questionnaire or the person to whom enquiries about the organisation and its activities should be directed.

The contact position is the role of the contact within the organisation.

1.2 Name of host institution

Describe the relation of the organisation to its 'host' or parent institutions. For instance if several boxes have been ticked in 2.1 explain how they relate. Applies also to specific units in large organisations such as NERC.

Question 2: Type of organisation responsible for biological data collection or management

2.1 Tick as many boxes as are relevant to the type of organisation eg. a local records centre may also be in a museum and part of a county/regional authority department.

SECTION A : ORGANISATION DETAILS

1 : Contact details

Name of Organisation :

Full Postal Address :

Post Code :

Telephone Number :

Extension Numbers :

Fax Number :

Email

Contact Name:

Contact Position:

Address if different from above:

1.2 Name of host institution (where applicable).

Enter all 'parents' if in a hierarchy (eg. BRC < ITE < NERC).

2: Type of organisation responsible for biological data collection or management

2.1 Tick one or more options.

- Statutory Nature Conservation Agency
- Countryside Commission
- DOE Department/Section
- MAFF Department/Section
- Other Government department
- National Park Authority
- NRA (Region)
- Research Council Institute/Unit
- County/Regional Authority Department
- District Authority Department
- National Nongovernmental Conservation Agency
- County Wildlife Trust
- Urban Wildlife Group
- Museum
- Local Records Centre
- National Recording Scheme
- National Biological/Natural History Society
- County Recording Scheme/Natural History Society
- Regional Recording Scheme/Natural History Society
- County Recording Scheme/Natural History Society
- Educational Establishment
- Utility Company
- Environmental Consultancy
- Other (specify)

Question 3: Official status

3.1 Status of organisation

One or more options in the list may apply to the organisation. It is of particular interest to know of those biological recording organisations that have become charitable trusts and/or limited companies and the dates when they took this step.

3.2 When did the biological recording function of your organisation begin?

Refers to the organisation described in 1.1 not its 'parents'. If you are completing the questionnaire for a local records centre based in a museum, enter the date when the records centre started to compile biological records as a separate activity, not the date when the museum began to store specimens, unless there is no logical break.

3.3 When was the biological recording function of your organisation formalised?

The year in which the biological recording function of the organisation was **formally adopted**. Many organisations have compiled biological records as an unofficial extension to staff members' duties and only later had this role written into policy statements and job descriptions.

3.4 Status of local/regional records centre

Enter a brief description of the organisation's official status in relation to its 'parent' body.

Question 4: Geographic coverage

4.1 What geographic area does your organisation cover?

It may be necessary to tick more than one option; for instance, a centre may cover an administrative county for some purposes and biological vice-counties for other purposes.

4.2 Level of coverage

Coverage limited to a set of sites with agreed and mapped boundaries may be relevant to organisations recording from their land-holdings or special interest sites eg. woodlands.

Geographic coverage of the whole area implies an interest in the wider countryside in addition to special sites.

3: Official status

3.1 Status of organisation (give dates if different from 3.2)

Tick one or more options

- Charitable trust
- Limited company
- Local Authority
- National Statutory Body
- Membership Society
- Other - specify

3.2 When did the biological recording function of your organisation begin?

3.3 When was the biological recording function of your organisation formalised?

3.4 If your organisation is a Local or Regional Records Centre, briefly summarise its status in relation to the host institution. (eg. recognised by council minute or unofficial extension to curator's duties).

.....
.....

4: Geographic coverage

4.1 What geographic area does your organisation cover?

Tick the level appropriate to your organisation and enter names where relevant.

- Area larger than UK (specify)
- UK
- England
- Scotland
- Wales
- Northern Ireland
- Isle of Man
- Channel Islands
- Republic of Ireland
- County / Scottish Region (specify)
- District or equivalent (specify)
- Biological Vice-county (specify)
- National Park (specify)
- Urban Areas (specify)
- Environmentally Sensitive Area (specify)
- Other (specify)

4.2 Level of coverage

Tick one option

- coverage limited to a set of sites with agreed and mapped boundaries
- geographic coverage of the whole area above

Question 5: Scope of data collection and use

5.1 Principal scope of data collection

Tick as many boxes as are relevant to the data collected or used by the organisation. The top row of the chart covers the alternative forms of recording on a geographic, habitat or species basis with the option of 'all' or 'selected' for each type. The left hand column covers the principle 'environments' or interests which the recording may cover.

Whole area or selected sites: Are data collected for all areas of this type or only for selected geographic areas or special sites?

All habitats or selected habitats: Are data collected for all habitats that occur in the listed areas or only for selected special interests eg. woodlands.

All taxa or selected taxa: Are data collected for all animal and plant groups or only for selected groups or species?

Example:

Scope of data collection:	whole area	selected sites	all habitats	selected habitats	all taxa	selected taxa
Agricultural land	✓			✓		✓
Forestry land		✓		✓		✓
Urban and amenity areas		✓		✓		✓
Semi-natural terrestrial habitats	✓				✓	
Freshwater environments		✓				✓
Marine environments	—	—	—	—	—	—

5.2 Principal data applications within your organisation

What are the principal uses of biological records in **your** organisation. The uses made of the data by other organisations are not dealt with here.

Where there is more than one use rank them from 1 onwards where 1 is the principal use. If uses are equally important give, them equal ranking.

5: Scope of data collection and use

5.1 Principal scope of data collection.

Tick the appropriate options

Scope of data collection	whole area	selected sites	all habitats	selected habitats	all taxa	selected taxa
Agricultural land						
Forestry land						
Urban and amenity areas						
Semi-natural terrestrial habitats						
Freshwater environments						
Marine environments						

5.2 Principal purposes for which the data are collected and used within your organisation

Tick one or more options.

If more than one option is ticked rank in order of priority (Number in Boxes)

Use the same number if equal priority

- | Tick | Priority Ranking (Number) |
|-----------------------------------------------------------------|---------------------------|
| <input type="checkbox"/> Wildlife and Environmental Legislation | <input type="checkbox"/> |
| <input type="checkbox"/> Habitat Conservation | <input type="checkbox"/> |
| <input type="checkbox"/> Site Conservation | <input type="checkbox"/> |
| <input type="checkbox"/> Species Conservation | <input type="checkbox"/> |
| <input type="checkbox"/> Development Planning | <input type="checkbox"/> |
| <input type="checkbox"/> Ecological Research | <input type="checkbox"/> |
| <input type="checkbox"/> Pollution Control and Monitoring | <input type="checkbox"/> |
| <input type="checkbox"/> Countryside Access | <input type="checkbox"/> |
| <input type="checkbox"/> Agriculture and Forestry | <input type="checkbox"/> |
| <input type="checkbox"/> Water Resources | <input type="checkbox"/> |
| <input type="checkbox"/> Heritage | <input type="checkbox"/> |
| <input type="checkbox"/> Biogeography | <input type="checkbox"/> |
| <input type="checkbox"/> Dissemination to Users | <input type="checkbox"/> |
| <input type="checkbox"/> Other (specify) | <input type="checkbox"/> |

Question 6: Data Exchange Agreements

6.1 This question is concerned with the flow of biological information at the local, regional and national scales and between these different levels. Please identify the organisations to whom you provide data and from whom you receive data (in any form) on a regular basis, indicating, in each case:

Frequency:

The frequency of data exchange between the organisation and other organisations. For frequency enter the best description that describes the situation during the last three years. Typical answers might be, annual updates, monthly, weekly, daily, up to 3 times per year.

Amount:

Amount is the number of individually processed items of data (eg. site or species records) that change hands in any one year. Approximations may be used. Base your figures on the last three years of activity but enter the amount of data exchanged in one year. If amounts are subject to considerable variation give a range.

	Data Provided		Data Received		
	Tick	frequency	annual amount	frequency	annual amount
Joint Nature Conservation Committee (JNCC etc.)	✓	annual update	1.5 million records		
Country Statutory Nature Conservation Agency					
Regional Unit of above	✓	2-3 times per yr	large reports	1-2 times yr	new site reports (c. 10)
County Wildlife Trust	✓	annual update	all new records	annual update	all new records
National Trust / National Trust for Scotland					
Other National Voluntary Conservation Agency					
Local Authority Planning Department	✓	25-30 times yr	30-40 site reports		
Local Records Centre					
Museum					
Biological Records Centre (London Wood)					
British Trust for Ornithology					
Independent Research Organisation					
Educational Establishments					
National Recording Scheme	✓	annual updates	10,000 records		
Individual Recordors	✓			annual	c. 30,000 records
N.R.A Region	✓	1-2 times yr	small reports		
Utility Company					
In-house Staff	✓			daily	20,000 records yr
Contract Staff					
International Biological Society					
National Biological Society					
Local Biological Society	✓	annual updates	c. 10,000 records		
Outside U.K. Agency					
Exchange of data & data with govt. agencies					
Other Organisations (specify if appropriate)	✓	20 times yr	20 site reports	2-3 times yr	details of c. 20 sites
Other Organisations (specify)					

6: Data exchange agreements

6.1 To whom do you provide data and from whom do you receive data (in any form) on a regular basis?

Tick one or more options and fill in boxes for frequency and amount.

	Tick	Data Provided		Data Received	
		frequency	annual amount	frequency	annual amount
Joint Nature Conservation Committee (ISR etc.)					
Country Statutory Nature Conservation Agency					
Regional Unit of above					
County Wildlife Trust					
National Trust / National Trust for Scotland					
Other National Voluntary Conservation Agency					
Local Authority Planning Department					
Local Records Centre					
Museum					
Biological Records Centre (Monks Wood)					
British Trust for Ornithology					
Independent Research Organisation					
Educational Establishments					
National Recording Scheme					
Individual Recorders					
N.R.A Region					
Utility Company					
In-house Staff					
Contract Staff					
International Biological Society					
National Biological Society					
Local Biological Society					
Outside U.K. Agency					
Exchange of stats & data with govt. agencies					
Other Organisations (specify)					
Other Organisations (specify)					

Question 6: Data exchange agreements continued

6.2 Media and methods by which you supply information

Tick only those options which you actually use rather than those which you have the potential to use.

- * Refers to making direct copies of the data held by the organisation with no further interpretation.
- ** Refers to the provision of sifted or interpreted data.

6.3 Is there a formal local data exchange agreement?

In some areas, principal collectors and users of biological records have formed local panels or networks to ensure co-operation and the best use of resources.

If such an arrangement, involving your organisation has been formalised by means of a written statement of aims and objectives please return a copy with this questionnaire or briefly describe local arrangements for the coordination of data exchange.

Question 7: Operating policies

The CCBR seeks to promote the dissemination of codes of practice and standards for the collection and management of biological records.

Any information that can be provided which describes the objectives and working practice of your organisation will therefore be valuable in assessing the current situation.

7.1 Is there an official statement of the aims and objectives of your biological recording activities?

If there is not a formal statement of the aims and objectives of the organisation please provide any other written summary or guidelines (eg. a published information leaflet.) available.

7.2 Is there a general code of practice for data management?

If there is not a written statement of your general code of practice for data management please provide a summary.

7.3 Written policies

Written policies include informal notes for staff guidance as well as formally published codes of practice.

6.2 Media and format by which you supply information:

Tick one or more options

- Photo-copies, hand-written or typed copies of files or cards *
- Paper copies in a format other than as stored by your organisation **
- In map format
- On microfiche or film
- On floppy disk
- On magnetic tape
- Electronically over a computer network

6.3 Are there formal agreements for the exchange of data?

- Yes Please enclose a copy of the relevant documents with this return.
- No If not formal what arrangements do you have? Answer below.

.....
.....
.....

7: Operating policies

7.1 Do you have an official statement of the aims and objectives of your biological recording activities.

- Yes Please enclose a copy of the document with this return
- No

7.2 Do you have a general code of practice for data management?

- Yes Please supply details
- No

7.3 Do you have written policies on any of the following ? :

Tick one or more options

- Data collection & collation
- Data validation
- Access to data
- Security of computerised or manual data files
- Charging for information or services
- Publication and dissemination of data
- Other - (specify)

*If you have ticked any of the above please enclose a copy of the document with this return.
If you do not have written policies, please send a summary of your code of practice.*

Question 8: Services and use of information

It is probable that a substantial proportion of all biological records at present are never used other than for their original purpose and may never become available outside the collecting organisation. The CCBR wishes to establish the degree to which greater use could be made of the existing data resource.

8.1 Primary users of your data

This question seeks to differentiate those organisations which collect and manage data principally for their own use from those which are service agencies to other organisations and which supply data in raw or interpreted form.

Percentage of use refers to who uses the data extracted from files. For instance, 80% of the data provided by a local record centre may be for use by outside organisations, 10% might be used by the parent organisation and 10% for immediate use such as publishing atlases. Try to make your answer add up to 100%. This is not asking what percentage of your data is used.

8.2 External use of data

If you wish to impose certain conditions on the use of data, please indicate these here. If data are not at present used by outside organisations please state the reasons eg. all data are confidential, or no requests.

8.3 Conditions of access

Briefly describe the conditions that you might wish to apply to external access to your data eg. summary data only, no access to confidential records or special arrangements with special classes of user.

8: Services and use of information

8.1 Primary users of your data

Tick one or more options and give percentages (the three options should add up to 100%)

Tick		Percentage of use
<input type="checkbox"/>	By your immediate organisation	<input type="text"/>
<input type="checkbox"/>	By your parent organisation	<input type="text"/>
<input type="checkbox"/>	By other organisations	<input type="text"/>

8.2 If there is at present little or no external use of your data, are you willing/able to make them available to outside users?

- Yes Go to 8.3
- No State reasons below.

.....
.....
.....

8.3 What conditions might apply to external access to your data

.....
.....
.....

Question 8: Services and use of information continued

8.4 Funding for the provision of different types of information provided

This is probably the most difficult question in the questionnaire! The question seeks to establish how the provision of data and services is funded in various organisations. One of the main interests is what services actually pay for themselves.

The left-hand column lists the principle ways that data may be used or provided by an organisation. Pick those that are relevant to your own organisation and then use the boxes across to indicate where the funding comes from to provide these services.

For each category of service in the left hand column there are seven columns reflecting different funding methods. The total across these columns across should add up to 100% for any individual service. Figures should be based on the most recent available or averaged over the last three years. Where detailed figures are not available, approximations are acceptable.

Where an activity is funded principally from income derived from another activity, use the 'other' column and specify the source (eg. an organisation's educational activities might be 50% funded by income from commissioned biological survey work).

Example:

Means of funding:	core funding	direct charge	grant-aid	donations	publications	other sales	other
Raw data	75	25					
Summarised data	75	25					
Interpreted data		100					
Conservation advice		100					
Management plans/advice							
Habitat creation advice							
Scanning planning applications	25	50	25				
Survey							
Monitoring							
Educational			50		50		
Public Information (including publications)	75	25					
Access (eg. volunteers and users)	100						
Training							
Other (specify)							

8.4 Funding for the provision of different types of information provided

This chart is an attempt to establish how you fund the various 'data' services you may provide. Select those services you provide in the left-hand column and enter the % funding from any of the relevant sources listed across the top row. (See example opposite)

Means of funding:	core funding	direct charge	grant-aid	donations	publications	other sales	other
Raw data							
Summarised data							
Interpreted data							
Conservation advice							
Management plans/advice							
Habitat creation advice							
Scanning planning applications							
Survey							
Monitoring							
Educational							
Public Information (including publications)							
Access (eg. volunteers and users)							
Training							
Other (specify)							

Question 9: Resources

All figures provided in this section will be treated in **confidence** and individual organisations will not be identified in the published report except for national organisations where the information is already in the public domain.

9.1 Gross annual budget

In the first column enter figures for 1991/1992 financial year.

In the second column give estimates for the 1992/1993 financial year.

Figures for computing hardware and software are intended to provide an indication of current investment in electronic data processing in relation to present and future needs.

Enter brief explanatory comments after the figures if they need clarification.

9: Resources

9.1 Gross annual budget for the biological recording function of your organisation

Answer the following with respect to the 1991/1992 financial year and your estimates for the 1992/1993 financial year

All answers will be treated in confidence

Expenditure	1991/1992	1992/1993	Comments
Permanent staff (including NI)	£	£	
Temporary staff (including NI)	£	£	
Computer hardware & software	£	£	
Consumables	£	£	
Overheads (if known)	£	£	
Income			
Core funding from parent body/host institution	£	£	
Core funding from membership fees	£	£	
External grant income (specify main sources)	£	£	
Sales of publications	£	£	
Sales of other goods	£	£	
Contracted work (eg. commissioned surveys)	£	£	
Services (eg. provision of data)	£	£	
Donations	£	£	
Bequests	£	£	
Other (specify)	£	£	

Question 9: Resources continued

9.2 Staffing figures

Answer in full-time equivalents (eg. 2, 1, 0.5)

The columns across refer to the **principal** work areas of staff concerned. It is understood that managers may undertake some field work and field recorders may undertake some data entry. **Mixed (professional)** refers to staff employed with no single principal role eg. local records centre assistant engaged in all aspects of data collection and management.

In the left hand column, **contract staff** also refers to government sponsored training projects.

9.3 Other staff services

Services available within the wider organisation eg. from the host or parent organisation of a records centre or specialist unit of a research council. Tick only those services actually used and add any supporting comments where clarification is necessary.

9.2 Staffing figures

Staffing figures required are those for the biological recording and records management function/section of your organisation. Enter the number of staff and their roles in 1991/1992

Please provide a copy of the relevant staff structure if available.

Enter the number of staff in each category

	managerial	mixed (professional)	field workers	clerical	data entry	computer support	financial
Permanent staff full time							
Permanent staff part-time							
Contract staff full-time							
Contract staff part-time							
Voluntary full-time							
Voluntary part-time							

9.3 Access to staff services outside biological records function (eg. elsewhere in the organisation).

Tick one or more options

- Managerial
- Financial
- Computing support
- Clerical
- Data entry
- Other (specify)

Section B : Data Holdings

Question 10: Recording and storage media

10.1 Record cards used for biological records

Do not send copies of standard cards, but state which ones you use in section 10.2

10.2 Standard record cards

Give details of any standard purchased record forms and cards used

10.3 Electronic data recording media

Covers both field data capture and office high speed data capture devices including scanners.

10.4 Data storage and management

Tick the formats of data storage and management used and add any qualifying notes eg. indicating which are the most frequently used or most useful.

Section B: Data Holdings

10: Recording and storage media

10.1 Record cards used for biological records

- Standard (off-the-shelf) record cards (eg. MDA, BRC, NCC). *List cards used in 10.2*
- Modified versions of standard cards *Please provide examples*
- Custom designed cards, only available in your organisation *Please provide examples*

10.2 Standard record cards

Give details of standard, purchased forms and cards used (eg. MDA, BRC, NCC)

.....

.....

.....

10.3 Electronic data recording media

If you use electronic recording media such as hand-held computers for field data capture or optical character recognition (OCR), give brief details below.

.....

.....

10.4 Data Storage and Management - How are your data stored?

Tick one or more options

- Manually - by site
- Manually - by taxon
- On computer - relational database (eg. Recorder)
- On computer - site-based records only
- On computer - taxa-based records only
- Other (specify)

Question 11: Species data

If the organisation does not hold datasets which are directly concerned with information on species go to Question 12.

Read these notes!

This question is designed to assess regional and national coverage of taxa, together with details of format and validation of the records.

The question is specifically designed to extract information about the extent and quality of species records and the degree of coverage of different taxonomic groups. This means that extensive species records held in, but extractable from site or habitat files may also be entered here. Question 12 also asks questions about any species records related to site, land-use and habitat files but only covers whether such records are present and how they have been validated.

Please, select taxa or groupings from the **following checklist** and enter the code at the head of the same column for each continuing sheet. Note that the checklist is only loosely taxonomic, in that numerous common recording 'target groups' (eg. nesting birds) are included and taxonomic groups with few members (or recorders!) may be omitted. If you cannot find a choice that suits your requirement (eg. a single species survey) then enter the taxon in full at the head of the column.

If there are records for the same taxon group kept in very different formats or of substantially different quality (eg. a common butterfly survey carried out by the public and a detailed butterfly dataset contributed by expert recorders), treat them separately.

There are 20 parts to question 11: Answer each part (as appropriate) for each taxonomic grouping.

There is room on the form for details of 12 datasets. If you will need more space than this please **photocopy spare sheets from the booklet before you start filling the sheets in.**

Checklist of Taxa Codes For Question 11

ANIMAL KINGDOM

<i>Invertebrates</i>	INVER
<i>Marine Invertebrates</i>	MAVER
<i>Terrestrial Invertebrates</i>	TEINV
<i>Freshwater Invertebrates</i>	FWINV
<i>Vertebrates</i>	VERTE

PROTOZOA - Unicells PROTO

PORIFERA - Sponges PORIF

CNIDARIA - Coelenterates COELE

CTENOPHORA - Comb Jellies CTENO

PLATYHELMINTHES - Flatworms PLATY

Parasitic Flukes & Tapeworms FLUKE
Flatworms FLATW

ASCHELMINTHES - Round Worms etc. ASCHE

Rotifera - Rotifers ROTIF
Nematoda - Round Worms NEMAT

ANNELIDA - Segmented Worms ANNEL

Polychaeta - Marine Worms POLYC
Oligochaeta - Earthworms etc. OLIGC
Hirudinea - Leeches HIRUD

ARTHROPODA - Arthropods ARTHR

Chelicerata - Arachnida - Arachnids ARACH
Spiders & Harvestmen ARACH

Pseudoscorpiones - False Scorpion PSEUD
Opiliones - Harvestmen OPILI
Araneae - Spiders SPIDS
Acari - Ticks & Mites ACARI

Crustacea - Crustaceans CRUST
Branchiopoda - Fairy Shrimps etc BRANC
Cladocera - Water Fleas CLAD
Ostracoda - Ostracods OSTRA
Copepoda - Copepods COPEP
Branchiura - Fish Lice BRIUR
Cirripeda - Barnacles CIRRP
Malacostraca - crabs etc. MALAC
Isopoda - Woodlice etc. ISOPO
Amphipoda - Sandhoppers, etc AMPHD
Decapoda - Shrimps, crabs etc. DECAP

Diplopoda - Millipedes MILLI
Chilopoda - Centipedes CHILO

Insecta - Insects PESTS
Pest insects

Thysanura - Bristletails THYSA
Diplura DIPLU
Protura PROTU
Collembola - Springtails COLLM
Ephemeroptera - Mayflies EPHEM
Odonata - Dragonflies & Damselflies ODONA
Plecoptera - Stoneflies PLECO
Orthoptera - Grasshoppers & Crickets ORTHO
Dermaptera - Earwigs DERMA

Dictyoptera - Cockroaches DICTY
Psocoptera - Booklice PSOCO
Mallophaga - Biting Lice MALLO
Siphunculata - Sucking Lice SIPHU
Hemiptera - Bugs HEMIP
Homoptera - Froghoppers, Aphids HOMOP
Froghoppers AUICHE
Aphids APHID
Heteroptera - True Bugs HETER
Thysanoptera - Thrips THYSA
Neuroptera & related orders NEURO
Coleoptera - Beetles COLEO
Carabidae - Ground beetles CARAB
Ladybirds LADYB
Diptera - True flies FLIES
Hoverflies HOVER
Siphonaptera - Fleas FLEAS
Lepidoptera - Butterflies & Moths LEPID
Butterflies BUTTS
Micro Moths MICRO
Macro Moths MACRO
Migrant Lepidoptera MLEPS
Trichoptera - Caddis flies TRICH
Hymenoptera HYMEN
Aculeata - Bees, wasps, ants ACULE
Parasitica - Parasitic wasps PARAS
Symphyta - Sawflies SYMPT

TARDIGRADA - Water Bears TARDI

MOLLUSCA MOLLU

Marine Mollusca MMOLL
Non-marine Mollusca NMOLL
Slugs SLUGS

Gastropoda - Gastropods GASTR
Prosobranchia PROSO
Opisthobranchia OPIST
Pulmonata - Land & FW Snails PULMO
Bivalvia - lamelibranchs BIVAL
Cephalopoda - octopi, cuttlefish etc. CEPHA

BRACHIOPODA - Brachiopods BRACH

POLYZOA - Bryozoans, Moss Animals POLYZ

ECHINODERMATA - Echinoderms ECHIN

Crinoidea - Feather Stars CRINO
Holothurioidea - Sea Cucumbers HOLTH
Echinoidea - Sea Urchins ECHIO
Asteroidea - Starfish ASTER
Ophiuroidea - Brittle Stars OPHIU

CHORDATA (Hemichordata) HEMCH

CHORDATA (Urochordata) - Tunicates TUNIC

CHORDATA (Cephalochordata) CEPCH

CHORDATA (Vertebrata = Craniata) VERTE

Marine Vertebrates MAVRT
Freshwater Vertebrates FWVRT
Vertebrates VERTE

Agnatha - Lampreys & Hags AGNAT

Chondrichthyes - cartilaginous fish	CHOND
Pisces (= Osteichthyes) - Bony Fish	PISCE
<i>Game fish</i>	GFISH
<i>Coarse fish</i>	CFISH
<i>Freshwater fish</i>	FFISH
<i>Marine fish</i>	MFISH
<i>Salmoniformes - Salmonid fish</i>	SALMO
<i>Anguilliformes - Eels</i>	ANGUI
Amphibia - <i>Amphibians</i>	AMPHI
<i>Caudata - Newts & Salamanders</i>	NEWTS
<i>Salientia (= Anura) - Frogs & Toads</i>	FROTD
Reptilia - <i>Reptiles</i>	REPTI
<i>Testudines - Tortoises & terrapins</i>	TESTU
<i>Squamata (Sauria) - Lizards</i>	LIZAR
<i>Squamata (Serpentes) - Snakes</i>	SNAKE
Aves - <i>Birds</i>	
<i>Birds of Prey</i>	BPREY
<i>Wildfowl & Waders</i>	WILWA
<i>Gulls</i>	GULLS
<i>Seabirds</i>	SEABI
<i>Nesting Birds</i>	NESBI
<i>Wintering Birds</i>	WBIRD
<i>Rare Birds</i>	RBIRD
<i>Bird ringing records</i>	BRING
<i>For single species surveys enter species</i>	
Mammalia - <i>Mammals</i>	MAMMS
<i>Small mammals</i>	SMMAM
<i>Marine mammals</i>	MAMAM
<i>Insectivora - Insectivores</i>	INSVO
<i>Erinaceidae - Hedgehog</i>	HEDGE
<i>Soricidae - Shrews</i>	SHREW
<i>Chiroptera - Bats</i>	CHIRO
<i>Lagomorpha - Rabbits & Hares</i>	LAGOM
<i>Rodentia - Rodents</i>	RODEN
<i>Sciuridae - Squirrels</i>	SCIUR
<i>Cricetidae - Voles</i>	VOLES
<i>Cetacea - Whales</i>	CETAC
<i>Carnivora - Carnivores</i>	CARNI
<i>Canidae - Fox</i>	CANID
<i>Mustelidae - Mustelids</i>	MUSTE
<i>Otter</i>	OTTER
<i>Badger</i>	BADGR
<i>Stoats & Weasels</i>	STOAT
<i>Wildcat</i>	FELID
<i>Pinnipedia - Seals</i>	SEALS
<i>Feral Sheep & Goats</i>	SHEEP
<i>Cervidae - Deer</i>	CERVI

MYXOMYCOTA - <i>Slime Moulds</i>	MYXOM
EUMYCOTA - <i>Fungi</i>	
<i>Fungi all types</i>	FUNGI
<i>Lichens</i>	LICHS
<i>Mastigomycotina</i>	MASTI

Zygomycotina	ZYGOM
Ascomycotina	ASCOM
Basidiomycotina	BASID
<i>Mushrooms, Toadstools & Puffballs</i>	MUSHM
<i>Rusts & Smuts</i>	RUSTS
<i>Deuteromycotina</i>	DEUTO

PLANT KINGDOM	PLANT
Algae & unicells	ALGAE
<i>Marine Algae & Seaweeds</i>	SWEED
<i>Freshwater Algae</i>	FWALG
<i>Terrestrial Algae</i>	TRALG
CYANOPHYTA - <i>Blue-green Algae</i>	CYANO
RHODOPHYTA - <i>Red Algae</i>	RHODO
CHRYSOPHYTA	CHRYS
PYRROPHYTA	PYRRO
PHAEOPHYTA - <i>Seaweeds</i>	PHAEO
EUGLENOPHYTA - <i>Green Unicells</i>	EUGLE
CHLOROPHYTA - <i>Green Algae</i>	CHLOR
<i>Charophyta - Stoneworts</i>	SWORT
BRYOPHYTA - <i>Mosses & Liverworts</i>	BROPH
<i>Hepaticae - Liverworts</i>	LIVER
<i>Bryopsida (Musci) - Mosses</i>	MUSCI
<i>Sphagnum</i>	SPHAG
TRACHAEOPHYTA	TRACH
- <i>Flowering Plants & Ferns</i>	
PTERIDOPHYTA	PTERI
- <i>Ferns, Horsetails & Club Mosses</i>	
<i>Lycopsidea - Club Mosses</i>	CMOSS
<i>Sphenopsida - Horsetails</i>	HTAIL
<i>Filicopsida - Ferns</i>	FERNS
SPERMATOPHYTA - <i>Seed-bearing plants</i>	SPERM
<i>Conifers & Angiosperms</i>	SPERM
SPERMATOPHYTA (Gymnospermae) -	CONIF
<i>Conifers</i>	CONIF
SPERMATOPHYTA (Angiospermae)	ANGIO
<i>Flowering plants</i>	ANGIO
<i>Critical Groups (Please specify)</i>	CRITC
<i>Dicotyledones - Dicots</i>	DICOT
<i>Trees & Shrubs</i>	TREES
<i>Monocotyledones - Monocots</i>	MONOC
<i>Grasses, Rushes & Sedges</i>	GRASS
<i>Orchids</i>	ORCHD

Question 11: Species Data

[Worked example]

Taxa Codes:	Code
11.1 Coverage of taxon Answer: All) or Site(s) covered	CHILO A
11.2 Number of species covered (nearest approximation)	49
11.3 Number of records (nearest approximation)	1600
11.4 Dates covered Enter percent of total records for each period (nearest approximation)	
pre-1900	
1900-1939	5%
1940-1969	35%
1970-1980	30%
post-1980	30%
11.5 Status of dataset Answer: (Ongoing or Stable)	O
11.6 Geographic area covered by dataset	Benthic 1600s
11.7 Spatial units used in records Give percentage of dataset for each option	
10 kilometre square	100%
100 metre square (8 sq grid ref)	60%
point (8 sq grid ref)	
100m	
UTM	
site	80%
vice-county	100%
other (specify)	

Taxa Codes:	Code
11.8 Species information collected/extracted tick one or more options	CHILO
presence/absence	<input checked="" type="checkbox"/>
quantitative data	<input checked="" type="checkbox"/>
functional ecological data	<input checked="" type="checkbox"/>
breeding data (productivity)	
phenological data	
physiological data	
species conservation data	
species management data	
other (eg. bibliographic data)	
11.9 Site-related information on species collected/extracted tick one or more options	
associated physical environmental data	<input checked="" type="checkbox"/>
chemical and pollutant data	
site management	
site ownership	
site history	
other	
11.10 Sources of records give percentages for post-1970 records	
statutory nature conservation agencies	
non-governmental conservation agencies	
BRC	10%
national recording schemes (direct)	
in-house staff	25%
emuseum naturalists (direct)	60%
contracted surveys	
publications	10%
museum collections	10%
Government employment schemes	
copy records held under exchange agreement	
other (eg. scientific research progs) specify	

Taxa Codes:	Code
11.11 Identification and taxonomic validation Give percentage of dataset for each option tick one or more options	CHILO
comparison with collection specimens	
local taxonomic authority	
national taxonomic authority	75%
local panel	
routine identification by in-house staff	100%
retention of voucher specimens	2%
other (eg. national panel) specify	
11.12 Geographical validation Give percentages for post-1970 records use of a general gazetteer	100%
check against agreed list of delimited sites	
OS grid references checks	10%
other (specify)	
11.13 Data integrity Tick one or more options	
manual checking of records	<input checked="" type="checkbox"/>
computerised validation of selected fields	<input checked="" type="checkbox"/>
double keyed data entry	
retain original data	<input checked="" type="checkbox"/>
retain voucher specimen	<input checked="" type="checkbox"/>
11.14 Management of records Extent of computerisation	
Give percentages for post-1970 records	
fully computerised records	100%
summary computer records	
manual records only	
manual records entered as archive	100%

Taxa Codes:	Code
11.15 Data accessible by Tick one or more options database - accessible by most fields	CHILO
taxon	<input checked="" type="checkbox"/>
site	<input checked="" type="checkbox"/>
gridded spatial units	<input checked="" type="checkbox"/>
other indices (eg. irregular spatial units)	
11.16 Is an archive of the data maintained in another place? Answer: Y or N	N
11.17 Taxonomic coding system used if any (eg Recorder, BTO)	BRC
11.18 Does the dataset include maps? Answer: Y or N	N
11.19 Does the dataset include photographs? Answer: Y or N	Y
11.20 Does the dataset include satellite images? Answer: Y or N	N

Question 11: Species data continued

Worked examples of the sub-questions of question 11 are given on the previous page.

11.1 Coverage of taxon

Are records collected for all subdivisions of the taxon (families, genera, species) or is recording restricted to certain groups only? Refers to the **data collection policy** not to the actual coverage you have achieved.

11.2 Number of species covered

Enter the number of species for which you have records (estimate if necessary).

11.3 Number of records

Enter the approximate number of individual records in the whole dataset.

11.4 Dates covered

Enter the breakdown of observation dates represented in the dataset as a percentage for each date class given. The total of the 5 date classes must be 100%.

11.5 Status of dataset

Is the dataset still being added to or is it fixed (eg. a one-off survey)?

11.6 Geographic area

Enter the geographic area to which the records refer.

11.7 Spatial units used in records

Enter the percentage of the dataset that can be mapped or analysed at the different spatial resolutions listed. It will be possible, for instance, to derive the 10 kilometre square for every record in a dataset that has a more detailed grid reference, but it might not be possible to derive grid references from large sites. Each option may be up to 100% ie. all records could be point grid references but would also then be referenced to 100 metre, 1 kilometre and 10 kilometre squares.

11: Species data *If your organisation does not hold datasets that are directly or indirectly concerned with information on species go to question 12.*

Select taxa from the checklist supplied and enter the relevant codes at the head of the columns.

Taxa Codes:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:	Code:
11.1 Coverage of taxon Answer A(I) or S(selected species)													
11.2 Number of species covered (nearest approximation)													
11.3 Number of records (nearest approximation)													
11.4 Dates covered Enter percent of total records for each period (nearest approximation)													
pre-1900													
1900-1939													
1940-1969													
1970-1980													
post-1980													
11.5 Status of dataset Answer (O)ngoing or (S)tatic													
11.6 Geographic area covered by dataset													
11.7 Spatial units used in records Give percentage of dataset for each option													
10 kilometre square													
tetrad (2 kilometre square)													
100 metre square (6 fig. grid ref)													
point (6 fig grid ref)													
lat/long													
U.T.M													
site													
vice-county													
other (specify)													

Question 11: Species data continued

11.8 Species information collected or extracted

What information is normally attached to the species record?

Collected refers to field records, **extracted** refers to records derived from published or manuscript sources.

presence/absence - the basic biological record

quantitative data - actual counts of individuals present

functional ecological data - refers to the relationship of the organism to its environment eg. feeding behaviour, territorial behaviour

breeding data (productivity) - information on numbers and viability of offspring, eg. breeding records, nesting surveys.

phenological - eg. life cycles, times of flowering, times of emergence

physiological data - eg. hormone levels

species conservation data - information recorded directly in relation to its conservation

species management data - records of management activities associated with the record. eg. mowing, moving spawn, culling.

bibliographic data - reference to relevant published material.

11.9 Site-related Information on species

Note that Question 12 deals primarily with the details of site-related data, the information required here is simply to indicate the degree of data which might be associated with species records.

Information describing the physical environment of the species when recorded.

associated environmental data - eg. geology, soil, altitude.

chemical and pollutant data - eg. water quality samples

site management - events relating to the physical management of the site.

site ownership - details of ownership and access

site history - background information

11.10 sources of records

The total for all classes of data provider should come to 100%

Statutory nature conservation agencies - eg. English Nature, Joint Nature Conservation Committee.

Non-governmental nature conservation agencies - eg. local wildlife trusts

BRC - the Biological Records Centre at Monks Wood

National recording schemes - information obtained directly from the organisers of national taxa-based recording schemes eg. woodlice records

In-house staff - field recording carried out directly by staff of the organisation. If done as part of staff members personal spare-time activities, use discretion as to whether this is 'official' recording or should be entered under amateur naturalists.

Amateur naturalists (direct) - records directly given by naturalists and not obtained indirectly, for example, through scheme organisers.

Contracted surveys - survey information explicitly paid for by contract whether contract from the organisation to outside individuals or contract from an outside body to the organisation.

Publications - extraction of 'historical' and recent records from published sources.

Museum collections - usually 'historical' data attached to specimens in a museum collection.

Government employment schemes - any field survey or extraction of records carried out by temporary staff on government sponsored schemes eg. YTS, ET, JCP etc.

Copy records held under exchange agreement - copies of records originally collected or collated by another organisation and passed as copies under an exchange or archiving agreement.

Question 11: Species data continued

11.11 Identification and taxonomic validation

How are the identifications and nomenclature used checked before entry into the data storage system? Enter the percentage of total records that are checked in the ways listed.

comparison with collection specimens - including vouchers

local taxonomic authority/ies - eg. county recorder or specialist

national taxonomic authority/ies - eg. BSBI referee

local panel - vetting of records through a local panel eg. for a local flora

routine identification by in-house staff - includes basic checking of records for common mistakes and misspellings.

other eg. national panel - eg. rare bird sightings vetted by British Birds Rarities Committee

11.12 Geographical validation

Enter the percentage of records in the dataset that are checked against the following criteria. Answer only for post 1970 records.

use of a general gazetteer - checking of names and grid references against either published or locally maintained gazetteers

check against list of delineated sites - checks to ensure that attributions of records to sites conform to locally or nationally agreed boundaries for those sites.

OS grid reference checks - includes both checking that grid reference is in the correct format with an acceptable number of digits and also context checks eg. tests against county and vice-county boundaries.

11.13 Data Integrity

Provision for the preservation of the original records and checks to ensure that the data are entered onto manual or computerised storage without accidental alteration. **Answer for current practice.**

Manual checking of records - manually checking data on cards to validate some or all fields

computerised validation of selected fields - if the data are held on computer does the data entry program have validation routines attached to important fields such as grid reference and identification (eg. as in the RECORDER program).

double-keyed data entry - if the data are held on computer does the data entry program allow for duplicate entry of records to ensure accurate transcription?

'archive' original data - where data are extracted from records onto file cards or into a computer database, are the original records retained in a secure place?

retention of voucher specimen - if the identification has been made from collected specimens or is of a member of a critical taxon, is the original material retained?

11.14 Management of records - extent of computerisation

Give percentages of the post 1970 part of the dataset that are managed in the ways given.

fully computerised records - complete transcription of the original paper record into a computerised format

summary computer records - only partial data from the original paper record extracted into computerised format eg. spatial data for mapping purposes.

manual only - records not transcribed into computerised format

retained as a manual system - records that have been computerised, but are still maintained and used in manual form.

Question 11: Species data continued

11.15 Data accessible by:

Tick those options which apply

Data accessible by all or most fields - For instance, where information is held on a database such as RECORDER which provides extensive indexing and search facilities.

taxon - access to species lists whether by taxonomic file or attached to sites and habitat records

site - access to the species data for a site or group of sites

gridded spatial units - ability to extract data in gridded units eg. all bat records for a vice county, 10 kilometre square or distribution by 1 kilometre square.

irregular spatial units - and other indices typically offered by Geographical Information Systems eg. extraction of data points that fall within site boundaries or interactively entered polygons.

11.16 Are the original data or an archive maintained in another place?

How secure are your data from disaster?

11.17 Taxonomic coding system used if any

Taxonomic coding systems are used both for convenient data storage and simplified data validation of computerised biological records. If you know what coding system your application uses enter it here - if you are maintaining the data for this dataset on RECORDER just enter 'R'. If you use a coding system devised in-house please send details.

11.18 Does the dataset include maps?

This refers to individual site maps or site plans kept as part of the records eg. bird territory maps or butterfly breeding areas.

11.19 Does the dataset include photographs?

Are there voucher photographs of species, habitat photographs associated with the species records?

11.20 Does the dataset include satellite images?

Are there satellite or other remotely sensed images maintained as part of this dataset?

Question 12: Habitat-based and land type datasets

If your organisation does not hold site, habitat or land-type datasets go to Question 13.

This question is intended to assess regional and national coverage of habitats and land types together with details of format and validation of the records. The records may be held in site or habitat files but extensive habitat data attached to site or taxonomic files should be included. Select habitats or land survey types from the enclosed checklist and enter the code at the head of the same column for each continuing sheet.

For general surveys such as general woodland surveys use the single number from the checklist (eg. woodland and scrub = 2). If the survey is more specific use one of the sub-codes (eg. semi-natural and ancient woodland would be 2.1). If your survey is not covered by the options given please write the type in full as a note in or near the code box at the top of the relevant column.

There are 20 parts to question 12: Answer each part (as appropriate) for each taxonomic grouping.

There is room on the form for details of 12 datasets. If you will need more space than this please photocopy spare sheets from the booklet before you start filling the sheets in.

Habitat & Land Type Survey Checklist for question 12

1. General Land Use

- 1.1 'NCC' Phase I Survey
- 1.2 Aerial photographic land use survey
- 1.3 Satellite land use/type survey
- 1.4 ITE land class
- 1.5 Landscape value
- 1.6 MAFF agricultural census
- 1.7 Environmentally sensitive area (ESA)
- 1.8 Countryside monitoring

2. Woodland and scrub

- 2.1 semi-natural woodland
- 2.2 plantation woodland
- 2.3 orchard
- 2.4 Scrub

3. Grassland (including meadows)

- 3.1 acidic
- 3.2 neutral
- 3.3 calcareous

4. Heathland & Moorland

- 4.1 upland (= moorland)
- 4.2 lowland

5. Wetland

- 5.1 upland (bogs and mires)
- 5.2 lowland (fen, marsh, bog)

6. Freshwater (& FW marginal)

- 6.1 standing (lakes, gravel pits, reservoirs)
- 6.2 pond
- 6.3 flowing (streams & rivers)
- 6.4 drainage channels (eg rhyne, dyke, lode)
- 6.5 canal

7. Coastal & Estuarine

- 7.1 mudflats
- 7.2 coastal lagoons
- 7.3 saltmarsh
- 7.4 sand dune
- 7.5 rocky shore
- 7.6 sand & mud shores
- 7.7 shingle
- 7.8 intertidal
- 7.8 sub-tidal
- 7.9 maritime cliff

8. Inland Rock

- 8.1 limestone pavement
- 8.2 cave
- 8.3 exposed rock

9. Urban

- 9.1 built environment
- 9.2 greenspace

10. Agricultural

- 10.1 pasture
- 10.2 arable
- 10.3 set-aside

11. Marginal

- 11.1 road verges
- 11.2 hedges
- 11.3 railways
- 11.4 canal banks
- 11.5 rubbish tips

12. Quarries and pits

13. Other

- 13.1 golf courses
- 13.2 gardens

Question 12: Habitat-based and Land Type Datasets

[Worked Example]

Habitat/Land Use Codes:	Code
12.1 Survey/dataset name (if used)	1.2
12.2 Geographic area covered by survey	NCC/SJK 1486 Surrey Berset
12.3 Habitat or land classification	
Tick one or more options	
Corine Biotope	
ITE land classification	
MAFF agricultural classification	
NCC Phase 1 classification	
NVC	
Peterken Woodland Stands	
RVPACS	
RSN/NCC habitat classification	
Shirwell urban classification	
other (specify)	
12.4 Number of records (nearest approximation)	5,000
12.5 Dates covered	
Enter percentage of total records for each period (nearest approximation)	
pre-1900	
1900-1939	
1940-1969	
1970-1980	
post 1980	100%
12.6 Status of dataset	S
Ongoing or static Answer: A or S	

Habitat/Land Use Codes:	Code
12.7 Data collected/extracted	1.2
Tick one or more options	
ownership data	
management data	
historical data	
species data	
target notes	
associated physical data	
chemical and pollutant data	
other (specify)	Frothing
12.8 Survey method	
Tick one or more options	
ground survey	
aerial photographs	
satellite image analysis	
other (specify)	
12.9 Geographical sampling or recording units	
Give percentages of dataset for each option	
10 kilometre square	100%
100 metre square (2 kilometre square)	
1 kilometre square	
100 metre square (6 fig. grid ref.)	
point (6 fig. grid ref.)	
100m	
site	
O.S. land parcel	
administrative boundary (specify)	
other (specify)	

Habitat/Land Use Codes:	Code
12.10 Sources of records	1.2
Give percentages for post 1980 records	
statutory nature conservation agencies	5%
non governmental conservation agencies	
in-house staff	2.5%
amateur naturalists (direct)	
contracted surveys	
Publications	70%
government employment schemes	
copy records held under exchange agreement	
other (specify)	
12.11 Geographical validation	
Give percentages for post 1980 records	
use of a general gazetteer	100%
check with agreed list of delimited sites	100%
grid reference checks	100%
other (specify)	
12.12 Validation of taxa recorded in survey	
Give percentages for post 1980 records	
comparison with collection specimens	5%
local taxonomic authority	
national taxonomic authority	
routine identification by in-house staff	
12.13 Validation of other data recorded in survey	
Tick one or more options	
ground truthing	
local expert/referee	
national expert/referee	
other (specify)	

Habitat/Land Use Codes:	Code
12.14 Management of records	1.2
Give percentage for post 1970 records	
fully computerised records	
summary computer records	100%
manual records only	
manual records retained as archive	100%
12.15 Do the records include photographs	Y
Answer: Y or N	
12.16 Do the records include remotely-sensed images	Y
Answer: Y or N	
12.17 Do the records include maps	Y
Answer: Y or N	
12.18 Data integrity	
Tick one or more options	
computerised validation of selected fields	
double keyed data entry	
retain original data as archive	
12.19 Data accessible by	
Tick one or more options	
database - accessible by most fields	
land classification	
habitat	
taxon	
site	
gridded spatial units	
administrative units	
other indexes (specify)	
12.20 Is the original data or an archive maintained in another place?	
Answer: Y or N	

Question 12: Habitat-based and land type datasets continued

Worked examples of the sub-questions in question 12 are given on the previous page

12.1 Survey/dataset name

Many surveys have either classificatory names eg. Phase II grassland survey, Ancient Woodland Survey or personal names.

12.2 Geographic area

Enter the geographic area to which the records refer

12.3 Habitat or land classification

Tick whichever of the classification systems have been used in collecting or analysing the data.

12.4 Number of records

give the approximate number of individual records in the dataset eg. based on either named sites or identifiable land parcels with associated data. In the case of Phase 1 surveys give land parcels and target notes separately.

12.5 Dates covered

Enter the breakdown of observation dates represented in the dataset as a percentage for each date class given. The total of the 5 date classes must be 100%.

12.6 Status of dataset

Is the dataset still being added to or is it fixed (eg. a one-off survey)?

Question 12: Habitat-based and land type datasets continued

12.7 Data collected/extracted

What data are associated with the 'sites' recorded in the survey?

ownership data - ownership and access

management data - information on the management of the sites or habitats

historical data - information relating to the past development of the site or habitat, old descriptions and species counts.

species data - information on species from habitat surveys and actual counts or frequency/cover estimates for the sites or habitats.

summary target notes - refers to notes made in land use/resource surveys as flags to land parcels worthy of note or further survey.

associated physical data - eg. geology, soils, altitude

chemical and pollutant data - eg. water quality samples, heavy metals

other - eg. ground survey recording of data and ground-truthing as support for remote sensing and aerial photographic surveys

12.8 Survey method

Tick one or more of the options provided;

ground survey - traditional survey techniques

aerial photographs - eg. Phase I style land resource survey from 1:10,000 aerial photographs

satellite image analysis - eg. remotely sensed habitat mapping

other - specify any other survey methods used

12.9 Spatial units

Geographical sampling and recording units used in or extractable from the dataset.

Enter the percentage of the dataset that can be used to generate data at each of the spatial resolutions listed. It will be possible, for instance, to derive the 10 kilometre square for every record in a dataset that has a more detailed grid reference, but it might not be possible to derive grid references from large sites. Each option may be up to 100% ie. all records could be point grid references but would also then be referable to 100 metre, 1 kilometre and 10 kilometre squares.

Question 12: Habitat-based and land type datasets continued

12.10 Sources of records

The total for all classes of data provider should come to 100%
Enter the percentage of the post 1980 dataset derived from each of the sources.

statutory nature conservation agencies - eg. English Nature, Joint Nature Conservation Committee.

non-governmental nature conservation agencies - eg. local wildlife trusts

In-house staff - field recording carried out directly by staff of the organisation. If done as part of staff members personal spare-time activities, use discretion as to whether this is 'official' recording or should be entered under amateur naturalists.

amateur naturalists (direct) - records directly given by naturalists.

contracted surveys - survey information explicitly paid for by contract whether contract from the organisation to outside individuals or contract from an outside body to the organisation.

publications - extraction of 'historical' and recent records from published sources.

government employment schemes - any field survey or extraction of records carried out by temporary staff on government sponsored schemes eg. YTS, ET, JCP etc.

copy records held under exchange agreement - copies of records originally collected or collated by another organisation and passed as copies under an exchange or archiving agreement.

12.11 Geographical validation

Enter the percentage of records in the dataset that are checked against the following criteria. Answer only for post 1980 records.

use of a general gazetteer - checking of names and grid references against either published or locally maintained gazetteers

check against list of delineated sites - checks to ensure that attributions of records to sites conform to locally or nationally agreed boundaries for those sites.

OS grid reference checks - includes both checking that grid reference is in the correct format with an acceptable number of digits and also context checks eg. tests against county and vice-county boundaries.

12.12 Validation of taxa recorded in the survey

How are the identifications and nomenclature used checked before entry into the data storage system?
Note that files with extensive species data should also be recorded under relevant taxonomic headings in Question 11.

Enter the percentage of post 1980 records that are checked in the ways listed.

comparison with collection specimens - including vouchers

local taxonomic authority - eg. County recorder or specialist

national taxonomic authority - eg. BSBi referee

routine identification by in-house staff - includes basic checking of records for common mistakes and misspellings.

12.13 Validation of other data recorded in the survey

Tick the validation methods used to check data prior to or during data entry

ground-truthing - refers to either checking remote sensed predictions by ground survey or repeat visits in land use surveys

local expert/referee - eg. checking of a percentage of survey sites recorded by junior staff by the senior surveyor or local specialist

national expert/referee - eg. corroboration of Phase II survey standards by specialist from English Nature

Question 12: Habitat-based and land type datasets continued

12.14 Management of records

Give percentages of the post 1970 part of the dataset that are managed in the ways given.

fully computerised records - complete transcription of the original paper record into a computerised format

summary computer records - only partial data from the original paper record extracted into computerised format eg. spatial data for mapping purposes.

manual only - records not transcribed into computerised format

retained as a manual system - records that have been computerised, but are still maintained and used in manual form.

12.15 - 12.17 Does the record include photographs, remotely sensed images or maps ?

Including photographs from aerial surveys and habitat or management photographs taken on site and satellite images of land parcels. Answer Y or N for each question.

12.18 Data integrity

Provision for the preservation of the original records and checks to ensure that the data are entered onto manual or computerised storage without accidental alteration.

computerised validation of selected fields - if the data are held on computer does the data entry program have validation routines attached to important fields such as grid reference and identification (eg. as in the RECORDER program).

double-keyed data entry - if the data are held on computer does the data entry program allow for duplicate entry of records to ensure accurate transcription?

archive original data - where data are extracted from records onto file cards or into a computer database, are the original records retained in a secure place?

12.19 Data accessible by:

Tick those options which apply.

Data accessible by all or most fields - For instance, where information is held on a database such as RECORDER which provides extensive indexing and search facilities.

land classification - eg. by ITE land classification, Phase I survey classification or MAFF grading

habitat - ability to extract 'sites' by habitat from one or more classifications

taxon - access to the species lists attached to sites and habitat records

site - access to the data by a site or number

gridded spatial units - ability to extract data in gridded units eg. all heathland for a county by 10 kilometre square or 1 kilometre square.

administrative units - eg. county, district or parish

other - eg. irregular spatial units, typically offered by Geographical Information Systems eg. extraction of data points that fall within site boundaries or interactively entered polygons.

12.20 Are the original data or an archive maintained in another place?

How secure are your data from disaster?

Question 13: Non-biological datasets

13.1 Institutional data holdings

Does your organisation hold environmental information other than biological data? Data may be originally collected by the organisation or may have been obtained from other organisations for use within your organisation or provision to other users.

Tick the appropriate boxes and qualify the entry where relevant eg. a tick in the Geology box may be qualified as 'data held as part of National Scheme for Geological Site Documentation'. Sites and monuments may be 'summary records from County Council'.

13.2 Correlation with biological data

How do you use non-biological data sets in relation to biological records? Tick the appropriate options and add explanation (optional).

13.3 What geographical keys are used to correlate these data with your biological data? eg. site boundaries, grid squares or administrative boundaries.

13: Non-biological datasets

13.1 Do you or your host institution hold data on:
Tick one or more options

- | | |
|--------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Soils | <input type="checkbox"/> Geology |
| <input type="checkbox"/> Protected areas | <input type="checkbox"/> Climate |
| <input type="checkbox"/> Tree preservation orders | <input type="checkbox"/> Footpaths |
| <input type="checkbox"/> Sites and monuments record | <input type="checkbox"/> Scheduled ancient monuments |
| <input type="checkbox"/> Land use | <input type="checkbox"/> Listed buildings |
| <input type="checkbox"/> Water quality | <input type="checkbox"/> Land ownership |
| <input type="checkbox"/> Chemical data | <input type="checkbox"/> Pollution |
| <input type="checkbox"/> Historic landscape or gardens | <input type="checkbox"/> Other (specify) |

13.2 Do you correlate these data with your biological data

Tick one or more options

- | |
|----------------------------------------------------------------------------|
| <input type="checkbox"/> On planning constraint maps |
| <input type="checkbox"/> On other paper maps |
| <input type="checkbox"/> In a computerised geographical Information system |
| <input type="checkbox"/> Other computerised system |
| <input type="checkbox"/> Other (specify) |

13.3 What geographical keys are used to correlate these data with your biological data (eg. site boundary, grid square, parish)

.....

You can write comments in the space below

Section C: Computing Details

The object of the following questions is to establish the existing base of computer facilities and match this to the requirements of potential biological recording, mapping and data transfer applications.

If you are not familiar with the technical terms used in the following questions please refer back to your computer supplier or contact the help-line on the telephone number given on the back page of this questionnaire.

Please look at the question grids before starting to fill them in. If you will need more room, for instance to enter details of the different PCs that you have, **photocopy some spare sheets before you start.**

Question 14: Computing experience

14.1 Are computers used in relation to biological recording activities in your organisation?

If the organisation does not use computers for managing biological records and is not likely to in the near future ignore the rest of Section C (questions 15 - 19).

14.2 Extent of computer use (for all aspects of your biological recording related work)

A simple gauge of the importance of computers in the organisations day-to-day work.

Tick one option from the frequency of use list and one from the extent of computerised records

Question 15: Computer hardware

15.1 Tick those computer facilities in the list that are or may be used by the organisation for managing biological records.

If there is a written or published specification of the computer facilities, please enclose a copy with this return

Section C: Computing Details

14: Computing experience

14.1 Are computers used in relation to biological recording activities in your organisation?

- No *(if No ignore the rest of this and subsequent questions)*
 Yes *(if Yes complete the rest of the questions in this questionnaire)*

14.2 Extent of computer use in relation to biological recording activities (eg. for holding active databases)?

Tick one or more options

a) Frequency of use:

- Minimal
 Infrequent
 Frequent
 Very frequent

b) Extent of computerised records

- Isolated uses
 Important for some aspects
 Fully integrated

15: Computer hardware

Enter details only of those machines to which there is currently or likely to be direct access

If there is a written or published specification of the computer facilities, please enclose a copy with this return.

15.1 Computer facilities used for biological records related activities

Tick one or more options

- Stand-alone personal computer(s)
 Local area network
 Mini or similar multi-user computer
 Mainframe computer
 Outside agency

Question 15: Computer hardware continued

15.2 Stand-alone personal computers and workstations

If the organisation is a large one with a corporate policy on computer hardware, a statement of that policy and an indication of the extent of personal computer facilities will be sufficient.

For smaller organisations eg. county wildlife trusts, local records centres, county planning departments please give full details.

Use one column for all machines of identical or near identical configuration, but if configurations are significantly different eg. two 386 micros, one with a 40 megabyte hard disk and one with a 200 megabyte hard disk, treat them separately.

Example:

Details of single-user machines	1.	
Make and model (eg. Toshiba T3100E, Mac II, Sun, IBM PS2)	BONSAI 9LS	
Processor type & speed (eg. 80386 33 Mhz)	80386 DX	
Hard disk capacity (in megabytes)	120 Mb	
Floppy drives - type & capacity (eg. 3.5" 1.44Mb)	1 x 3.5" 1.44 mb 1 x 5.25" 1.2 mb	
Screen type (eg. mono, colour VGA, gas plasma)	Super VGA	
Amount of RAM (in megabytes)	8 mb	
Other features (eg. math co-processor, tape-drive)	Cd rom	
Operating system and version (eg. MSDos 5, DRDos 6)	DR Dos	
Shell program used, if any (eg. Windows, X-windows)	Windows 3.1	
Number of machines of this type and configuration	1	
When acquired	Dec 91	
Approximate cost	£1,500	
Are they linked to a network	NO	
Communications facilities (eg. modem)	Pocket fax card	

15.2 Details of stand-alone personal computers and workstations

If you do not use standalone machines then go to 15.3

*If you are a network user, also use this section to record any local processing pc's linked to the network.
Information required for each make and configuration of machine (use columns)*

Details of single-user machines	1.	2.	3.	4.
Make and model (eg. Toshiba T3100E, Mac II, Sun, IBM PS2)				
Processor type & speed (eg. 80386 33 Mhz)				
Hard disk capacity (In megabytes)				
Floppy drives - type & capacity (eg. 3.5" 1.44Mb)				
Screen type (eg. mono, colour VGA, gas plasma)				
Amount of RAM (in megabytes)				
Other features (eg. math co-processor, tape-drive)				
Operating system and version (eg. MSDos 5, DRDdos 6)				
Shell program used, if any (eg. Windows, X-windows)				
Number of machines of this type and configuration				
When acquired				
Approximate cost				
Are they linked to a network				
Communications facilities (eg. modem)				

Comments :

.....

.....

Question 15: Computer hardware continued

15.3 Network servers

(Note: Multi-user operating system machines such as most Minis are covered in question 16)

Refers to computer networks where a server is connected to local processing pc's or a mixture of pc's and terminals by means of network cards and software eg. Novell Netware, Banyan Vines, IBM token ring, Sage MainLan.

Give details of the network server computer(s) using a column for each server.

Example:

Details of network servers	1.
Make and Model of server	KOMPAK XL
Processor type & speed (eg. 80486, 33 Mhz)	80486
Amount of RAM (in megabytes)	4 Mb
Hard disk capacity (in megabytes)	320 Mb
Floppy drives - type & capacity	1 x 3.5" 1.44mb
Screen type, if relevant (eg. mono, VGA)	mono
Other features (eg. hard disk mirroring, tape-drive, co-processor)	Tape drive
Operating system and version (eg. MsDos 5, DRDos 6, SCO Unix)	Ms Dos 5.0
Network software and version (eg. Novell Netware vs. 3.1)	Novell vs 3.1
Network type (eg. ethernet, token ring)	ethernet (thin)
Shell program used, if any (eg. Windows)	none
Number of pc's or terminals linked to this machine	8
Is the network linked to a wider area network (eg. bridge to mainframe) Specify	No
Communications facilities (eg. access to Janet, Email)	none

15.3 Details of network servers connected to local processing pc's (local area networks)

Give details of each server (use columns)

Details of network servers	1.	2.	3.	4.
Make and Model of server				
Processor type & speed (eg. 80486, 33 Mhz)				
Amount of RAM (in megabytes)				
Hard disk capacity (in megabytes)				
Floppy drives - type & capacity				
Screen type, if relevant (eg. mono, VGA)				
Other features (eg. hard disk mirroring, tape-drive, co-processor)				
Operating system and version (eg. MsDos 5, DRDos 6, SCO Unix)				
Network software and version (eg. Novell Netware vs. 3.1)				
Network type (eg. ethernet, token ring)				
Shell program used, if any (eg. Windows)				
Number of pc's or terminals linked to this machine				
Is the network linked to a wider area network (eg. bridge to mainframe) Specify				
Communications facilities (eg. access to Janet, Email)				

Comment:

Question 15: Computer hardware continued

15.4 Multi-user systems

Refers to multi-user systems such as 'Mini Computers' where there is a single central processor accessed by several terminals by means of a multi-user operating system such as VAX-VMS, PICK or UNIX.

Give details using a new column for each separate server.

Example:

Details of multi-user machines	1.
Make and model of server	CRIME 2250
Processor type & speed (eg. 80486 33 Mhz)	486 >
Amount of RAM (in megabytes)	16 Mb
Hard disk capacity (in megabytes)	1.5 gigabytes
Floppy drives (type & capacity)	none
Screen type, if relevant (eg. mono, VGA)	mono
Other features (eg. disk mirroring, tape-drive, co-processor)	Tape-drive
Operating system and version (eg. VAX-VMS, Unix, Pick)	UNIX
Shell program used, if any (eg. Multi-view)	Multi-view
Number of terminals linked to this machine	c 30
Is the system linked to a wide area network (eg. bridge to mainframe) Specify	modem link
Communications facilities (eg. access to Janet, Email)	JANET

15.4 Details of multi-user networks (including Mini Computers) not using local processing pcs.

Give details of each server (use columns). Enter details of any local processing pcs connected to server under question 15.2

Details of multi-user machines	1.	2.	3.	4.
Make and model of server				
Processor type & speed (eg. 80486 33 Mhz)				
Amount of RAM (in megabytes)				
Hard disk capacity (in megabytes)				
Floppy drives (type & capacity)				
Screen type , if relevant (eg. mono, VGA)				
Other features (eg. disk mirroring, tape-drive, co-processor)				
Operating system and version (eg. VAX-VMS, Unix, Pick)				
Shell program used, if any (eg. Multi-view)				
Number of terminals linked to this machine				
Is the system linked to a wide area network (eg. bridge to mainframe) Specify				
Communications facilities (eg. access to Janet, Email)				

Comments:

.....

Question 15: Computer Hardware continued

15.5 Mainframe computers

If the organisation uses or has access to mainframe facilities, enter brief details using a separate column for each system if more than one is available.

15.5 Details of Mainframe Computers

Give details for each mainframe in use in relation to biological records (use columns)

Details of mainframe machines	1.	2..
Make of mainframe computer (eg. IBM, ICL, BULL)		
Model number		
Operating System		
Number of terminals with access (biological recording activities)		
How connected (eg. directly or by bridging from LAN/multi-user system)		
How long have you had access to this machine?		
Is use limited (specify)		

Comments:

.....

Question 16: Database software and applications for the management of biological records.

16.1 Are biological records currently managed in a computerised database? If you do not use a formal database but maintain data in some other computerised fashion (eg. as ASCII files for statistical processing) please supply basic details.

Tick the appropriate option.

If biological records are not managed in a database information system, but are handled in some other computerised way such as numerical analysis on a spreadsheet or statistical package, give brief details in the space provided.

16.2 Use of RECORDER

Do you use RECORDER, if so when was it installed? If you are not a RECORDER user do you have plans to change to it in the future?

16.3 Other packaged database applications

Give brief details of any other packaged biological records applications used in the organisation. Packaged is taken to mean an application that has been written for general distribution and which is used in other organisations than your own.

16 : Database software and applications for the management of biological records

In the following questions **database software** refers to the development environment used (eg. Oracle, Ingres, Dbase or Advanced Revelation). **Application** refers to any specific software written in that development language for biological recording purposes (eg. Coredata, Recorder, Bloreccs, Cobra).

If there is a written or published description of the database application(s) in use (other than Recorder), please enclose a copy with this return.

16.1 Are biological records currently managed in a computerised database?

- Yes If Yes go to question 16.2
 No If No state your current aspirations (eg. on waiting list for RECORDER) then go to question 17

.....

16.2 Is the **RECORDER** package used in your organisation?

- Yes If Yes give date installed:
 No If No do you intend to use it in the future ? Yes No

16.3 Other packaged database applications (eg. Bloreccs) in use.

Packaged means a pre-configured application that is distributed by a supplier. (jargon = 'shrink-wrapped')
 For each application answer the following (use columns)

Packaged Applications	
Name of Application	
Supplier	
Single or multi-user	
Date installed	
Approximate cost	
Comment (eg. easy to use, good reports)	

Question 16: Database software and applications for the management of biological records.

16.4 In-house development of database applications

In-house database applications refer to databases written by members of staff (including volunteers) of the organisation.

b) Database development software refers to the programming tools used to create an application, this may be a language (eg. C + + , Turbo Pascal, Basic) or a database generator (eg. Oracle, Advanced Revelation, Dbase iv).

c) Are staff free to choose the database development tools of their choice or is this restricted by a corporate decision to standardise on a specific product.

e) How is the development language/application generator used?

run a named biological recording package eg, running RECORDER on Advanced Revelation

create 'ad hoc' applications eg. creating on -the-fly data tables in ORACLE for 'number crunching'.

create specific database applications on a project basis eg. protected areas database, Birds of Estuaries database.

f) Give details of specific in-house developed databases use a new column for each application.

16.4 In-house development of database applications

- a) Are database applications which were written in-house used in your organisation
 Yes (If Yes continue below) No (If No go to question 16.5)
- b) What database development software is used for biological records applications in your organisation (eg. Information, Oracle, Paradox, Foxbase)

- c) Is the choice of development software subject to a corporate data strategy (eg. within the wider organisation)
 Yes No
- d) On what type of machine does the software reside? Tick one or more options
 Mainframe Mini PC
- e) Use of development software Tick one or more options
 run a named biological recording database package
 create 'ad hoc' applications eg. tables for data manipulation
 create specific database applications on a project basis

f) In-house database applications
 For each in-house written database application give details below

In-house Database applications	1.	2.	3.	4.
Name of application				
Used for				
Developed by				
Database development software				
On what machine does it run?				
Single or multi-user				
SQL compatible Answer Y or N				
Date installed				
Approximate cost (if known)				

Question 16: Database software and applications for the management of biological records.

16.5 Custom-written applications commissioned from a software house or consultant.

Give brief details for each application.

16.6 Import and export of data

This section does not have to be filled in for RECORDER.

16.5 Custom written applications commissioned from a software house or consultant.

For each custom written application give details below (use columns)

Bespoke Database applications	1.	2.	3.	4.
Name of application				
Used for				
Supplier				
Database development software				
On what machine does it run				
Single or multi-user				
SQL compatible Answer Y or N				
Date installed				
Approximate cost				

16.6 Import and Export of data

This section does not have to be filled in for Recorder

a) Industry formats that your database applications support for export and import of data

Tick one or more options

- Dbase SQL ASCII
 Lotus 123 Other (specify)

b) If you export or import data from any of your databases in electronic format, answer the following:

If standard codes or data formats are used for any data please enclose details with this return.

Data Transfers:	1.	2.	3.	4.
To whom				
For what purpose				
Format used				
Data structure (if user specific state custom if a standard eg. Recorder, specify)				

Question 17: Small systems map-based software

This question refers to the use of programs to produce distribution maps and simple statistical plots on maps. Complex Geographical Information Systems are covered in question 18.

Use the columns to describe different applications programs if more than one is in use.

Packaged applications are fixed function programs provided by a vendor eg. DMap.

Generic systems are programs providing a range of functions which can be used together or separately in an ad hoc way or to create applications eg. AutoCad, PC Mapics.

Bespoke applications are user specific applications written either in-house or by a commissioned vendor.

The question relating to maintaining site boundaries refers to the use of the software to store spatial data that would not otherwise be available in the standard database eg. keeping SSSI boundaries as AutoCad layers.

17: Small systems map-based software

This section is intended for details of 'simple' mapping applications not proprietary Geographical Information Systems (GIS) which are covered in question 18

If there is a written or published description of any bespoke map-based application(s) in use, please enclose a copy with this return.

17.1 Is software in use for plotting distribution maps from your biological records?

Yes : If Yes answer the following for each software package (use columns) No if No go to question 18

Map-based Software	1.	2.
Software name		
Packaged application, generic system or bespoke application		
From whom obtained		
approximate cost		
Is it directly accessible from the biological records application?		
If generic or bespoke application, who did the programming?		
How are map boundaries entered or updated?		
Is it used to maintain site boundaries?		
What other functions are provided other than point mapping?		

Question 18: Geographical information systems (GIS)

If you have a written or published account of any GIS projects with which you are involved please enclose them with this return

18.1 Do you use a Geographical Information System in connection with biological records?

Generic systems are programs providing a range of functions which can be used together or separately in an ad hoc way or to create applications eg. Arc/Info, Intergraph.

Bespoke applications are user specific applications written either in-house or by a commissioned vendor.

Packaged applications are fixed function programs provided by a vendor eg. Datascape Planning Constraint Application

18.2 Information on GIS and Image analysis software used for biological recording and related activities.

Give brief details where possible.

18: Geographical information systems (GIS) and image analysis systems (Remote Sensing Software)

Answer for each system in use

18.1 Do you use a GIS in connection with biological records?

No Answer question 18.1 a-e then go to question 19.0 Yes Go to question 18.2

- a) What plans are there to evaluate or install it in the future?
- b) Is a pilot or feasibility study being carried out or has one been completed?
- c) What is the budget for GIS?
- d) Has a particular software package been decided on? If so what is it?
- e) When is this likely to be purchased and installed?

18.2 Details of GIS and Image analysis software in use

(use columns for each package)

GIS and Image Analysis Software	1.	2.
Name of software		
Single or multi-user (enter number of terminals)		
What machine does it run on?		
Map format: vector, raster or both		
Approximate cost of software		
Approximate cost of map base		
Use of system: Tick one or more options		
Generic for 'ad hoc' use		
Bespoke application(s) written 'in house'		
Bespoke application(s) written by software house or consultant (specify)		
Packaged application (eg. Datascape Planning Application)		

Question 18: Geographical information systems (GIS)

18.3 Give brief details of any biological recording and related projects that use GIS or Image analysis software eg. remote mapping of peat bogs.

Question 19: Other software

19. Give brief details of other software packages used in the organisation in relation to biological recording and the dissemination of information.

You have now finished the questionnaire!

18.3 Application of GIS and image analysis software use

Tick one or more options

Give brief details if possible

If there is a written or published account of the GIS or Image Analysis applications in your organisation please enclose a copy with this return.

GIS & Image Analysis Applications:	1.	2.
Distribution mapping		
Planning constraint mapping		
Maintaining site boundary data		
Direct link to biological records database		
Maintaining other graphical data eg. photographs		
Utility and asset mapping		
Ecological analysis using ground data		
Ecological analysis using remote sensed data		
Other thematic mapping (specify)		
Digital terrain mapping		
Spatial statistical plots (eg. histograms on maps)		
Other (specify)		

19: Other software

What other software is regularly used in connection with biological records work?

For each option ticked, enter the name of the package

<input type="checkbox"/> Word-processing
<input type="checkbox"/> Desktop publishing
<input type="checkbox"/> Spreadsheet
<input type="checkbox"/> Presentation graphics
<input type="checkbox"/> Statistical analysis
<input type="checkbox"/> Communications software
<input type="checkbox"/> Other (specify)

If you require any advice or help with the completion of this questionnaire please contact :

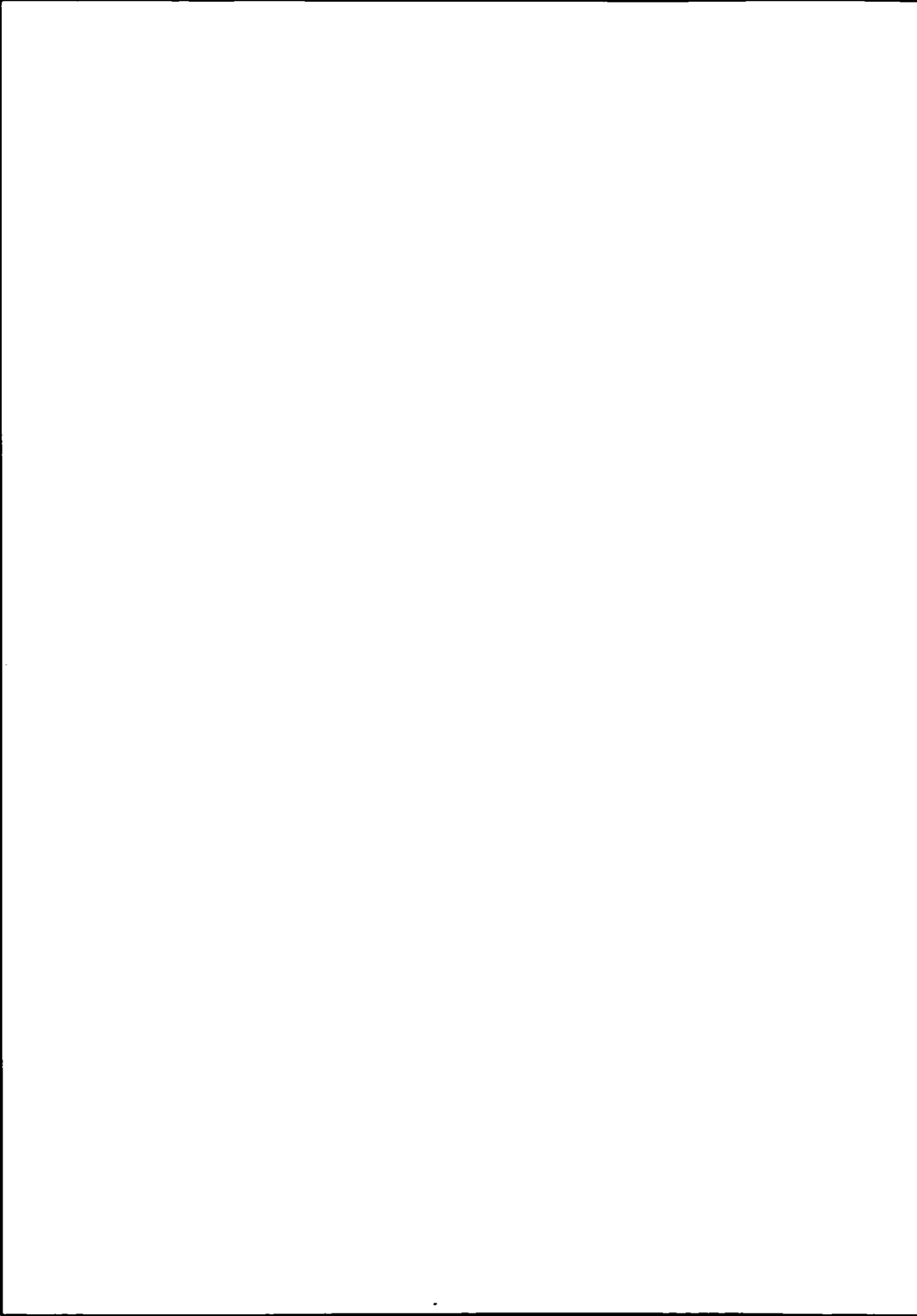
**Charles Copp
8 The Paddock
Clevedon
Avon
BS21 6JU**

Telephone: 0275 874128

If you have any general enquiries about the Co-ordinating Commission For Biological Recording please contact the Secretary:

**Paul Harding
c/o Institute of Terrestrial Ecology
Monks Wood
Abbots Ripton
Huntingdon
Cambs
PE17 2LS**

Telephone: 04873 381



**List of respondents to the Coordinating Commission
for Biological Recording Programme Survey**



List of respondents to the Coordinating Commission for Biological Recording Programme Survey

Aberdeen University Natural History Museum
Aquatic Coleoptera Recording Scheme
Araneid Recording Scheme
Army Ornithological Society
Atomariinae & Ptiliidae Recording Scheme
Auchenorrhyncha Recording Scheme
Bat Conservation Trust
Bedfordshire & Cambridgeshire Wildlife Trust
Belfast Urban Wildlife Group
Berkshire Badger Group
Biological Records Centre for Lincolnshire
Birmingham & Black Country Urban Wildlife
Bolton Museum & Art Gallery
Bolton Urban Wildlife Project
Booth Museum
Botanical Society of the British Isles
Botanical Society of the British Isles Recorder VC 001a
Botanical Society of the British Isles Recorder VC 001b
Botanical Society of the British Isles Recorder VC 002
Botanical Society of the British Isles Recorder VC 003
Botanical Society of the British Isles Recorder VC 005
Botanical Society of the British Isles Recorder VC 006
Botanical Society of the British Isles Recorder VC 009
Botanical Society of the British Isles Recorder VC 010
Botanical Society of the British Isles Recorder VC 011
Botanical Society of the British Isles Recorder VC 012
Botanical Society of the British Isles Recorder VC 015 & 016
Botanical Society of the British Isles Recorder VC 017
Botanical Society of the British Isles Recorder VC 018 & 019
Botanical Society of the British Isles Recorder VC 020
Botanical Society of the British Isles Recorder VC 021
Botanical Society of the British Isles Recorder VC 022
Botanical Society of the British Isles Recorder VC 023
Botanical Society of the British Isles Recorder VC 024
Botanical Society of the British Isles Recorder VC 025 & 026
Botanical Society of the British Isles Recorder VC 027
Botanical Society of the British Isles Recorder VC 028
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Botanical Society of the British Isles Recorder VC 030
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Botanical Society of the British Isles Recorder VC 041 (West)
Botanical Society of the British Isles Recorder VC 043
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Botanical Society of the British Isles Recorder VC 050

Botanical Society of the British Isles Recorder VC 051
Botanical Society of the British Isles Recorder VC 055
Botanical Society of the British Isles Recorder VC 055b
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Botanical Society of the British Isles Recorder VC 066
Botanical Society of the British Isles Recorder VC 067 & 068
Botanical Society of the British Isles Recorder VC 069 & 070
Botanical Society of the British Isles Recorder VC 071
Botanical Society of the British Isles Recorder VC 073
Botanical Society of the British Isles Recorder VC 077
Botanical Society of the British Isles Recorder VC 078
Botanical Society of the British Isles Recorder VC 079 & 080
Botanical Society of the British Isles Recorder VC 081
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Botanical Society of the British Isles Recorder VC 092
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Botanical Society of the British Isles Recorder VC 110
Botanical Society of the British Isles Recorder VC 111
Botanical Society of the British Isles Recorder VC 112
Botanical Society of the British Isles Recorder - Guernsey Bailiwick
Botanical Society of the British Isles Recorder - Jersey
Brecknock Wildlife Trust
Brecon Beacons National Park Authority
Brighton Urban Wildlife Group
British Bryological Society
British Lichen Society
British Trust for Ornithology
Brock (Cornwall)
Buckinghamshire Bird Club
Building Research Establishment Executive Agency
Bury Wildlife & Countryside Action Group
CADW: Welsh Historic Monuments
Cambridge Bird Club
Cantharoidea & Buprestoidea Recording Scheme
Carabid Recording Scheme
Centipede Recording Scheme
Central Region Records Centre

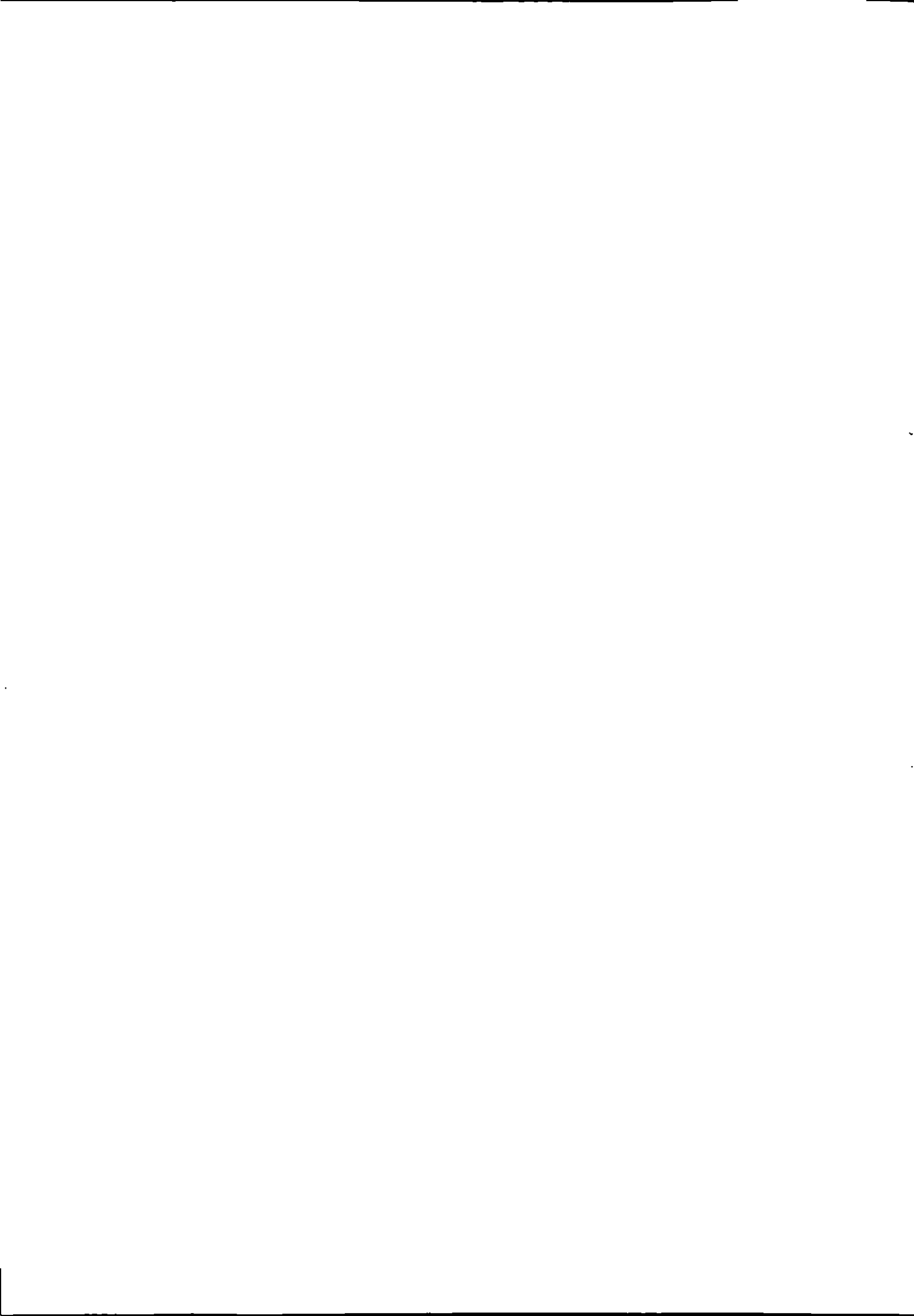
Cerambycidae Recording Scheme
 Characeae Recording Scheme
 Cheshire & Wirral Ornithological Society
 Cheshire Wildlife Trust
 Chichester Harbour Conservancy
 Cladocera Recording Scheme
 Cleroidea, Lymexyloidea & Heteromera Recording Scheme
 Cleveland Badger Group
 Cleveland Wildlife Trust
 Clwyd Badger Group
 Clyde River Purification Board
 Colchester Museum Resource Centre
 Conopidae Recording Scheme
 Cornish Biological Records Unit
 Countryside Council for Wales
 Cumbria Badger Co-ordinating Group
 Cumbria Naturalists Union
 Cumbria Wildlife Trust
 Dartmoor Badger Protection League
 Dartmoor National Park Authority
 Department of Agriculture for Northern Ireland - Agricultural Zoology Research Division
 Department of Agriculture for Northern Ireland - Agriculture & Food Chemistry Centre
 Department of Agriculture for Northern Ireland - Field Botany Research Division
 Department of the Environment - Rural Affairs
 Derbyshire Biological Records Centre
 Derbyshire Ornithological Society
 Derbyshire Wildlife Trust
 Derbyshire Wildlife Trust Badger Group
 Dixidae Recording Scheme
 Dorset Bird Club
 Dorset Trust for Nature Conservation
 Dundee Museums & Art Galleries
 Dundee Urban Wildlife Group
 Durham Badger Group
 Dyfed Wildlife Trust
 East & North Yorkshire Badger Protection
 EcoRecord
 Empid & Dolichopid Study Group
 English Heritage
 English Nature - East Region - Essex/Herts
 English Nature - HQ
 English Nature - Pollution Policy Group
 English Nature - Lands Division
 English Nature - Habitats Branch
 English Nature - North East Region
 English Nature - North West Region - Cumbria
 English Nature - North West Region - Merseyside
 Environment Service (DOENT)
 Essex Birdwatching Society
 Exmoor National Park Authority
 Falkirk District Biological Data Bank
 Fife & Kinross Badger Group
 Fish Conservation Centre
 Fordingbridge & District Badger Conservation Group
 Forest of Dean Badger Patrol
 Freshwater Flatworm Recording Scheme
 Freshwater Oligochaete Recording Scheme
 Game Conservancy
 Glamorgan Bird Club
 Glasgow Museum Biological Records Centre
 Gloucestershire Wildlife Trust

Guernsey Museums & Galleries
 Gwent Badger Group
 Gwynedd Badger Group
 Hampshire County Council Planning Department
 Hampshire Ornithological Society
 Hawthorns Urban Wildlife Centre
 Herefordshire Nature Trust
 Herefordshire Ornithological Club
 Hertfordshire Bird Club
 Hertfordshire Environmental Records Centre
 High Peak Badger Group
 Historic Scotland
 Hymenoptera Aculeata (Bees, Wasps and Ants) Recording Scheme
 Incurvarioidea Recording Scheme
 Industrial Science Centre
 Institute of Terrestrial Ecology - Biological Records Centre
 Institute of Terrestrial Ecology - Butterfly Monitoring Scheme
 Institute of Terrestrial Ecology - Corine Biotopes Project
 Institute of Terrestrial Ecology - Furzebrook Research Station
 Institute of Terrestrial Ecology - Merlewood Research Station
 Institute of Terrestrial Ecology - UK Centre for Critical Loads Mapping
 Inverness Museum Records Centre
 Islay Field Centre
 Isle of Wight Environmental Records Centre
 Isle of Wight Natural History & Archaeological Society
 Joint Nature Conservation Committee - Biotopes Conservation Branch
 Joint Nature Conservation Committee - Coastal Review Unit
 Joint Nature Conservation Committee - Invertebrate Site Register
 Joint Nature Conservation Committee - Marine Nature Conservation Review
 Joint Nature Conservation Committee - Ornithology Branch
 Joint Nature Conservation Committee - Species Conservation Branch
 Joint Nature Conservation Committee - Vertebrate Ecology & Conservation Branch
 Kent Biological Records Centre
 Kent County Council Planning Department
 Kent Ornithological Society
 Kent Trust for Nature Conservation
 Kirklees Badger Protection Group
 Lake District National Park Authority
 Lancashire Badger Group
 Larger Brachycera Recording Scheme
 Leicester Ecology Trust
 Leicestershire & Rutland Ornithological
 Leicestershire Museums & Art Galleries Records Service
 Lichen Recording Scheme
 Lincolnshire Badger Group
 Lincolnshire County Council
 Lincolnshire Naturalists Union - Coleoptera Records
 London Ecology Unit
 Luton & Dunstable Wildlife Project
 Luton Museum Record Centre
 Manx National Heritage (formerly Manx Museum and National Trust)
 Manx Nature Conservation Trust
 Mid-Sussex Badger Protection Group
 Ministry of Defence
 Montgomeryshire Wildlife Trust
 Myxomycete & Gasteromycete Recording Scheme
 National Rivers Authority - North West Region
 National Rivers Authority - Severn Trent Region
 National Rivers Authority - South West Region
 National Rivers Authority - Southern Region
 National Rivers Authority - Thames Region

National Rivers Authority - Welsh Region
National Butterfly Recording Scheme
National Museum of Wales (Botany Department)
National Museums & Galleries on Merseyside
National Trust - Biological Survey
National Trust for Scotland
Neuroptera, Mecoptera Raphidioptera & Megaloptera Recording Scheme
New Forest Badger Group
Norfolk Broads National Park Authority
Norfolk Ornithologists' Association
North East Derbyshire Badger Group
North East Essex Badger Group
North East River Purification Board
North Eastern Environmental Records Centre
North Wales Wildlife Trust
North West Essex Badger Protection
North York Moors National Park Authority
Northamptonshire County Council
Northamptonshire Wildlife Trust
Northants Badger Group
Northern Highland Environmental Records Centre
Northern Ireland Birdwatchers' Association
Northumberland & Tyneside Bird Club
Northumberland National Park Authority
Northumberland Wildlife Trust Badger Group
Northwest Biological Field Databank
Nottinghamshire Badger Group
Nottinghamshire Birdwatchers
Nottinghamshire County Council
Opilionid Recording Scheme
Orkney Field Club
Orthoceros Weevil Recording Scheme
Orthoptera, Dermaptera & Dictyoptera Re-recording Scheme
Oxford Biological Recording Scheme
Oxfordshire Badger Group
Peak Park Joint Planning Board
Perth & Kinross District Records Centre
Perthshire Society of Natural Science
Peterborough Biological Records Centre
Peterborough Wildlife Group
Plant Gall Recording Scheme
Potteries & Newcastle Urban Wildlife Group
Radnor Bird Group
Radnorshire Badger Group
Radnorshire Wildlife Trust
RAMSAR
Rotherham Museum Biological Records Centre
Rotherham Urban Wildlife Group
Royal Albert Museum Exeter
Royal County of Berkshire (Planning Department)
Royal Museum of Scotland
Royal Society for Nature Conservation/The Wildlife Trust Partnership
Royal Society for the Protection of Bird
Rural Surveys Research Unit
Rydale Badger Group
Scolton Manor Museum (Pembrokeshire Biological Records Centre)
Scottish Natural Heritage
Scottish Ornithologists' Club
Scunthorpe Borough Museum & Art Gallery
Seabird Group
Sheffield Biological Records Centre

Shropshire Badger Group
Shropshire Biological Records Centre
Shropshire Ornithological Society
Shropshire Wildlife Trust
Siphonaptera Recording Scheme
Snowdonia National Park Authority
Somerset County Council
Somerset Environmental Records Centre
Somerset Ornithological Society
Somerset Trust Badger Group
South Downs Badger Protection Society
South Humberside Badger Group
South Lakes Badger Protection Group
South West Cheshire Badger Watch
Staffordshire Badger Conservation Group
Staffordshire Biological Records Centre
Staffordshire Wildlife Trust
Suffolk Biological Records Centre
Suffolk Wildlife Trust Badger Group
Surbiton & District Birdwatching Society
Surrey Badger Protection Society (East)
Surrey Bird Club
Sussex Ornithological Society
Sussex Wildlife Trust
Swansea Wildlife Action Group
Symphyta Recording Scheme
Syrphidae Recording Scheme
Tay River Purification Board
Terrestrial Flatworm Recording Scheme
Tipuloidea & Ptychopteridae Recording Scheme
Trichoptera Recording Scheme
Tullie House Museum & Art Gallery
Ulster Wildlife Trust
W.A. Fairhurst & Partners
Warwickshire Badger Group
Warwickshire Biological Records Centre
Warwickshire Nature Conservation Trust
Welsh Ornithological Society
Welsh Water
West Country Badger Patrol Group
West Cumbria Badger Patrol
West Glamorgan Biological Records
West Kent Badger Group
West Sussex Badger Protection Group
West Sussex County Planning Department
West Yorkshire Ecological Advisory & Information Service
Wildlife Insite (Lothian Biological Records Centre)
Wildlife in Newport Group
Wiltshire County Council
Wiltshire Ornithological Society
Wiltshire Trust for Nature Conservation
Worcestershire Biological Records Centre
Worcestershire Nature Conservation Trust
York Badger Group
Yorkshire Wildlife Trust

**Report to the Coordinating Commission for Biological Recording
on the legal implications of biological recording**



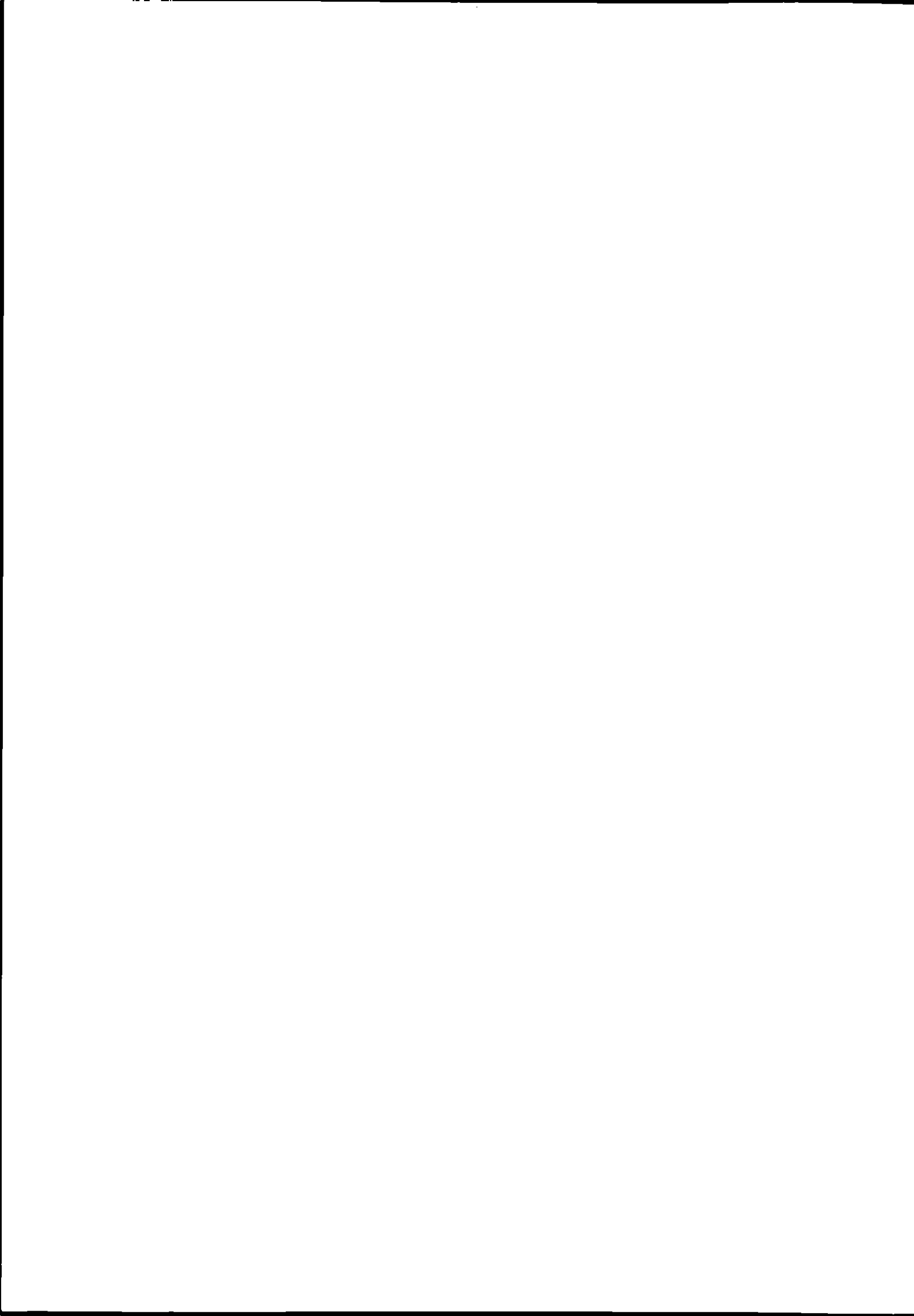
**Report to the
Coordinating Commission
for Biological Recording
on the legal implications of
biological recording**

MORRELL, PEEL & GAMLEN

Solicitors

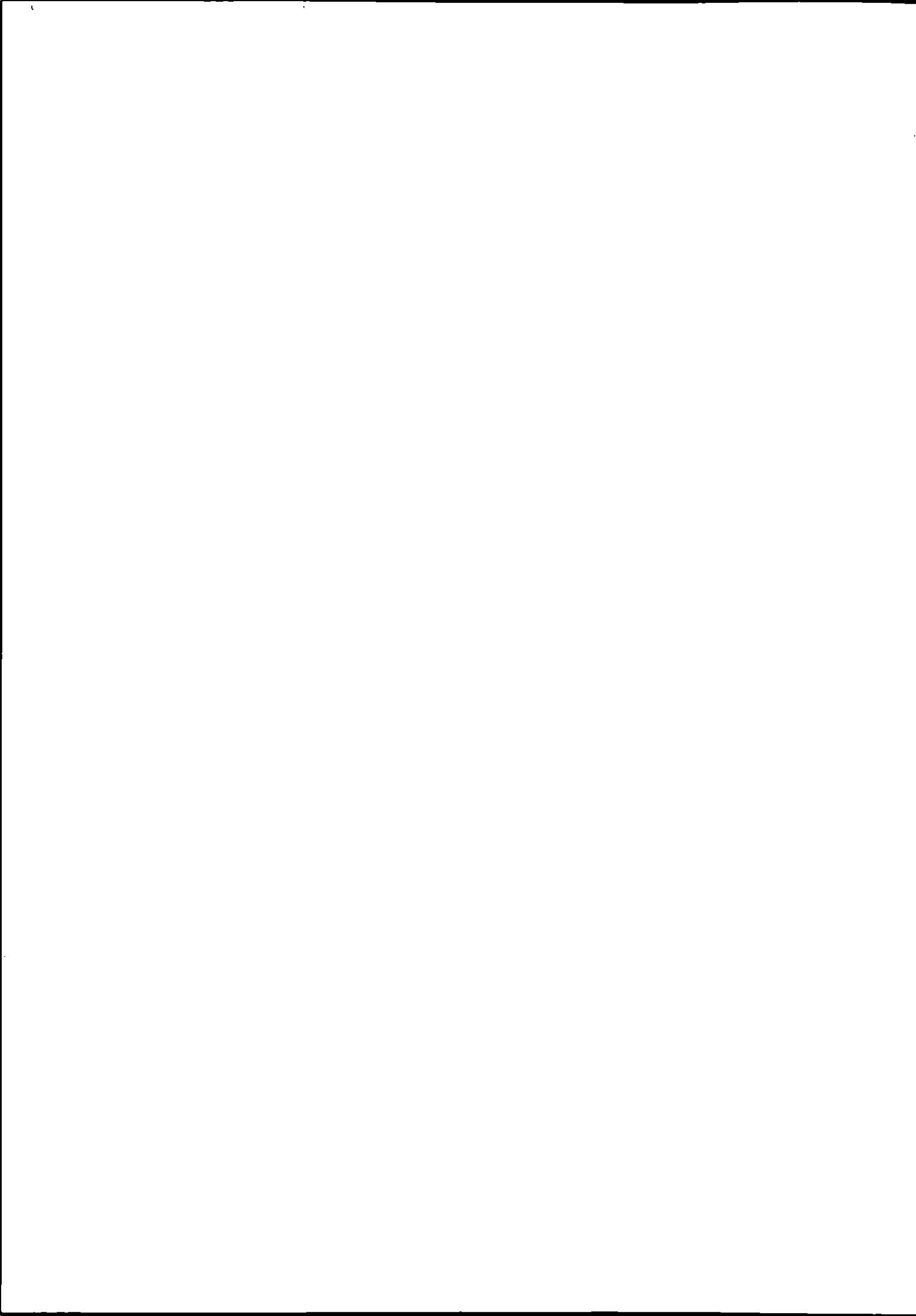
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1 Introduction

This Report addresses the questions set out in the document prepared by the Coordinating Commission for Biological Recording entitled 'Legal Advice in connection with Biological Recording', a copy of which forms an Annex to this Report.

It deals first with questions of intellectual property and related rights which arise in the context of biological recording and the creation and maintenance of electronic databases of biological records. It then considers the extent to which there are legal obligations to create and maintain biological records and legal obligations to make available biological records to the public. Finally, it considers briefly the potential liabilities of database providers and ways in which they may be minimised or disclaimed.

The Report states the law of the United Kingdom in relation to intellectual property matters and the law of England and Wales in relation to all other matters, in each case as at 22 December 1993.

II Intellectual Property and Related Rights

Physical Ownership and Ownership of Intellectual Property

The law distinguishes between ownership of intellectual property rights in an object and ownership of the physical object itself. The owner of intellectual property rights in an object essentially controls the rights to reproduce that object, for example by photographing it, publishing it or storing it in an electronic database. The owner of the object has the usual rights associated with ownership of a chattel: he can sell the object, lend it, display it or even destroy it, but he cannot - by virtue of physical ownership - reproduce it.

This is an important distinction in the context of biological recording, because physical ownership of a collection of records may be vested in one person, such as a collecting agency, but ownership of the intellectual property in those records may be vested in a number of different persons, all of whom may have to give their consent to the dissemination, or further dissemination, of their work. Reproduction of a work protected by intellectual property rights without the consent of the rights owner can give rise to civil, and in certain cases, criminal penalties.

2. Types of Intellectual Property Rights

The types of intellectual property rights which will be relevant in the context of a national scheme for biological recording are essentially copyright, the new rights which are proposed for the protection of the economic

interests of database providers, the moral rights accorded to authors and, possibly, plant breeders' rights and patent rights.

3. Copyright

Of these types of intellectual property rights, copyright is undoubtedly the most important in the present context. For that reason, this Report focuses upon this area of law in some detail.

3.1 Categories of Protected Copyright Work

The Copyright, Designs and Patents Act 1988 (referred to throughout this Report as "the 1988 Act") accords copyright protection to the following categories of work:

- original literary works
- original dramatic works
- original musical works
- original artistic works
- sound recordings
- films
- broadcasts
- cablecasts
- the typographical arrangement of published editions.

Biological records are most likely to be in written or graphic form, so that literary and artistic works will clearly be relevant in the present context. Biological information may also, though, be recorded by means of sound recording, film or broadcast and cablecast, and so these categories of copyright work will also be considered briefly. The copyright which exists in published editions may also be relevant to the extent that published records are incorporated in any national database.

A literary work means any work which is written (whether conventionally, or by means of notation or code), spoken or sung. There is no requirement for 'literary merit'. A literary work, under the 1988 Act, specifically includes a table or compilation; it also includes a computer program. Thus, a simple biological record can in principle be a literary work, as can a compilation of such records.

Artistic works comprise:

- graphic works
- photographs
- sculptures
- collages
- works of architecture
- works of artistic craftsmanship.

Graphic works include:

- paintings
- drawings
- diagrams
- maps
- charts
- plans
- engravings

- etchings
- lithographs
- woodcuts, and similar works.

Again, there is no requirement for 'artistic merit', so that a simple sketch of an animal, for example, can in principle constitute an artistic work.

A sound recording may be either a recording of a literary, dramatic or musical work or a recording of sounds where there is no underlying copyright work, for example recordings of bird song. It does not matter how the sound is recorded or on what medium.

A film is a recording on any medium from which a moving image may be produced by whatever means, and so is to be contrasted with a photograph for copyright purposes. A film soundtrack is separately protected as a copyright work.

A broadcast or cablecast means a transmission by wireless telegraphy or via a cable service of visual images, sounds or other information for presentation to members of the public.

It will be noted from the categories of copyright work that copyright protection is not afforded to ideas or information, however novel or valuable, unless they are reduced into permanent form. Thus, it is the *recording* of biological information that may give rise to intellectual property rights.

It will also be seen that to qualify for protection, literary and artistic works must satisfy a test of originality. Under the law of the United Kingdom, the test is satisfied if sufficient skill or labour is employed in the execution of the work. In other words, a work produced by 'the sweat of the brow' is as original as a work of creativity and imagination, and the creation of an electronic database from a mass of manual recordings can, in principle, qualify for protection as a literary work of compilation. The key is simply that a work must originate from its author and be a product of his skill and judgment, as distinct from the skill and judgment of another. Mere copying of the work of another will not give rise to a new copyright.

3.2 Ownership of Copyright

Subject to certain exceptions, which will be discussed below, the first owner of copyright in a copyright work is its author.

3.2.1 Literary Works

It is not usually difficult to determine who is the author of a literary work, once the relevant literary work has been identified. In the present case, there will be at least two types of literary work to be considered: the literary work in the form of the individual biological record and the literary work represented by the electronic compilation of such records.

It is usually the creator of the work who is its author and so, in the case of a biological record, the person making the biological record will usually be the author, and in the case of a work of compilation, such as a database of biological records, the author will be the person gathering together and arranging the compilation. The compiler will own the copyright in the compilation, which will remain distinct from the copyright in the individual records which represent it.

3.2.2 Artistic Works

In the case of artistic works other than photographs, it will usually be the person who fixes the work upon the medium used, for example, paper, canvas or wood, who is the work's author. The author of a photograph taken on or after 1 August 1989, the date on which the 1988 Act came into force, is the person creating it, i.e. the photographer himself. Under previous legislation, the author of a photograph was the person who owned the material on which the photograph was taken at the time it was taken, and care has to be taken generally in relation to photographs, which until the coming into force of the 1988 Act were not accorded full copyright protection.

3.2.3 Sound Recordings

The author of a sound recording made on or after 1 August 1989 is the person by whom the arrangements necessary for the making of the recording are undertaken. This is usually taken to mean the person assuming responsibility - especially financial responsibility - for such arrangements.

Prior to 1 August 1989 the author of a sound recording was the person who owned the record on which the sound was first recorded at the time it was recorded.

3.2.4 Films

The author of a film made on or after 1 August 1989 is currently the person by whom the arrangements necessary for the making of the film are undertaken. As with sound recordings, this is usually taken to mean the person assuming financial responsibility for such arrangements. However, the European Commission has recently circulated an Amended Proposal for a Council Directive (93/C 27/09) which proposes, amongst other things, that a director of a film be treated as its author. The Proposal anticipates implementation of the final Directive by national legislation in Member States of the European Union by 1 July 1994.

3.2.5 Broadcasts/Cablecasts

The author of a broadcast or cablecast is the person transmitting the broadcast or providing the cablecast.

3.2.6 Published Editions

The author of the typographical arrangement of a published edition is its publisher.

3.2.7 Employment

Where a literary, dramatic, musical or artistic work is made by an employee in the course of his employment, the law provides that his employer is the first owner of copyright in the work unless employer and employee reach agreement to the contrary.

Whether a person is an employee, and whether his work is created pursuant to his employment contract, are questions of law which will depend on the facts in any given case. In University of London Press Limited -v- University Tutorial Press Limited (1916) 2 Ch 601, where the court had to determine whether an author of examination papers was an employee or not for the purposes of the 1911 Copyright Act, it was held that, for an employment relationship to exist, an employer had to exercise a significant degree of control over his employee, both in relation to the work he did and the way in which he did it.

Whether a court would take the same view now is perhaps doubtful: recent cases have recognised that professional people, in particular, are frequently engaged under employment contracts and yet accorded considerable autonomy in their work. In some cases, it has been said that the contrast is to be drawn between a person who is engaged to do some specific work over which the person engaging him has some control and a person who is essentially engaged in the capacity of an independent contractor. In the former case, the person will usually be an integral part of a business, while in the latter he is likely to be an adjunct to a business only. In other cases, the fundamental test has been said to be whether the person who performs the services is in business on his own account, answerable only to himself; if so, he is not an employee.

It is possible that a number of persons who make biological records, or who compile collections of them, are employed to do so, such that copyright in their records, or their compilations of records, vests automatically in their employer. This may, for example, be the case with local record centres run by local authorities, and possibly even with voluntary organisations, such as wildlife trusts, if they are staffed by persons whose employment duties include the making of biological records. It will very much be the case with the persons employed in the compilation of any national database of records. These principles will not, however, operate to vest copyright in records made by volunteers in the trusts or societies to which they belong. Nor will they operate in the absence of an employment relationship.

There are no hard and fast rules as to the sorts of employers and employees who contract out of these provisions. It is understood that many institutes of higher education do not, as a matter of course, claim rights in their employees' copyright works, but the position should be clarified in given cases as policies differ and are frequently updated.

3.2.8 Commissioned Works

Under the 1988 Act, no special provision is made in relation to copyright in commissioned works. In other words, there is no general rule which provides that copyright in a commissioned work will vest in the commissioner. Under previous legislation, there was provision for copyright in commissioned photographs, portraits and engravings to vest in the commissioner, but there has never been under English law any general recognition of the concept of commissioning. If it is desired that the commissioner should own copyright, therefore, then agreement must be reached between author and commissioner to that effect. If there is no such agreement, normal rules of copyright ownership will apply.

It is worth noting the implications of this aspect of copyright law in the context of funded projects, especially the funding of educational and research-based institutions, independent conservation agencies and private trusts and charities engaged in biological recording. Unless the funding contract provides for the vesting of copyright and other intellectual property rights in the funding organisation, or in the funding organisation and the author(s) jointly, the funding organisation will have no say in, or control over, any copyright or other intellectual property created and exploited as a result of its investment. Practices and policies differ from funding organisation to funding organisation. Some require copyright ownership as a matter of course; some have no interest in it; some are specifically prevented by their constitutions from acquiring copyrights. Further investigation into the standard terms and conditions on which funding agencies make grants for the purposes of biological recording would have to be undertaken before arrangements could be made to take the records created with the benefit of those grants into any national database.

3.2.9 Assignments and Licences of Copyright

3.2.9.1 Assignments

Copyright is a property right and, as such, is capable of being transferred to another person. This transfer may occur by assignment, by disposition in a will or by operation of law, for example in the case of bankruptcy.

The 1988 Act provides that where copyright is transferred by means of an assignment, that assignment must be in writing and signed by or on behalf of the assignor. An assignment may be partial, such that it relates only to a certain period of the copyright term (see Section 3.3 below); or to certain of the copyright rights which are conferred exclusively on a copyright owner (see Section 3.5 below); or to the copyright in a given country of the world, because by virtue of international conventions, copyright constitutes a collection of rights throughout the world. In practice, partial assignments of copyright are rare, no doubt because they are extremely

difficult to administer: arrangements for the licensing of different components of a copyright are far more common.

3.2.9.2 Licences

In many circumstances, it is not necessary to secure outright ownership of copyright in order to undertake exploitation of copyright works. In those circumstances, a licence will suffice. A licence is simply a permission, a contractual arrangement, under which the licensee is permitted to undertake certain activities in relation to a copyright work while the copyright in the work itself remains with the licensor.

Although the 1988 Act makes no provision that licences must be in writing unless they are exclusive licences, it is good practice to reduce the terms of every licence, however minor, into writing, so that the licensor and licensee can both be certain of the extent of the permission which is granted.

3.2.9.3 Assignments and Licences in the context of a National Scheme for Biological Recording

A national scheme, or the body administering it, will not be the first owner of copyright in any records which it wishes to incorporate in a database and which are in existence when the national scheme comes into operation. Nor is it likely to be first owner of copyright in records compiled after it comes into operation, unless it acquires such copyright by virtue of employing the persons undertaking the recording. It is highly unlikely that the Government would be persuaded to provide for any form of statutory vesting of copyright in a national scheme, given that to do so would amount to expropriation of the rights of a vast number of people, including private individuals, charities and trusts.

Any national body which is charged with the collection, collation and dissemination of biological records by means of a national database will therefore have to negotiate with the various owners of copyright in the records which are of interest in order to secure assignments of copyright, where possible and appropriate, and licences of the necessary copyright rights in all other cases. It will be observed that these negotiations will have to be conducted at a number of levels. It is possible that existing holders of records may be able to contract for the inclusion of their holdings (or selections from them) in a national electronic database, but a national body would need to satisfy itself as to the holders' rights to do so. It would therefore be looking for evidence of formal assignments of copyright from individual authors of records, or their employers, in favour of the holder or a licence whose terms were sufficiently wide to permit inclusion of records in an electronic database and their use in accordance with the intentions of the national body. The same considerations would apply in relation to publishers of data. The national body would need to satisfy itself that the

publisher was in a position to grant all of the rights in its published material which a national body would need for the purposes of the scheme.

The reality is, of course, that a national database is unlikely to have been in the contemplation of records centres and publishers at the time their licences were granted, and it has to be recognised that there may be no formal written agreement as to the rights of records centres holding data which has been deposited voluntarily. Accordingly, the national body charged with the establishment of the database faces the prospect of having to contact considerable numbers of makers of records which it wishes to include, either directly or through the intermediate collector of records, in order to secure the necessary copyright assignments or licences. Considerable care and administrative back-up would be necessary to ensure a comprehensive and systematic approach to the gathering in of the necessary copyright permissions. It goes without saying, also, that legal advice would have to be taken upon the forms of permission to be secured once the basis of the creation and holding of records had been established in given cases.

3.3 Duration of Copyright

3.3.1 Literary and Artistic Works

The general period of protection for literary and artistic works under the 1988 Act begins when the work comes into existence and lasts for a period of fifty years from the end of the calendar year in which the author dies. In general, the position was the same under previous legislation except in the case of photographs and engravings, where the period was either fifty years from the end of the calendar year in which the work was published (under the Copyright Act 1956) or made (under the Copyright Act 1911). The 1956 Act generally provided for copyright protection to continue indefinitely until a work was published, but the 1988 Act now provides for fixed copyright terms and sets a 'long-stop' date for any works unpublished on the date it came into force. It is no longer of relevance, therefore, when determining the duration of any copyright in a biological record, whether it has been published or not.

These periods of protection are to be read subject to the European Commission Proposal referred to above (93/C 27/09), one of the prime objectives of which is to harmonise the period of copyright protection throughout the European Union. Germany and other EU Member States have a copyright term of seventy years, in part to offset the effect upon authors' rights of two world wars; the Proposal is that all EU Member States should increase their national copyright terms to seventy years for literary and artistic works. National legislation implementing this aspect of the Proposal is also anticipated in 1994.

3.3.2 Sound Recordings, Films, Broadcasts and Cablecasts and Published Editions

Under the 1988 Act, copyright in sound recordings and films is protected for fifty years from the end of the calendar year in which the sound recording or film was made or released.

Copyright in broadcasts or cablecasts is protected for fifty years from the end of the calendar year in which the broadcast or cablecast was made.

The copyright term for new typographical arrangements of published works is twenty-five years from the end of the calendar year in which the edition was first published.

3.4 Unknown or Untraceable Authors

The 1988 Act provides little assistance to those who have difficulties in identifying or tracing copyright owners in order to secure consent to use of their works. It provides only that a person will be held not to have infringed copyright by an act done at a time when it was not possible by reasonable enquiry to ascertain the identity of the author of the work and it is reasonable to assume that copyright has expired or that the author died fifty or more years before the beginning of the calendar year in which the act is done.

Any compiler of a national database would have to undertake extensive enquiries in order to be able to demonstrate that it had satisfied itself that these conditions were met before incorporating into the database anonymous records or records whose authors were difficult to trace. Moreover, the Commission's Proposal will extend this period to seventy years, making the provision of even less practical use.

3.5 Rights of Copyright Owners

The rights of a copyright owner consist of the exclusive rights:

- to copy the work
- to issue copies of the work to the public (i.e. publish it)
- to perform, show or play the work in public
- to broadcast the work or include it in a cable programme service
- to make an adaptation of the work, and
- to do any of these acts in relation to an adaptation of the work.

These are known as restricted acts and are infringed if carried out in relation to the work as a whole or any substantial part of the work, whether directly or indirectly. The test for what constitutes a substantial part of a work is qualitative rather than quantitative, such that to copy a small but essential part of a work can constitute infringement.

Copying in relation to a literary work means reproduction in any material form and includes storage of the work in any medium by electronic means. It would therefore be copying to store biological records in a computerised database.

In relation to a typographical arrangement, copying means making a facsimile copy of the arrangement. It is unlikely that the incorporation of the text of a published edition in a computerised database would constitute copying of the typographical arrangement. This form of copyright was chiefly introduced to protect the interests of publishers publishing out-of-copyright texts, who protested when people were able to photocopy from them with impunity.

The making available of an electronic database to the public (or any section of the public) on whatever medium will constitute publication.

Adaptation of a work includes translation, including from one computer language or code to another, and so may also be relevant in the context of a national database.

A copyright owner also has certain secondary rights to prevent the importation into the United Kingdom and the manufacture, possession, sale, rental, public exhibition or distribution in the United Kingdom of infringing copies of his work. An infringing copy of a work is a copy the making of which constitutes an infringement of copyright or, in the case of an imported copy, would have constituted an infringement of copyright if made in the United Kingdom. Thus, a database provider could be a primary infringer on creating an electronic version of a record, and a secondary infringer on distributing the database containing such record.

3.6 Permitted Acts in relation to Copyright Works

There are several categories of activity in relation to copyright works which do not constitute infringement. It is not thought that these exceptions will be of any great relevance to the creator or user of an electronic database, but they are noted in an Annex to this Report for the sake of completeness. Those relating to public administration and electronic works set out in Sections 5 and 7 respectively of the Annex are likely to be of most relevance, though it is important to note that the former provisions interact with the new Regulations relating to freedom of access to information on the environment discussed in Section III, 2.1 below.

It will be seen from these permitted acts that none constitutes an exception to the requirement for authorisation from a copyright owner for inclusion in, and subsequent use of, his work in an electronic database. Accordingly, neither the purpose of a database nor the proposed use of the data contained in a database is of any relevance to the question whether authorisation of the copyright owner will be required.

3.7 Crown and Parliamentary Copyright

Normal rules of copyright law are subject to variation in the case of copyright works made by Her Majesty or by an officer or servant of the Crown in the course of his duties. Under the 1988 Act, copyright in these works vests in the Crown and, in the case of a literary or artistic works, subsists for one hundred and twenty-five years from the end of the calendar year in which the work was made, unless the work is published commercially before the end of seventy-five years from the end of the calendar year in which it was made, in which case copyright subsists for fifty years from the end of the calendar year in which publication first occurs.

The term of protection for other Crown copyright works (for present purposes sound recordings, films, broadcasts and cablecasts and typographical arrangements) is the normal period for such works when copyright in them is not owned by the Crown.

Not all Crown copyrights are strictly enforced. The practice regarding such copyrights is set out in a General Notice dated 25 June 1990, which also deals with practice in relation to Parliamentary copyright materials published by HMSO. The 1988 Act introduced provision for Parliamentary copyright to subsist in works made by or under the direction or control of either House of Parliament. The term of Parliamentary copyright is that which subsists under the general law.

The Notice divides official material into the following categories:

- statutory material (including Bills and Acts of Parliament, Statutory Rules and Orders and Statutory Instruments)
- Hansard, Lords' Minutes, the Vote Bundle, Commons Order Books and Commons Statutory Instrument Lists
- Other Parliamentary papers published by HMSO, including Select Committee Reports
- other Parliamentary material not published by HMSO
- non-Parliamentary material comprising all papers of Government Departments and Crown bodies, published and unpublished
- charts and navigational material published by the Ministry of Defence and maps and other items on all media published by the Ordnance Survey.

The Notice provides for considerable freedom in the reproduction of material in the first three categories within guidelines issued by HMSO, but subject to the reservation of Crown and Parliamentary rights. Specific permissions are required in relation to use of materials in the second three categories, and in some cases payment of fees.

Given the role of Government in conservation and environmental protection, Crown copyright may well be relevant in relation to biological records if made by officers or servants of the Crown in the course of their

duties. It is unclear whether Government Departments, such as the Department of the Environment and its component institutes (for example, The Institute of Terrestrial Ecology) or The Ministry of Agriculture, Fisheries and Food, make records or compilations of records of a type which might be incorporated in a national electronic database. If they do, then negotiations for the acquisition of their data will have to take account of the special privileges conferred by Crown copyright, in particular the duration of the copyright term.

Not all creatures of Government will be Crown bodies for copyright purposes. Local authorities are not Crown bodies, and so are to be contrasted with vehicles of central Government. The conservation agencies, such as English Nature and the Joint Nature Conservation Committee, may advise Government and, indeed, Government may appoint and fund them, but unless it is specifically provided that their staff are Crown officers or servants or that copyright in their work will vest in the Crown, normal copyright rules would apply to any copyright works, including biological records, which they make. Similarly, the work of the Natural Environment Research Council and its dependencies, for example the Biological Records Centre, will not be subject to Crown copyright unless specifically so provided under funding or employment contracts. Nor will private trusts and charities be subject to Crown copyright unless they specifically so contract; it is likely that if they do, they will do so on a project basis only. It will be noted, however, that regulations governing that freedom of access to environmental information are not only applicable to Crown bodies but to any person with public responsibilities in relation to the environment. (See Section III, 2.1 below).

4. Moral Rights

4.1 Subsistence and Duration of Moral Rights

Since the coming into force of the 1988 Act, authors of copyright literary and artistic works have the right to be identified as authors of such works when they are published commercially, performed in public, broadcast or included in a cable programme service. A work is published commercially if, amongst other things, it is made available to the public by electronic means.

Authors of copyright literary and artistic works also have the right not to have their work subjected to derogatory treatment, i.e. treatment which amounts to distortion or mutilation of their work or which is otherwise prejudicial to their honour or reputation. The right arises in the same circumstances as the right to be identified as author. In each case, the right must be asserted by the author.

These rights are referred to, respectively, as the paternity right and the integrity right and, together, as an author's moral rights. They do not apply in relation to any

literary work made for the purpose of reporting current events. Nor do they apply to computer programs or computer-generated works.

They do not apply in relation to the publication of a literary work in a newspaper, magazine or similar periodical or in an encyclopedia, dictionary, yearbook or other collective work of reference when that work is created for the purpose of such publication or made available with the consent of the author for the purpose of such publication. An electronic database of biological records could constitute a collective work of reference, which is defined as a work of joint authorship (in which the contributions of the authors are fused) or a work in which there are distinct contributions from different authors. However, the 1988 Act does not make express provision to that effect, so it should be assumed that moral rights do arise on the part of authors of any biological records which might be incorporated in a national database.

A person also has the right under English law not to have a literary work falsely attributed to him as author.

4.2 Waiver and Disposition of Moral Rights

It will be inconvenient, to say the least, for the compiler of a national database of biological records to have to respect the moral rights of individual recorders of biological data.

Moral rights may not be licensed or assigned to third parties, but can be waived and, in the present context, waivers should certainly be sought. If not waived by the author, moral rights pass on death to any person(s) appointed by the author in his will. If no specific appointment is made, they pass to the beneficiary of copyright in the relevant work or, if copyright does not pass to a specific beneficiary, to the author's personal representatives.

The right in relation to false attribution of works cannot be transferred by a person in his lifetime, but is exercisable by his personal representatives after his death.

5. Rights relating to Databases

Before considering what rights subsist in a database as such, it is necessary to determine the copyright status of material incorporated, or to be incorporated, in the database. As discussed above, where the material consists of biological records, these are likely to constitute copyright works in their own right and so permission for their incorporation will be required, unless an insubstantial part of a record only, on a qualitative test, is to be taken.

It is then necessary to determine whether the test of originality is passed in relation to the selection and arrangement of database materials such that a separate literary copyright arises in relation to the database as a

work of compilation. In the United Kingdom, as discussed, it suffices that effort and skill are exercised in the matter of compilation. Other jurisdictions, however, in particular the US and the majority of Member States of the European Union, do not recognise 'sweat of the brow' compilations and require true originality and creativity in addition before a separate copyright is granted.

It is partly with this distinction in mind that the European Commission has issued an Amended Proposal for the Legal Protection of Databases (93/C 308/01). The Proposal provides for a new form of property right in electronic databases which are not already protected by copyright, consisting in the right to prevent what is called unauthorised extraction of material from a database.

The Proposal is not without its critics, many of whom are based in the United Kingdom, which is thought to have about 60% of the European market for electronic databases. The objection resides in the fact that the new right would be in lieu of the national protection which currently exists in the United Kingdom for the 'sweat of the brow' electronic database. Instead, copyright protection will only be afforded throughout the European Union if the database is "... original in the sense that it is a collection of works or materials which, by reason of their selection or their arrangement, constitutes the author's own intellectual creation" (Article 2,3).

The United Kingdom's position appears to have succeeded in a reinforcement of the extraction right, which under the original Proposal was granted for a period of ten years and under the Amended Proposal has been increased to fifteen years.

The Amended Proposal also addresses the effect upon copyright and the new extraction right of substantial and insubstantial changes to the database. A 'substantial' change to a database protected by copyright will consist in "an addition, deletion or alteration involving substantial modification to the selection or arrangement of the contents of a database" (Article 9,2(a)), and will result in a new edition in respect of which the copyright term will begin afresh. Any change that is insubstantial will not create a new period of copyright protection. A 'substantial' change to a database not protected by copyright will consist in the "successive accumulation of insubstantial additions, deletions or alterations in respect of the contents of a database resulting in substantial modification to all or part of a database" (Article 12,3(b)), and will give rise to a fresh period of protection against unauthorised extraction.

The extent of the unauthorised extraction right is also clarified. It consists in the right to prevent acts of extraction and re-utilisation of material in a database in whole or substantial part. However, if the database is made available to the public and its materials cannot be independently created, collected or obtained from

another source, the right to extract and re-utilise materials from the database for commercial purposes (other than for reasons of economy of time, effort or financial investment) are to be subject to compulsory licensing on fair and non-discriminatory terms. A declaration identifying the commercial purposes to be pursued and the justification for the compulsory licence are to be submitted to the owner of the extraction right. "Commercial purposes" are defined to include any use which is not private, personal or non-profit making.

The right to extract and re-utilise the materials in a database is also to be licensed on fair and non-discriminatory terms if the database is made publicly available by public authorities, corporations or bodies which are either established or authorised to assemble or to disclose information pursuant to legislation, or are under a general duty to do so; and by firms or entities enjoying a monopoly status by virtue of an exclusive concession by a public body. This will clearly be an area of specific interest to those charged with determining how any national scheme is to be established and run. It should also be borne in mind in the context of the matters addressed in Section III of this Report.

The Amended Proposal goes on to permit extraction and utilisation of insubstantial parts of a database with acknowledgement of the source, except for personal private use, when no acknowledgement is required. "Insubstantial parts" are parts the reproduction of which, evaluated quantitatively and qualitatively in relation to the database from which they are copied, can be considered not to prejudice the exclusive rights of the database owner to exploit his database.

The Amended Proposal makes no reference to computer-generated databases, which are protected under United Kingdom copyright law. It is not thought that this would be of relevance in a database of biological records.

The Amended Proposal is not yet law. Given its wide-ranging effects, the date for the bringing into force of national implementing legislation has been put back to 1 January 1995. There may be further changes in the interim as lobbying groups continue to press for recognition of their special interests.

Whatever the ultimate provisions of United Kingdom implementing legislation, it is clear that the new extraction right and compulsory licensing régime as a whole will have a fundamental impact upon how a national electronic database of biological records should be established.

It will be noted that the question of rights in a database of biological records is distinct from the question of rights in any software tools developed for use with the database, for example for the purposes of organising, analysing and interrogating the database. These tools will be entitled to copyright protection in their own right

as copyright literary works and are not affected by the Amended Proposal as such.

6. Plant Breeders' Rights and Patent Rights

6.1 Plant Breeders' Rights

It is not thought that the form of intellectual property right known as the plant breeder's right will arise directly in the context of a national database of biological records, but some consideration of the nature of the right may be useful for the purposes of orientation.

The Plant Varieties and Seeds Act 1964, as amended by the Plant Varieties Act 1983, grants the right in respect of plant varieties of species or groups which are prescribed by The Ministry of Agriculture, Fisheries and Food or The Secretary of State in respect of Wales and Scotland. A scheme specifies the period for which the right is exercisable, which is not to exceed thirty years nor be less than twenty years. The effect of the right is that the prior authorisation of the breeder must be obtained for production of the variety for the purposes of commercial marketing, offering of the variety for sale or marketing of propagating material for the variety. The right is obtained by application to the Controller of the Plant Variety Rights Office, which examines the application and, if the variety is determined to be 'new', grants registration. The register of plant breeders' rights is open to public inspection.

This area of intellectual property law is also subject to proposals for change from both Europe and the rest of the world, most notably in the form of a proposal for a single Community plant variety right extending throughout the European Union, and a revision to the International Convention for the Protection of New Varieties of Plants which, when ratified by the United Kingdom, will extend the activities in relation to new varieties of plant for which a breeder's prior authorisation is required and generally strengthen the right and its enforcement.

6.2 Patent Rights

Again, it is not thought that patent rights are likely to arise in the context of the computerisation and dissemination of biological records. They are granted, essentially, for inventions or inventive steps which are capable of industrial application. A discovery, scientific theory or mathematical method is specifically excluded from the patent protection régime, as are works potentially protected by copyright. The presentation of information does not qualify for patent protection, and neither do schemes, rules or methods for performing mental acts, playing a game or doing business.

Where a patentable invention exists, it is necessary to apply for the grant of a patent and, if on examination, a patent is granted, the inventor is given an exclusive right to produce his invention for a period of twenty years. As in the case of plant breeders' rights, an invention

must be new, i.e. state of the art, for a patent to be granted. On grant the details of the patented invention become available for public inspection on the register of patents maintained by the Patents Office.

Here too, developments are afoot for the establishment of a Community-wide patent.

III Obligations to make, and make available, Biological Records

1. Obligations to make Biological Records

1.1 International Obligations

The United Kingdom has ratified a number of international treaties relating to the conservation of wildlife and natural habitats. It ratified the 1971 *Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat* in January 1976, the 1979 *Berne Convention on the Conservation of European Wildlife and Natural Habitats* in September 1982 and the 1979 *Bonn Convention on the Conservation of Migratory Species of Wild Animals* in July 1985.

Each of these Conventions implies that its contracting parties will make and maintain some biological records in connection with the duties assumed by them under the Convention provisions. Article 4.3 of *Ramsar* provides that contracting parties will "encourage research and the exchange of data and publications regarding wetlands and their flora and fauna". It could be argued that to be able to exchange data on wetlands, one would need to have in place systems for its recording. Under Article 3.1 of *Berne*, a contracting party is to take steps to "promote national policies" in relation to its Convention obligations and under Article 3.3 "shall promote education and disseminate general information" about the need to conserve species of wild flora and fauna and their habitats. It also undertakes "to encourage and coordinate research" related to the purposes of the Convention under Article 11.1b. Under *Bonn* the obligation is more specific, providing for national authorities to endeavour to conclude international agreements for conservation and management and put in place "machinery" to identify the range and routes of migratory species and monitor the effectiveness of action taken (Article IV and V.4). It also provides that conservation agreements should provide for "research into the ecology and population dynamics of the migratory species", for "exchange of information" about relevant migratory species and substantial threats to them and for measures to raise public awareness of the contents and aims of the agreements (Article V.5(c), (d), (l) and (n)).

None of these Conventions, however, imposes any express obligation to create biological records in particular cases and certainly none anticipates a comprehensive national system of biological recording of the type under contemplation. In any event, these Conven-

tion obligations are, as a matter of law, subject to the national legislation which was introduced to implement them. The main legislation is contained in *The Wildlife and Countryside Act 1981*. Its approach is to detail a long list of prohibited acts in relation to wildlife and plants, with some derogations, and establish a mechanism for habitat protection by means of the designation of sites of special scientific interest and national and marine nature reserves. It does not make any statements of general intention with regard to conservation and specifically does not impose upon Government any general obligation to maintain biological records for the purposes of meeting the conservation duties which it assumes under the Act. The only specific obligation to record appears to be contained in Section 43 of the Act, which provides for local planning authorities whose areas comprise National Park land to prepare maps of areas of such land whose natural beauty they consider it important to conserve.

The 1992 Rio Convention on Biological Diversity is the latest international convention in the area of nature conservation. The United Kingdom has signed the Convention, but will not be bound by it until ratification occurs. National implementing legislation will almost certainly be required before the United Kingdom can ratify. One of the key objectives of the Convention is the conservation of biological diversity in its widest sense by means of national strategies, plans or programmes. It specifically calls upon contracting parties to identify and monitor the components of biological diversity important for its conservation and sustainable use (Article 7) and the impact of measures to conserve diversity (Article 14), which might imply an obligation to make records. There is nothing in the Convention, however, which would oblige the United Kingdom to introduce implementing legislation which provided for systematic biological recording.

1.2 EC Obligations

The United Kingdom, as one of the Member States of the European Union, is also subject to EC directives in the field of nature conservation. There are two main directives, the 1979 Council Directive on the Conservation of Wild Birds (79/409/EEC), which was primarily implemented by the *Wildlife and Countryside Act 1981*, and the 1992 Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC), for which national implementing legislation is expected in the autumn of 1994.

The Birds Directive obliges Member States to send information to the European Commission about the measures taken to ensure the protection of certain wild birds, and so implies an obligation to record data in relation to those measures (Articles 4, 5 and 10). However, it is not specific as to the data to be passed on by Member States, and it cannot, therefore, be said that, in omitting a specific obligation to maintain records of wild birds, the *Wildlife and Countryside Act* fails to

implement the United Kingdom's obligations under the Directive.

The implementing legislation for the Habitats Directive is awaited. Whether such legislation will impose any specific obligation to maintain biological records is not yet clear. The Directive does provide for the provision of national lists of sites for possible inclusion in the Natura 2000 network (Article 4). It also obliges Member States to undertake surveillance of the conservation status of certain natural habitats and species (Articles 11 and 14), which implies the making of records, and provides for the making public of the results of surveillance (Article 17). Article 18 goes on, in common with the international conventions mentioned above, to provide for Member States to encourage research and scientific work in furtherance of the objectives of Natura 2000 and to exchange information.

However, these obligations are vague and, as such, they certainly do not compel Member States to establish any systematic and comprehensive scheme of biological recording.

1.3 National Obligations

The Environmental Protection Act 1990 establishes the Nature Conservancy Councils for England ('English Nature') and Scotland and the Countryside Council for Wales and imposes on them nature conservation functions which include the "provision of advice and the dissemination of knowledge to any persons about nature conservation in their area or about matters arising from the discharge of their functions ..." under the Act (Section 132(1)(d)). The Act also establishes special functions to be discharged by the national councils through their joint committee, The Joint Nature Conservation Committee, which include "the provision of advice and the dissemination of knowledge to any persons about nature conservation for Great Britain as a whole or nature conservation outside Great Britain" (Section 133(2)(c)); and "the establishment of common standards throughout Great Britain for the monitoring of nature conservation and for research into nature conservation and the analysis of the resulting information" (Section 133(2)(d)).

This latter function seems to be the closest to an obligation within the United Kingdom to create a national scheme for biological recording of the type currently envisaged. Of course, biological records as a general category may comprise records other than those which are strictly compiled for the purposes of monitoring nature conservation. However, 'nature conservation' is defined very widely in Section 131(6) of the Act to mean "the conservation of flora, fauna or geological or physiographical features" and it might, therefore, be said that any biological record has a conservation purpose.

Obligations to make available Biological Records

2.1 The Environmental Information Regulations 1992

The Environmental Information Regulations (SI 1992 No. 3240) came into force on 31 December 1992 in order to implement at national level the United Kingdom's obligation under the 1990 EC Directive on Freedom of Access to Information on the Environment (90/313/EEC). The Directive was designed to harmonise laws within the European Union regarding access to environmental information with a view to the improvement of environmental protection within the Union.

One of the main purposes of the Regulations was to enable the public within the United Kingdom to obtain access to information held pursuant to new obligations imposed by the Environmental Protection Act 1990, in particular concerning pollution control, waste and litter. There is no doubt, however, that the Regulations will also permit public access in principle to biological records as these will, in almost all cases, contain information relating to the environment. Information relating to the environment is defined in the Regulations to mean information relating to "the state of any water or air, the state of any flora or fauna, the state of any soil or the state of any natural site or other land" and activities or measures adversely affecting, likely adversely to affect or designed to protect the environment (Regulation 2(2)(a)-(c)).

The Regulations apply to records held in an accessible form by relevant persons who include "all Ministers of the Crown, all Government departments, local authorities and other persons carrying out functions of public administration at a national, regional or local level who, for the purposes of or in connection with their functions, have responsibilities in relation to the environment" and "any body with public responsibilities for the environment" which does not fall within the above category but is "under the control" of such a person (Regulation 2(3)).

As noted above, the ambit of the Regulations goes far beyond the Crown and, therefore, Crown copyright information. They will bind private bodies if they carry out functions of public administration which impose duties in respect of the environment. It would seem, therefore, that they bind the Nature Conservancy Councils and bodies such as the Natural Environment Research Council, as well as bodies such as the Biological Records Centre and the Institute of Terrestrial Ecology, if, as appears to be the case, they are under the control, for the purposes of the Regulations, of the NERC. It does not seem to matter that records are held, or control is exercised, by virtue of any statutory or other mandatory obligation. The scheme of the

Regulations is, broadly, that if records are held by relevant persons, under whatever circumstances, they are to be made available by them unless particular exemptions apply.

In the Government's guidance note on the draft Regulations, the following commentary appears on the meaning of "control":

"Control is taken to mean a relationship constituted by statute, rights, contracts or other means which either separately or jointly confer the possibility of directly or indirectly exercising a decisive influence on a body. This would be the case for most public-sector bodies (e.g. Non Departmental Public Bodies and government-owned companies) but could also be the case for private-sector bodies placed under some statutory duty. However, any body included in the above definition would be excluded if they had no public responsibilities for the environment." (Paragraph 10)

It also went on, somewhat unhelpfully, to say:

"Because circumstances vary and change, the Government is unable to give a definitive list of organisations subject to the requirements of the Regulations. So organisations will need to take a view themselves as to whether they fall into any of the above categories and thus become a relevant person. In cases of dispute, it will be for the courts to decide." (Paragraph 12)

It is important to note that obligations extend to "anything contained in records", which include "registers, reports and returns, as well as computer records and other records kept otherwise than in a document" (Regulation 2(4)), but not to information which is held by a relevant person in an inaccessible form (Regulation 2(1)(b)). Neither the Regulations nor the Government's guidance note gives any real help on which information would be considered accessible and which would not.

What is clear is that the Regulations require access to any records which a relevant person holds, not just those maintained pursuant to the Environmental Protection Act. The Government's guidance note provides the following commentary:

"Available information should be taken to mean any such information held by a body whether or not it was obtained as a result of that body's environmental responsibilities. It includes information collected before the Regulations came into force ... including information passed for safe-keeping to the Public Record Office (because ownership still rests with the providing body until such time - thirty years normally - that it is released for general inspection). It includes information held in written, visual, aural or database form within the body's buildings or

elsewhere. It includes information contained in documents, pictures, maps and records where records are taken to include registers, reports, returns, computer records (e.g. databases) and other non-documentary records (Regulation 2(4)). It does not include non-existent information that could be created by manipulating existing information. It does not include information destroyed in accordance with established office procedures." (Paragraph 15)

The Regulations do not extend to the disclosure of information "which is capable of being treated as confidential", but what is confidential is very closely circumscribed to comprise information affecting international relations, national defence, public security; information relating to or the subject-matter of legal proceedings, whether actual or prospective; information relating to confidential deliberations of relevant persons or the contents of internal communications of an organisation; draft or working documents or other records; and information relating to matters to which commercial or industrial confidentiality attaches or affecting intellectual property (Regulation 4(2)). It will be noted that this provision does not permit the withholding of information which itself constitutes intellectual property, for example biological records. It seems, rather, to relate to information, publication of which might prejudice intellectual property protection, for example in the form of a patent.

Information can be treated as confidential if, amongst other things, its disclosure would increase the likelihood of damage to the environment affecting anything to which the information relates. Information can also be treated as confidential if supplied by a person who was not under any legal obligation to supply it to the relevant person, who did not supply it in circumstances such that the relevant person was entitled, but for the Regulations, to disclose it and who does not consent to its disclosure (Regulation 4(3)(c)). However, the Government's guidance note urges waivers to be obtained in these circumstances:

"It would not be in the spirit of the Directive to refuse to release all volunteered information as a matter of principle. Suppliers should, therefore, be encouraged to waive this exemption. This could be done in advance or when a request for access is first made. Once access permission is granted the information should be suitably labelled for future reference." (Paragraph 69).

It will be clear that these Regulations will have wide-ranging implications for any national body charged with biological recording and that closer consideration of the Regulations will be necessary once the nature, provenance and contents of any records to be held in a national database are determined and evaluated.

IV Potential Liabilities on Dissemination of Biological Records

The potential liabilities which might arise in consequence of making available biological records, whether to the general public or to specific groups, are numerous. It is beyond the scope of this report to examine these potential liabilities in detail, but the following commentary will serve to identify the key areas of risk and how they are in practice dealt with in the context of the licensing of electronic databases.

1. Copyright Infringement

Unless a suitably wide licence is negotiated with owners of copyright in the individual records to be comprised in a national database, or a copyright assignment is secured, the dissemination of records by means of the database may constitute an infringement of copyright giving rise to claims for damages and accounts of profit, and possible applications for injunctive relief which, if granted, might prevent further exploitation of the database if the infringing records cannot be deleted or removed.

2. Moral Rights Infringement

Infringement of moral rights is actionable as a breach of statutory duty owed to the rights owner. The breach would entitle the rights owner to damages and to injunctive relief to restrain the breach or, in the case of derogatory treatment, to a disclaimer dissociating the author or director from the derogatory treatment of his work.

3. Data Protection Rights

If a national database includes personal data, which is defined in the Data Protection Act 1984 as data consisting of "information which relates to a living individual who can be identified from that information ... including any expression of opinion about the individual", then the body maintaining the database will be obliged to register as a data user under the Act and, in doing so, identify the description, source and prospective users of the data. Failure to register constitutes a criminal offence.

Data users are required by the Act to observe a number of data protection principles, one of which is that data users ensure that the data they hold is accurate and up-to-date. If a data subject suffers damage because of the inaccuracy of data held on him, he will be entitled to compensation for that damage and for any distress suffered by reason of the inaccuracy.

It is conceivable that a national database may contain personal data, for example data relating to owners and users of land and their activities, where these impinge upon the matters noted in biological records, and, possibly, data relating to the individuals providing

records. Accordingly, registration under the Act will be a necessary first step prior to the establishment of any national database.

4. Negligence

In order for a user of a national database to establish a claim for negligence, it would be necessary to prove that the person offering the database service owed him what is known as a 'duty of care', and that that duty had been breached and that damage had resulted. Such a duty usually arises where it is reasonably foreseeable that a failure to take care might cause injury to the plaintiff. Further, in a case of negligent misstatement, knowledge that the statement is likely to be relied on can suffice to establish a duty to take care.

The body disseminating a national database will therefore be well advised to put in place mechanisms to monitor the accuracy of the information contained in biological records which are incorporated in the database, and to protect itself against liability for negligence by appropriate disclaimers of liability and insurance. It should be noted that the law of contract in the shape of the Unfair Contract Terms Act 1977 imposes restrictions on the extent to which a contractual disclaimer of liability for negligence will be effective.

Negligence claims are most likely to arise in the context of a database where its contents are relied upon and subsequently found to be inaccurate or misleading. The contents may consist of factual information or expressions of opinion. Although it might be possible for a database provider to pass on liability for errors to the originator of them or, better still, seek warranties as to the accuracy of information which originators of records provide, neither course will exonerate a database provider completely. Accordingly there will be no substitute for the putting in place as part of a national scheme of systems for verification of information contained in biological records.

In the event that a claim for negligence is sustained, damages will be payable, and these are usually assessed at a level which the court considers will put the plaintiff in the position he would have been if the negligence had not occurred. In many cases, damages at this level can turn out to be extremely large. Although it has been disputed in particular cases whether pure economic loss, as distinct from loss consequent on damage to person or property, is recoverable in negligence, the provider of a national database would be well advised to disregard this as a potential means of escaping liability.

It should also be noted that liability for negligence exists in the absence of any contractual relationship. Accordingly, the database provider would be liable in principle, irrespective of whether the injured user of a database had paid a fee for his use or not.

In the environmental context, it should perhaps also be

noted that the Government places particular emphasis of the accuracy of records which may have to be disclosed under the Environmental Information Regulations. In its guidance note, it offers the following advice:

"Relevant persons are advised to consider the accuracy of any information they hold. Information could be based upon opinion rather than fact. It could be inferred, dependent on forecasts, or derived from samples. It could come from a third party and be of unspecified reliability. It could be deliberately biased by the supplier. In all cases validation could be costly. For these and other reasons, persons would be well advised to protect themselves by issuing a disclaimer where appropriate about the accuracy of information that they release to the public."

5. Implied Contractual Terms

If a national database of biological records is made available pursuant to a contract, which in most cases is likely to be the case, as a national body will undoubtedly wish to specify restrictions on use of the database and to charge for access in appropriate circumstances, then the impact of contractual provisions as to liability will have to be considered. The most important terms in this context will be those which are implied under the general law.

The Supply of Goods and Services Act 1982 will imply a term into any contract for the supply of services, for example the supply of access to data via an on-line service, that the supplier will deliver the service with reasonable skill and care, if the supplier is acting in the course of a business. If the supplier is a nationally established body, then the standard of skill and care to be expected is likely to be high. If supplying goods, the database provider will also be bound by statutorily implied terms as to the merchantability of those goods and their fitness for their purpose under the Sale of Goods Act 1979.

As in the case of liability for negligence, therefore, a national database provider will need to disclaim these implied contractual liabilities to the extent permitted by law and otherwise carry insurance. Terms implied by statute are usually classed as conditions of a contract, breach of which entitles the party who is not in breach to treat the contract as at an end and to sue for damages. Contractual damages are usually assessed by reference to the level of financial compensation which is necessary to put the party not in breach in the position he would have been in but for the breach. As in the case of damages for negligence, this level of damages can prove to be very high and, in the case of contractual claims, there is no difficulty whatsoever in suing for compensation for pure economic loss. In most contractual claims that is the only sort of loss which is suffered.

6. Confidentiality

A national database provider will also have to have regard to possible obligations of confidentiality which might be breached on incorporation of confidential biological records in the database and dissemination of those records. A duty to preserve confidentiality will usually arise where unpublished confidential information is communicated in circumstances imposing an obligation of confidence on the recipient, whether expressly or by implication. Such a duty will be breached by unauthorised disclosure. An obligation of confidence continues until information enters the public domain. Damages can be claimed and are usually assessed by reference to the loss suffered as a result of the disclosure. Where damage to personal reputation is suffered, damages can be set at very high levels. Similarly, if patentable information is disclosed, in circumstances where the right to a patent is lost, damages will be assessed by reference to the profit which might otherwise have accrued during the patent term.

As in the case of liability for negligence, the best safeguard against breaching confidence is to put in place procedures for screening existing records before their incorporation in the database and for securing warranties from providers of records in the future to the effect that the content of their records and their inclusion in the database will not breach any duty of confidence. Amongst other things, a warranty given prior to the making of a record is likely to concentrate the mind of the recorder upon the need for him to take responsibility generally for the information he records. In the absence of such warranties, records should be excluded.

✓ Conclusion

It will be seen from the matters discussed in this Report that any body charged with the establishment of a national database of biological records will have to give detailed consideration to the impact of intellectual property law on its activities, particularly copyright law and the new law relating to database rights, when it comes into force. Knowledge and understanding of the implications in this area, and a willingness to take account of them by ensuring appropriate financial, legal and administrative support are the key to achieving a resource which can be made widely available without fear of legal redress.

Similarly, the climate of the law within the United Kingdom and beyond is clearly such that biological records, as and when made for public purposes, will be increasingly available to the public, who will demand that they meet suitable standards of accuracy and reliability, especially when access is made available for a fee. Although the statutory obligations to make biological records are currently few, the climate here too

appears to be changing, as international obligations in the domain of conservation impose a responsibility upon individual states to engage actively in environmental monitoring.

It has been outside the scope of this Report to deal in detail with the manner in which a national database of biological records might be turned to account. Clearly, however, there will be considerable food for thought in determining the extent to which particular data should be made available, to whom data should be made available and, not least of all, for what level of consideration data should be made available. Licence agreements will be required, addressing the particular uses for which access might be granted. Users will inevitably have to be categorised according to the economic benefit which access to data affords them, and their ability to pay.

It is hoped that this Report will have laid the ground-work for a practical consideration of these matters when they arise.

Cathleen Blackburn

22 December 1993
(Revised 9 December 1994)

Annex I Extent of Statutes

STATUTE	SCOTLAND	NORTHERN IRELAND	CHANNEL ISLANDS	ISLE OF MAN
Copyright, Designs & Patents Act 1988	✓	✓ (See ss. 157, 207, 304)	× No Order made under s. 157	× No Order under s. 157 (but Copyright Act 1956 continues to apply)
Plant Varieties and Seeds Act 1964 as amended by Plant Varieties Act 1983		✓ Extended by Order		✓ With modifications; Parts I and IV only. See SI 1969/1829
Patents Act 1977		✓ Subject to interpretation (s. 131)	×	✓ With modifications; see s. 1 1978/621
Wildlife & Countryside Act 1981		× Except as provided by s. 74		×
Environmental Protection Act 1990 (relevant sections)		×		
Environmental Information Regulations 1992				
Data Protection Act 1984			× (although s. 43 gives the power to extend)	× (under s. 43 power)
Unfair Contract Terms Act 1977	✓ (limited ss. 1 - 14 application)		×	
Sale of Goods Act 1979	✓		×	×
Supply of Goods & Services Act 1982	×	✓	×	×

* Where a statute applies to Scotland, the provisions may differ in detail, but this is recorded in the Act itself, usually by the words "this Section does not apply to Scotland", or similar.

Annex 2

Permitted Acts in relation to Copyright Works

1. Fair Dealing

Fair dealing with a literary or dramatic work, or the typographical arrangement of a published edition, for the purposes of research or private study does not constitute infringement, provided that the researcher or student does his own copying or the copying is done by a librarian complying with the rules governing copying by libraries (see Section 3.6.4 below) or by a person who has no reason to believe that the copy he makes will result in the making of multiple copies for more than one person at substantially the same time for substantially the same purpose. Fair dealing with a work for the purpose of criticism or review does not infringe copyright in that work, provided that it is accompanied by a sufficient acknowledgement.

What constitutes fair dealing will depend upon the facts of a given case. The volume of material taken from a work will be relevant, as will the purpose or purposes in taking the material. In the case of research or private study, account will be taken of whether the research or study is in fact private, or whether it is, for example, part of a programme of education for a number of persons or commercial. It will be relevant also if the copying is such that it enables the copier to do without the author's work altogether, for example by not buying a published copy of his work.

2. Incidental inclusion of Copyright Material

Copyright in a work is not infringed by its incidental inclusion in an artistic work, sound recording, film, broadcast or cable programme.

3. Education

Copyright in a literary or dramatic work is not infringed if it is copied in the course of instruction, or in preparation for instruction, provided the copying is done by the teacher or the pupil and is not done by means of a reprographic process. Reprographic processes include photocopying and any other copying by electronic means.

Short passages of published literary or dramatic works can be included in collections intended for use in educational establishments which consist mainly of material in which no copyright subsists, provided that sufficient acknowledgement is made. A maximum of two excerpts from copyright works by the same author may be used by the same publisher in any five-year period.

Performance of a literary or dramatic work before an audience of teachers and pupils at an educational establishment, and before others directly connected with

the activities of the establishment, by a teacher or pupils in the course of the activities of the establishment or by others at the establishment for the purposes of instruction is not a public performance for the purposes of copyright infringement.

Recordings of broadcasts may be made by or on behalf of an educational establishment for the educational purposes of that establishment without infringing copyright in the broadcast, or in any work included in it, unless there is a licensing scheme in place for the grant of licences.

The making of reprographic copies of passages from published literary or dramatic works by or on behalf of an educational establishment for the purposes of instruction will not constitute infringement of copyright if no more than 1% of a work is copied in any quarter, unless there is a licensing scheme in place for the grant of licences and the person making the copies knew or ought reasonably to have known of such scheme.

4. Libraries and Archives

A librarian of a library prescribed by The Secretary of State may make and supply a copy of an article in a periodical, provided that the person requesting the copy satisfies the librarian (usually by signed declaration) that he requires the copy for research or private study; that only one copy is provided of only one article in the periodical in question; and that a charge is made for the copy which is not less than the cost of its production. In addition, to prevent the making of multiple copies, the librarian must be satisfied that a particular request is not related to similar requirements of other persons.

A librarian may also make and supply a copy of part of a literary or dramatic work from a published edition to a person engaged in research or private study on the same terms as relate to the supply of copy articles, provided that the copy is of no more than a reasonable proportion of the work.

A prescribed library may also supply a copy of an article or the whole or part of a published edition of a literary or dramatic work to another prescribed library provided that, in the latter case, the librarian making the copy does not know, or could not reasonably have ascertained, the name and address of the person entitled to authorise the making of the copy. The conditions are that only one copy is made, and is supplied at a sum not less than the cost of production. In certain circumstances, a written declaration as to the inability to identify the person entitled to authorise copying is also required. Prescribed libraries may also make replacement copies of works for the purposes of preservation of their own permanent collections or for other prescribed

libraries to replace items in their permanent collections which have been lost, destroyed or damaged, provided that it is not reasonably practicable to purchase a copy for such purposes. A prescribed library may also make and supply a copy of the whole or part of an unpublished work contained in a document held by it without infringing copyright provided that the librarian is not aware of any prohibition on its copying, although it must be noted that this provision applies only in relation to works created before 1 August 1989.

Where an article of cultural or historical importance or interest cannot be lawfully exported from the UK unless a copy of it is made and deposited in an appropriate library or archive, the making of such a copy does not constitute copyright infringement.

5. Public Administration

Copyright in a work is not infringed by anything done for the purposes of parliamentary or judicial proceedings or for the purposes of reporting such proceedings. The position is the same in relation to the proceedings of a Royal Commission or statutory enquiry. Copyright is not infringed by the copying of factual information contained in materials open to public inspection or on an official public register, or by the provision of copies of such materials to the public, where this facilitates the exercise of the right of inspection.

An unpublished literary or dramatic work which is communicated by the copyright owner to the Crown for any purpose in the course of any activity carried out by the Crown may be copied or published by the Crown in certain limited circumstances without infringing copyright in such work.

Public records (within the meaning of the Public Records Act 1958, the Public Records (Scotland) Act 1937 and the Public Records Act (Northern Ireland) 1923) may be copied without infringing copyright. The doing of any act specifically authorised by Act of Parliament does not infringe copyright, unless the Act in question provides otherwise.

6. Typefaces

The design of a typeface will usually constitute a copyright artistic work. However, it is not an infringement of such copyright to use a typeface in the ordinary course of typing, composing text, typesetting and printing; to possess an article (e.g. a typewriter) for the purpose of such use; or to do anything in relation to material produced by such use.

Where articles are specifically designed or adapted for producing material in a particular typeface with the licence of the copyright owner (e.g. typewriter keys), further such articles may be made twenty-five years after the end of the calendar year in which the first such articles are marketed.

7. Works in Electronic Form

Where a copy of a work in electronic form is purchased on terms which expressly or impliedly allow the purchaser to copy the work or adapt it, or make copies of an adaptation, or the purchaser is so permitted by any rule of law, a person acquiring the work from such purchaser is entitled to use it without infringing copyright, as is any subsequent transferee.

Annex 3

CCBR: Specification for legal advice in connection with biological recording

The Coordinating Commission for Biological recording (CCBR) is engaged in an investigation of biological recording as currently carried out in Britain with a view to preparing recommendations for the establishment of a national scheme.

In Britain at present, there appears to be no mandatory, legal/statutory requirement for biological records to be made, maintained, or made publicly available. EC and international legislation in the pipeline may alter this. The apparent absence of any statutory body charged with such activities is a serious handicap to promoting cooperation of existing record holders.

If a national scheme of biological recording, drawing on the various sources of data, were to be introduced, questions would arise about ownership and copyright of data, on data protection in relation to computerized records, liabilities of the authority promoting a national scheme, and limitations on freedom of use of such data by the authority responsible for the national scheme. Both British and EC law presumably affects these matters as do international copyright agreements, etc.

Two issues have emerged on which professional legal advice is necessary. They are set out below together with supporting notes on the situations.

The Issues

1. If a national scheme is introduced, who will own the data; how will copyright affect these issues; how will individuals' rights, including intellectual property rights, affect the matter if the national database supplies such information to other bodies whether freely or through sale; what liabilities might be incurred within the system and if data are supplied externally from the system; what legal problems will total computerization of data cause? Are there any other likely related legal issues related to a national scheme?
2. Does a mandatory, legal/statutory requirement exist, or is one likely to exist, in current or prospective legislation, for biological records to be made, kept and made available publicly? Does the existence of legislation which implies the use of such records constitute a legal requirement to make and maintain them?

Biological Recording: definition, current practice and a national scheme

Definition

- (i) For the purposes of CCBR's current enquiry and future recommendations, biological recording has

been defined as:

The collection, collation, storage, dissemination and interpretation of records both in space and time, of kinds and numbers of wildlife, assemblages of organisms and their habitats, especially when the records are related to specific, localized sites.

Current Practices of biological recording

- (i) The vast majority of biological records are made by volunteers either for their own use, or in connection with some organization or society to which they belong, eg a County Wildlife Trust such as BBONT, the British Trust for Ornithology, the British Dragonflies Society. Others are made by educational establishments, eg schools, university departments; local record centres; conservation agencies, eg English Nature; or government departments, DoE, MAFF; or professional environmental consultants.
- (ii) Verification of a record's accuracy is a matter determined by the various practices of the compiling organizations. This may range from meeting all, or any one of various requirements such as deposition of a voucher specimen, or comparable record, eg a suitable photograph, submission to an acknowledged referee, or having followed rules laid down by the organization. Some compiling agencies may carry out further checks if they are concerned about the accuracy or plausibility of a record.
- (iii) Records may be kept in notebooks, card indices or - a small percentage - as computerized records. The records may be kept privately by an individual or organization, or submitted to a wildlife trust, a scientific society, or local record centre (often run by a local authority, sometimes by local natural history societies). Records so submitted usually indicate the originator by name as part of the record. A proportion, mostly from the scientific and natural history societies and conservation agencies, find their way to the Biological Records Centre, maintained by NERC. This is the single largest computerized archive in Britain, but the BTO and some local record offices have quite large holdings. A further complication is that many records are made as the result of surveys by societies, for example, but the surveys are funded by bodies such as the conservation agencies, DoE etc., technically, therefore, they come under Crown Copyright. Even so they may be kept and used by the collecting body rather than the funding one, eg BTO surveys are often funded by conservation agencies but the records are maintained, and often published by BTO with acknowledgement to, and presumably the permission of, the funding agency.

- (iv) Records may or may not be published: many simply remain in the individual's or organization's archive. Publication not infrequently includes either specifically, or by means of a general acknowledgement, the name(s) or the originator(s). Publication may be in periodicals, books, or as compiled distribution maps in atlases. Some are privately printed, others commercially produced and yet others by HMSO under Crown Copyright. So far as can be ascertained, no archive is required to make their data public and many records are either not publicly available, eg conservation agency data, or only on request.
- (v) Some of these archives use, or sell to potential developers, records in connection with planning enquiries etc. They will often give the same records free to *bona fide* scientific investigators or naturalists. It is usual for any individual who has contributed records to an organization or archive to have free access to all its other records as an acknowledgement for their assistance, however small, in compiling the archive.

A National scheme

A national scheme would form a wholly computerized network of regional/local recording agencies together with a smaller number of centres possessing major holdings of records. Most of these would be existing compiling organizations. It would primarily be a compiling agency rather than actually making records itself. Compilations would be made from all possible sources, provided the records met a minimum standard the scheme would have to define. It would use the records for all existing purposes, ie biological research, environmental assessment - both scientific and commercial; in connection with statutory planning activities; and in land management of all kinds including commercial activities. It would also, as a national archive, no doubt be seen as a source of statistics of various kinds by national and local government. Potentially, records in a national scheme would have to be publicly available in some way, but not necessarily freely.

Further background Notes on the Issues on which advice is sought

- (a) No notes are provided on matters of ownership, data legislation, copyright etc., since these are beyond CCBR's expertise.
- (b) The only document which appears to bear on the accessibility of records to the public is *EC Directive 90/313* on the freedom of access to information on the environment. This has been the subject of a statutory instrument which came into force on 31st December 1992, but its application to biological data, collected or maintained in various ways is not clear. Clarification is required and this needs to be

considered in relation to the second major issue on which advice is requested.

- (c) There is no statutory body in Britain, like the Ancient Monuments Commission etc., responsible for making or maintaining biological records, as such. The nearest to a requirement may be duties laid on the conservation agencies in the Environmental Protection Act 1990. Whether any words in this act can be interpreted as requiring the mandatory collection and maintenance of biological records needs to be elucidated. There appears to be no requirement for public access, even if there is an implied requirement for records to be kept and maintained. Note, however, that the Act preceded the Statutory instrument referred to in para (b). (N.B. The Biological Records Centre, already mentioned, is maintained by the National Environment Research Council and acts as a national records centre. However, it does not appear to be mandatory on NERC to maintain this centre and it has no powers to gain records from other sources save by negotiation and agreement.)
- (d) There are a number of international and EC conventions and directives which may require or imply the collection, maintenance and access to biological records, and one awaiting ratification.

The *Ramsar Convention* on wetlands appears to require species to be monitored, as does the *Bonn Convention* on migratory species, while the *Bern Convention* which deals with threatened habitats implies that species records should be kept. But it is not clear whether or not actual records have to be made, or by whom in Britain.

The *EC Birds Directive* and the *EC Habitats Directive* appear to require records to be kept of some species of birds and various other species, respectively. Once again, it is not clear whether records have actually to be made and kept nor who is responsible.

Just over the horizon is the *Biodiversity Convention* (Article 7) which Britain signed at Rio last summer but has not yet ratified. It appears to require some records to be kept.

The matter of public access to any records kept under these various conventions and directive is unclear.



**Bibliography of publications and other documentary sources
consulted in the course of the review**



Bibliography of publications and other documentary sources consulted in the course of the review

N.B. This bibliography is not intended to be a comprehensive review of literature relating to biological recording in the UK.

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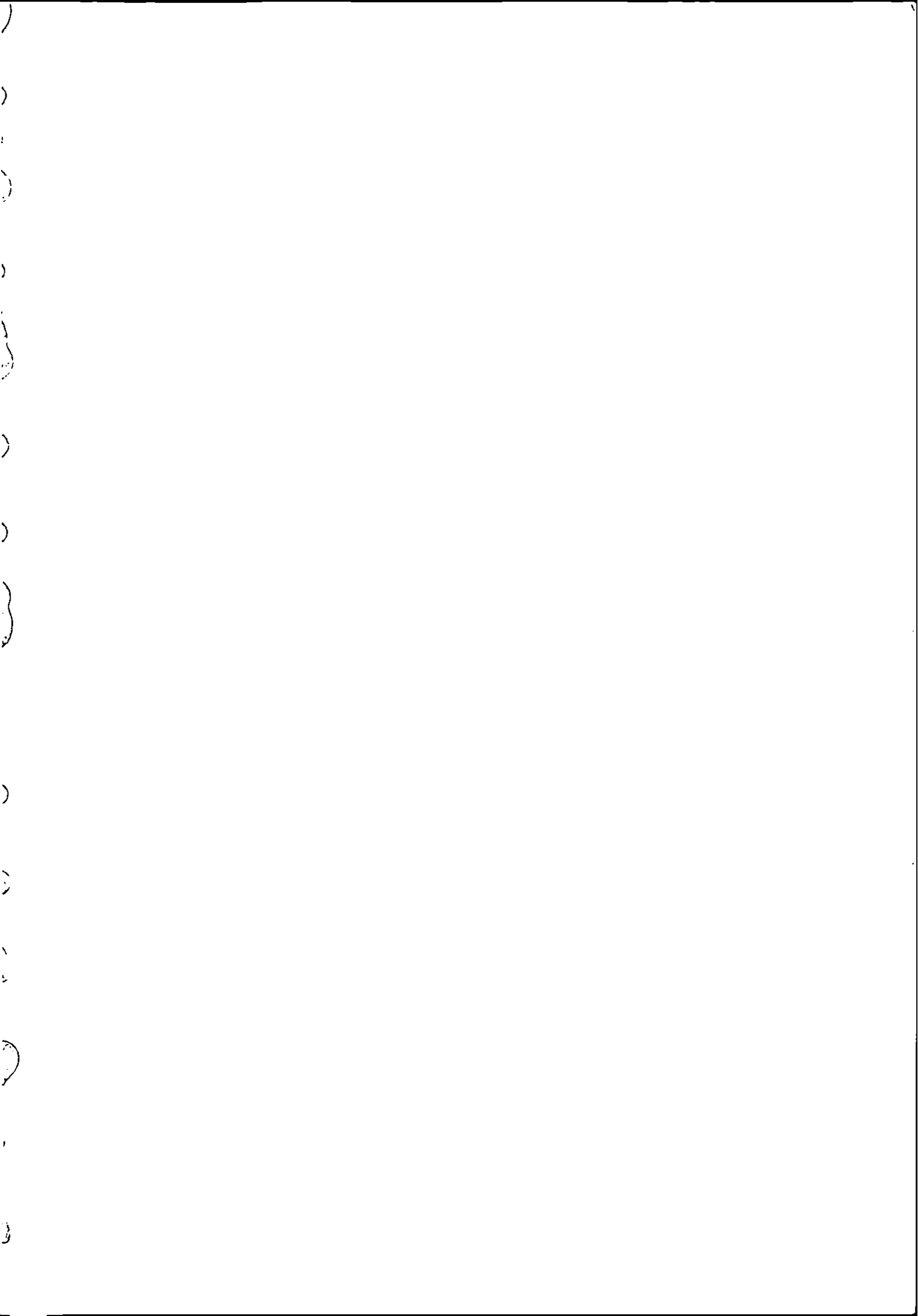
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