# NATIONAL FEDERATION FOR BIOLOGICAL RECORDING

## NEWSLETTER 6, MARCH 1988

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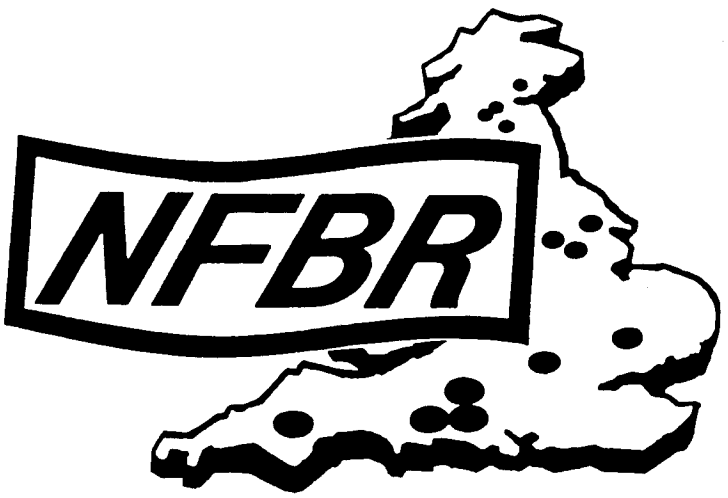



NATIONAL FEDERATION FOR BIOLOGICAL RECORDING

# NEWS RECORD

## NO TRACE OF NATIONAL RECORDS ?

### Biological Records Centre Threatened

NERC has identified the Scientific Services programme of its Terrestrial and Freshwater Sciences Directorate (of which BRC is part) as an 'area of lower priority work to which pre-redundancy measures will apply' and in which NERC has to reduce its scale of activities.

### Ireland Disappeared ?

The Irish Biological Records Centre was part of An Foras Forbartha which was disbanded by the Irish Government at the end of 1987. We haven't yet been able to find out what has happened to the staff, data and archives of IBRC.

## DEVELOPING ENVIRONMENTAL ASSESSMENT

### GOVERNMENT PROPOSALS

NFBR Newsletter 3 reported the April 1986 publishing of the Government's preliminary proposals for implementing the European Community's Directive on Environmental Assessment, EEC 85/337. The Directive was notified to member states in June 1985 and was to be implemented by them within three years. The Government is aiming to implement the directive by 3 July 1988.

In early January this year the Department of the Environment (DoE) and Welsh Office released detailed proposals for the implementation of the directive in England and Wales. These proposals take into account comments received on the April 1986 consultation paper. The Planning and Development Control Division of DoE invites comment on the current paper by 25 March 1988 in order to organise whatever legislation is necessary by the July deadline.

### YOUR ROLE

After you have ploughed through the rest of this article please think about the implications of the Government's proposals on the provsion of adequate Environmental Assessment (EA) and the use of biological data sets and their collaters in the compilation of EA. Full details of the proposals are available form DG Egerton, DoE, Room C13/10, 2 Marsham Street, London SW1P 3EB. The NFBR executive will be preparing comment for the DoE on the proposals so please get in touch ASAP to raise any points you may have. DoE are due to issue a revised version of the explanatory booklet 'Environmental Assessment of Major Projects in England and Wales'. for consultation.

### THE THREE ANNEXES

The EEC Directive requires that for certain types of development the developer must supply an EA with its application for planning consent. The EA must be taken into account by the 'competent authority' when deciding the fate of the developer's application. Further, the directive requires that bodies with relevant environmental responsibilities and the public, be given a chance to comment on the development proposals and that they be allowed to see the developer's EA.

Projects for which an EA must be prepared are listed on Annexe 1 of the directive and include power stations, motorways and the disposal of radioactive waste. There is a second annexe containing many more types of development which may require an EA if the proposed development is judged to have a significant environmental effect. The third annex details the information an EA should contain. Essentially an EA should look at the impact of the development on : human populations, flora, fauna, soil, water, air, climatic factors, material assets including the architectural and archaeological heritage and landscape; the EA should examine the inter-relationship between these factors.

### PLANNING ACTS TAKE THE STRAIN

The Government sees the majority of the EA work falling within controls provided by the Town and Country Planning Act 1971, pt III. Hence, the January proposals include a draft circular to local planning authorities entitled 'Environmental Assessment : Implementation of the EC Directive'. The draft circular explains the directive, the procedures necessary when an EA is required, the types of annex I and II projects for which local authorities will be responsible, and the criteria and thresholds to identify annex II projects needing EA.
The draft circular also explains the powers of the Secretary of State to direct that EA is or is not required in any particular case or class of cases. The Government thinks that only a few dozen Annex II developments per year will require EA. This is in line with Government policy to minimise the extra demands the directive might place on developers and public authorities.

### OUTSIDE THE PLANNING ACTS

Not all Annex I or II types of development are covered by the local authority planning system. For example, the Forestry Commission will have responsibilities for EA procedures associated with afforestation proposals. Similarly MAFF will have responsibilities for EA in agricultural development proposals; the Department of Energy for power stations and overhead lines; The Department of Transport forhighways and transport projects, the Crown Estates Commissioners for coastal water's minerals development and fish farming.

### PRIVATE/ HYBRID BILLS EXCLUDED

The EEC Directive specifically excludes from EA developments serving national defence purposes and development enabled by specific acts of national legislation ie: Private and Hybrid Bills. A number of the latter have recently been used to promote developments with a considerable impact on the Environment eg. Felixtowe Dock, Channel Tunnel, Cardiff Bay Barrage.

# GIS NEWS

Two meetings promoting Geographical Information Systems and their applications to ecological planning have taken place in early 1988. Both meetings occurred before NFBR Newsletter 5 could give you adequate warning of them and so NFBR membership addresses were loaned to the organisers of the events to allow circulation of the pre-conference literature to you. It is hoped to carry reports of the meetings in a future NFBR Newsletter. In case you missed out on the conference literature, the meetings were :

### Wildlife Habitat Surveys and Their Computerisation

18 February 1988 - a one-day seminar run by Wigan Metropolitan Borough Council, Speakers :

Dr K Charman, NCC - Introduction to Phase 1 Habitat Survey.
Mr R Green, CP Agency Project Manager - Setting up of a Survey Team;
Mr A Hardy, Wigan MBC Planning Dept - Using the Survey in a Planning Department;
Mr G F Marshall, Marshall's Computer Services - Computerisation of Habitat Surveys.
The Seminar provided an opportunity to see Wigan's digitised phase 1 survey which was featured in NFBR Newsletter 5.
For further details contact : **Acting Director of Technical Services, Wigan MBC, Civic Centre, PO Box 16, Millgate, Wigan, WN1 1YD. For the attention of Miss S Crombie.**

### Geographical Information Systems for Planning and Ecology

24 - 26 March 1988 - A workshop at ITE Merlewood, held under the umbrella of the International Association of Landscape Ecology.
The workshop aimed to compare the available GIS and identify features which are desirable for applictions to ecological planning. For further information on what promised to be a very interesting and detailed workshop please contact :
**Dr R G H Bunce, ITE, Merlewood Research Station, Windermere Road, Grange over Sands, Cumbria, LA11 6JU.**

# SCOTTISH NEWS

### Biolink '87

The Biological Recording in Scotland Campaign (BRISC) held its Annual Conference 'Biolink '87' at Perth Museum last September. The Conference attracted new exhibitors and included exhibits of the several WATCH recording schemes; Scottish Wildlife Trust's 'Butterfly Quest in the Lothians' which is a new recording project sponsored by the Edinburgh Butterfly Farm; a presentation of urban survey work by Glasgow Urban Space Initiative.

At the following AGM, retiring chairman Richard Brinklow summarised BRISC's activities during 1986 - 87 which have ranged from the organising of a Woodland Species Survey to the initiation of a revision of the 'Guide to Biological Recording in Scotland'.

### Aberdeen Lost ?

BRISC is investigating reports that Aberdeen Local Records Centre has ceased to function following the redundancy of its co-ordinator Ken Watt. Ken has apparently lost his post during cut-backs. Representations are being prepared by BRISC indicating its concern over the situation and the loss of a records centre.
For further information of BRISC's activities contact :
**BRISC c/o Scottish Wildlife Trust, 25 Johnston Terrace, Edinburgh, EH1 2NH**

# SURVEY REGISTER

### SHOW BRISC YOUR MUSSELS

SCOTTISH FRESHWATER MUSSEL RECORDING SCHEME

Fred Woodward of Glasgow Museum is co-ordinating a survey of the three species of freshwater mussel known to occur in Scotland for the Biological Recording in Scotland Campaign (BRISC). The main aim of the project is to locate living populations of the Pearl Mussel Margaritifera, which has shown a widespread decline throughout Europe due to factors including pollution, decline of fish stocks and some persecution by pearl collectors.

Pearl Mussel Margaritifera.

USE YOUR FORMS

The Newsletter carries the survey literature as an insert and we hope you will take the opportunity to use the forms when you visit Scotland. The survey involves the collection of dead shells from the banks of water bodies and sending them to the co-ordinator with supporting information. The survey is aimed at people with no expertise and Scottish Wildlife Trust has targetted those whose work brings them into contact with water bodies as likely participants.

SOUTHERN RECORDS

BRISC would very much like records of freshwater mussels from the rest of the British Isles and issues a plea to NFBR members to supply whatever information is under their control be it from collections, manuscripts (or computerised databanks !) or recent records. For further information or to submit records please contact :
**Fred Woodward, Art Gallery and Museum, Kelvingrove, Glasgow, G3 8AG. Tel (041) 357 3929.**

### BIOLOGICAL SURVEY OF COMMON LAND SURVEY FEATURE

A major new National survey started in November 1987.
Dr Ian Francis, project organiser reports.

*RURAL SURVEYS RESEARCH UNIT*

The Rural Surveys Research Unit within the Department of Geography, Univesity College of Wales Aberystwyth has been awarded a contract by the Nature Conservancy Council to compile an inventory and appraisal of the biological value of all common lands over 1 hectare in size in England and Wales. Work began in November 1987, and is scheduled to finish at the end of March 1990. A team of three (Dr Ian Francis, Marion Finch and Nicola Penford) supported by a data manager (Jan Baptiste) will be compiling information from existing records and filling the gaps with field surveys where necessary.

## 8,700 COMMONS

There are known to be 8,700 registered commons in England and Wales, covering as much as 600,000 hectares. At present much of this land is not managed appropriately for wildlife, despite many statements that common land is of disproportionate importance for nature conservation. Many upland sites are suffering from overgrazing, but, conversely, many lowland commons are hardly managed at all, as grazing rights in particular have become unused. Several attempts in the past have been made to change the legislation relating to common land, and recently, the Countryside Commission's Common Land Forum produced what is widely recognised as the basis for any future legislation, in its 1986 report.

Proposals therein to change significantly the manner in which commons are managed, and also to provide a universal public right to access, were the stimulus for the survey. Although many attempts have been made in a number of counties to survey common land, much of the information is piecemeal and incomplete, and only a few counties hold a relatively complete picture of the biological value of their commons.

## COLLATION AND FIELDWORK

The survey aims to collate all existing information from sources such as NCC, County Trusts, National Trust, BRC's and specialist county recorders, compile record cards for each site, and then survey all other sites to complete the picture for each county. Regional and national summaries will be compiled, but the most important use of the information will be to feed back data for individual sites to interested parties. Brief management recommendations for each common will be made, and it is hoped that these will form the basis of subsequent management decisions if legislation makes management more effective. The survey will concentrate on habitats and flora, but the importance of sites for fauna will be summarised from existing records and some fieldwork information.

## SUPERFILE DATABASE

Information will be stored on IBM PC clone computers (20 MB hard disc) using SUPERFILE database. This system has been chosen since all other information on common lands already held by the Unit is stored in this way, and the 'pages' containing biological information will be appended to the site files on the database for each common. The system allows sorting by any combination of variables, and should facilitate analysis of the common land biological information by region and nationally. Summarised thus, the work may seem relatively straightforward

## HELP IS NEEDED

It is clear that the task is extremely large, and a balance between accomplishing the project within the time available, and superficiality, will need to be struck. Since common land is found in every county and in almost every conceivable habitat type, much information already exists in the files of many organisations. This reduces the amount of fieldwork necessary, but means that large quantities of information need to be sifted and summarised, which can be extremely time-consuming. We would be grateful for the co-operation of any organisation which collects biological survey information, and indeed, we shall be approaching a range of relevant bodies for help with the provision of information.

## ACCESS TO DATA

The end product should be not only biological and management information for many individual commons, but a valuable synthesis and overview of an important natural resource. Although the survey is being undertaken for the NCC, in most cases, reasonable requests for information from other organisations concerned with nature conservation will be considered.

We would be happy to provide further information about the survey to anyone interested in common lands, and would be pleased to receive any comments on the biological value of commons in any specific areas. Please contact Dr Ian Francis at : **Rural Surveys Research Unit, Department of Geography, University College of Wales, Aberystwyth, Dyfed, SY23 3DB**
**Tel : (0970) 3111 ext 3353.**

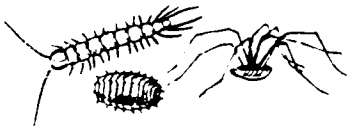
## EDITORS NOTES

The Countryside Commission's publication CCP 215 ' Common Land - The Report of the Common Land Forum' is available at £7.50 inc p&p from **The Countryside Commission, Publications Despatch Department, 19/23 Albert Road, Manchester, M18 2EQ**

Please review your data holdings for information on Common Land in your area to be ready to support this survey and to be ready for changes following legislation, though there is no timetable for this at present. A first step would be a trip to your County Council who hold a register of Common Land compiled after the 1965 Commons Registration Act. The registers are open to public examination, but are beset by anomalies and will be out of date. The quality of the Registers was an area major concern for the Common Land Forum who made recommendations in line with the idea that registers should constitute a living record of common land, ownership of the soil and of common rights.

# TICKING OFF THE TRICLADS

## AN APPEAL FOR CO-OPERATION FROM YNU



The Yorkshire Naturalists Union is considering the production of species cards for field recording of millipedes, centipedes, woodlice, harvestmen and perhaps triclads. The cards would be five by three inches and similar in format to the Conchological Society's mollusc cards.

Before the YNU makes a decision on producing these cards it would like to know if they are likely to be useful to other organisations. The number printed will be influenced by this. If your organisation would be interested in using such cards and you would like to be kept informed of the likely cost of the cards please send an indication of the number you may need and an SAE to **W A Ely, 8 Clifton Lane, Rotherham, South Yorkshire S65 2AA.**

## EDITOR'S NOTE

The Biological Records Centre has produced cards for the groups under consideration by the Yorkshire Naturalists Union

who consider the BRC cards difficult to use in the field. The BRC cards have those vital code no's on them which smooth computerising of records while the proposed smaller cards may be a handy field jotter for some people (who may perhaps later transcribe the information to BRC cards). The BRC cards : RA27 - Harvestmen; RA58 - Millipedes; RA58 - Centipedes; RA51 Woodlice and yes, RA38 - Triclads are available free to active recorders from : BRC, ITE Monks Wood Experimental Station, Abbot's Ripton, Huntingdon, Cambs, PE17 2LS. Tel (04873) 381.

# COMPUTING NEWS

### Editor's Bit

Micro-computers with the processing power and storage capacity necessary to play effectively with biological data-banks are now being produced at prices which most organisations can begin to afford. 'Cheap' IBM PC compatible machines and the introduction of more flexible database software has hotted up computer developments in biological recording and the editor is struggling to keep up. This issue of the Newsletter brings : a survey of computers in environmental organisations; what is going on in NCC; the Trusts, Cornwall and Europe.

Dr Stuart Ball's "Biological Recording Package for Local Record Centres" has given new hope to those wanting an easily adoptable solution to biological record processing and the package is gaining support following demonstrations to the NFBR computing working group and various parts of NCC. NCC have been able to use some of the elements of Stuart's package in the design of COREDATA, the heart of NCC's biological data software. This, coupled with the Biological Recording Package's compatibility with NCC systems, has led to a higher level of interest from NCC in the possibilities of processing biological records outside NCC than has previously been the case. To catch up on developments, read the report on the Rotherham NFBR workshop and STOP PRESS below.

## STOP PRESS

### Cornish Gift

The Cornish Biological Records Unit has been given (sic!) a 600 Mb Prime computer on which to use the new local records centre package developed by Dr Colin French using INFORMATION PC.

### Bill for £4,000

NCC is to provide £4,000 for the purchase of computer hardware for Rotherham's Clifton Park Museum Biological Records Centre, on condition that the data base will be compatible with NCC's Coredata. This is a welcome boost to keeper Bill Ely's efforts to bring computing to Rotherham and hopefully compatible computing to other data banks.

### Losses and Gains at RSNC's Computer Unit

Vanessa Howard, head of the Royal Society for Nature Conservation's computer unit is due to move to a post in the Lancashire Trust. As the Newsletter goes to press RSNC is busy recruiting a new head for the unit and an additional assistant.

The Trusts have a chance to catch up on computing developments at the 'Computers in the Trusts' Conference, 8 - 10th February in Swanwick Derbyshire. The conference includes a session on the site recording database and a 'desk top publishing' demonstration.

### NCC/NGO DATA HANDLING GROUP

As reported in Newlsetter 3 the NCC / Non Governmental Organisations (NGO) Data Handling Group was set up by NCC and Wildlife Link as one of a series of working groups to implement NCC's strategy in 'Nature Conservation in Great Britain'. NFBR is represented on the Group and has presented a review of electronic checklists compiled by Graham Walley. Dr Meg Game, GLEU, represented NFBR at the most recent meeting held on 3rd December 1987. Meg reports that NCC revealed details of its computer equipment programme and that John Hellawell (NCC) is to compile a master table to cross-relate the many existing habitat classification systems.

The next meeting will be at NCC GBHQ Peterborough on 17th March where the group will see a demonstration of COREDATA and Stuart Ball's recording package.

### COMPUTING IS GREEN

A Review by Dr Stuart Ball

#### A SURVEY OF COMPUTER USAGE BY ENVIRONMENTAL ORGANISATIONS

A new publication 'Green pages' to be published in April by Routledge, will be a guide to Environmental organisations and issues. A survey of the use of computers was carried out by J Shopley for Green Pages by sending a questionnaire to 127 organisations in the UK - 83 replied of which 64 were using computers and 19 were not. The questionnaire ran to 7 pages and included 19 questions which concentrated on what sort of hardware and software were in use, how it had been acquired and the effects on the organisation's work. It was rather weaker on what such organisations are actually using computers for.

#### 352 ENVIRONMENTAL COMPUTERS

The computers in use included 36 mini-computers, 316 micros and 642 terminals (attached to mainframes or minis). These figures are presumably heavily influenced by the inclusion of a few large organisations like NCC, Countryside Commission, ITE, Forestry Commission and various bodies attached to universities, who are likely to have access to mainframes or minis, whilst the largest number of respondents were County Conservation Trusts who mostly have only a single micro. The amount spent on equipment reflects the diversity of organisations with the largest number (19) falling in the £1,000 - £5,000 category, but with a substantial number (8) having spent over £100,000.

#### WHAT MACHINES ARE BEING USED ?

Hardware included machines from 34 manufacturers of which Com arts (recommended to County Trusts by RSNC with grant aid from NCC) were the most popular (19 organisations), but only one organisation outside the RSNC orbit used them. IBM compatible micros (IBM, Olivetti, Apricot, Amstrad PC, Compaq etc) were the next most popular.

The choice of operating system is often governed by the make of computer so CP/M (for Comart and Amstrad PCW's etc) was the most popular and MS-DOS (for IBM compatibles) came second. The most popular commercial software packages were Wordstar (used by 34% of organisations) and dBase II (30%), but a wide range of other wordprocessors, databases, spreadsheets and accounting packages were mentioned.

### WORD OR SCIENTIFIC PROCESSING ?

What the computer was used for was only covered in general terms and the categories of use were set out as a list of headings with tick boxes in the questionnaire without being further defined. It seems to me that some of the categories overlap (Mailshots usually involved a wordprocessor and an address database for example). This is the table of responses (rearranged by popularity) :

| | Organisations (out of 64) No | % |
|---|---|---|
| Wordprocessing | 58 | 91 |
| Address databases | 54 | 84 |
| Other databases | 49 | 77 |
| Mailshots | 38 | 60 |
| Accounting | 26 | 41 |
| Scientific Processing | 26 | 41 |
| Graphics | 16 | 26 |
| Networking | 14 | 22 |
| Graphical Information Systems | 10 | 16 |
| Desktop Publishing | 9 | 14 |

### EFFICIENCY

Most organisations (80%) felt that the use of computers had improved their efficiency in that they were able to achieve more and do things that were previously not possible, and 13 out of the 19 organisations without computers felt they would benefit if they had them. Only 4 organisations felt their efficiency had suffered, but just under half (48%) felt that computerisation had changed their working habits. Only one of the smaller organisations had taken on extra staff to install computers and train others in their use, though most of the larger organisations (with installations costing over £50,000) employed staff for system administration and training. Annual operating costs were typically 10 - 25% of the capital cost of the hardware (though only 35 out of the 64 organisations offered an estimate).

### HELP .... EXPERTISE NEEDED

The most common problem with computers was lack of expertise (29 organisations) and the lack of experienced staff was the most common obstacle both to expanding existing installations and for organisations without computers acquiring them. Hardware faults had caused problems to 11 organisations, but poor software support, shortcomings of manuals and software bugs were more often a problem (22 organisations). Financial constraints were seen as a major reason for organisations without computers not acquiring them (12 out of 19), but interestingly it was only given as a reason for not expanding their installations by 4 out of the 64 organisations with computers.

In general this was an interesting attempt to examine the subject, but I would have liked to see the responses from large organisations with extensive access to computers analysed separately from the majority of respondents with very limited facilities. I would also be interested in much more details of what people are using computers for.

"Green Pages" is being prepared by 'Sustainability Ltd' and we would like to thank J Shopley of Sustainability Ltd for access to the computer survey data.

SUSTAINABILITY LTD

## ROTHERHAM WORKSHOP

### NFBR Computer Recording Systems and Data Standards Working Group.

### 30 AT ROTHERHAM

NFBR members were invited to a meeting of the working Group held at Clifton Park Museum, Rotherham on 9 October 1987. The Workshop was attended by c 30 representatives of record centres, planning departments, land managers and computer divisions. Dr Stuart Ball presented a demonstration of the "Biological Recording Package for Local Record Centres" which he had developed from NCC's Invertebrate Sites Register database. Claire Appleby then demonstrated the map-based system she had developed for the Wiltshire Biological Records Centre using AUTOCAD.

### STUART BALL'S REVELATION

The "Biological Recording Package for Local Record Centres" is written on REVELATION, which is an implementation of the PICK Operating System for IBM compatible microcomputers. It is an operating system and programming language designed for the development of database applications. The PICK operating system has been used for some time on dedicated computers, particularly by the American military establishment for whom it was originally written, but in recent years it has become more widely available on mini- and main frame computers (eg INFORMATION - the Prime mini-computer implementation of PICK being used by NCC (see article by Ian Baugh).

### REVELATION IS DIFFERENT

Revelation adopts a rather different approach, compared to 'conventional' databases such as dBase, OMNIS, SMART etc., in two important respects :

1. Everything is stored as strings of characters which include special markers to delineate records, fields, values, etc. This has two very useful consequences - it means that all fields are variable in length and can store any amount of text from nothing up to 64k byte maximum for a single record; and secondly it allows multiple values to be stored in a field. The latter is a very neat method of handling species synonyms, multiple-authors of papers etc. - the sort of things which cause considerable problems with 'conventional' databases.

2. Data is stored in files by a direct-access method. Every record is given a unique identifier (ID), applies a calculation to the ID (called a 'hashing algorithm') from which the position to store it in the file is derived. Thus, given the ID of a record, its position can be calculated immediately and it can be read wtih no need for lengthy searching. This makes

retrieval of specified records very fast and independent of file size (ie a record can be read equally quickly from a file of 100 or 100,000 records).

### WORKSHOP RECOMMENDATIONS

During the afternoon there was a general discussion on the principles and practicalities of developing a standard recording programme. The workshop agreed that a standard system has many advantages although a single standard programme would necessarily exclude many existing computerised systems. The implementation and development of a standard programme, such as that developed by Dr Stuart Ball, is something that NCC is developing an interest in and for which a mechanism to provide support is being sought. Several local centres and other data banks expressed interest in the programme developed by Stuart including those at Sunderland, Peterborough, Bedford, Rotherham, Barnsley, Sheffield, Wiltshire, Ealing, Peak Park and the Oxford Wytham Survey.

Strong interest was shown in Claire Appleby's system and a number of organisations are hoping to adopt her system along with the 'Biological Recording Package for Local Records Centres'. The mapping facilities provided by Claire's system are a useful addition to the processing power provided by Stuart's package.

Following the recommendations from the Workshop NFBR council has decided to approach NCC and express support for the 'Biological Recording Package for Local Records Centres' and discuss its development and adoption by Local Records Centres and other databanks.

**Working Group Co-ordinator : Mr W A Ely, Clifton Park Museum, Clifton Lane, Rotherham, South Yorkshire, S65 1JH**
**Tel (0701) 2121 ext 3559**

## RSNC GETS WYSE


### COMART TO WYSE

The Royal Society for Nature Conservation's 'Computers in the Trusts' Project has seen the installation of microcomputers in 36 Trusts and the Marine Conservation Society (MCS) since 1984.

The Computers in the Trusts Project was initiated to co-ordinate computer development in the Trusts, and in particular to encourage compatibility between the Trusts and RSNC. The majority of the Trusts and MCS are using Comart micros with concurrent CP/M 86 operating system and dBASE II Database. Seven Trusts who most recently benefitted from the 'Computers in the Trusts' Project have now acquired the Wyse PC+ IBM PC-compatible micro. To assist with communication, the Project is also supporting the upgrading of the COMARTs to be IBM disk compatible. The 'Computers in the Trusts Project is assisted by The British Petroleum Company plc, Nature Conservancy Council and The World Wildlife Fund.

### RSNC'S COMPUTER UNIT

Computer expertise at RSNC is developing with the expansion of the Computer Unit headed, at present, by Vanessa Howard. Vanessa is assisted by Tony Burley and secretarial support, with a second assistant now being recruited. In addition to membership and wordprocessing packages, the computer Unit supports the Site Related Database now in use by many Trusts. The Site Related Database, written in dBASE II and originally developed by consultants at Hatfield Polytechnic, is aimed at collating data on'prime' sites. The unit is now developing the database to allow some manipulation of species data, though this facility will be limited to a dictionary of 500 'indicator' species.

For further details of the Computer Unit's activities and the 'Computers in the Trusts' Project, please contact :
**The Computing Officer, Royal Society for Nature Conservation, The Green, Nettleham, Lincoln, LN2 2NR.**

## NCC IS PRIMED WITH INFORMATION

Dr I Bough, Head, IT Branch NCC

### NATURE CONSERVANCY COUNCIL : COMPUTER STRATEGY

During the last 18 months NCC has implemented the first phase of its national computer strategy. The strategy embraced 3 main components : software, hardware and communications. Phase 1 of this strategy aimed to install the core of NCC's computer systems in the main offices and to develop databases and improved communications. The next phase of the strategy aims to expand this core system to NCC's sub-regional offices and beyond.

### SOFTWARE - NCC HAS INFORMATION!

NCC holds a significant volume of scientific data relating to sites and surveys and handles a large volume of administrative information. The strategy determined that NCC required an integrated information system accessible to all levels of staff which would involve the minimum programming effort. It was decided to adopt a 4th generation language and relational database product to allow data to be held in a variety of locations but still accessible from the central HQ. The database management system had to work on both mini computers and IBM compatible PC's. The selection was eventually narrowed down to Prime's Information Database management system which provided all of these features plus close integration with the Prime word processing systems. It is thus possible to transfer data directly between minis and PC's and word processing systems.

### HARDWARE - PRIME TO XEN

NCC already possessed a Prime 9655 mini computer for administrative systems and with the decision to use the Prime Information database it was decided to install additional Prime mini computers in the GBHQ and 3 Country HQ offices. As a first stage in introducing computers to NCC's regions it was decided to install 1 IBM compatible PC in each of the 15 regional offices. For central systems a Prime 2655 (8mb memory, 1 gigabyte disk storage) was installed in the Great Britain HQ in Peterborough; in the 3 CHQ's one Prime 2350 and two 2450 mini computers (4mb memory, 370 mb disk storage) were installed.

# NCC COMPUTER HARDWARE AND COMMUNICATIONS

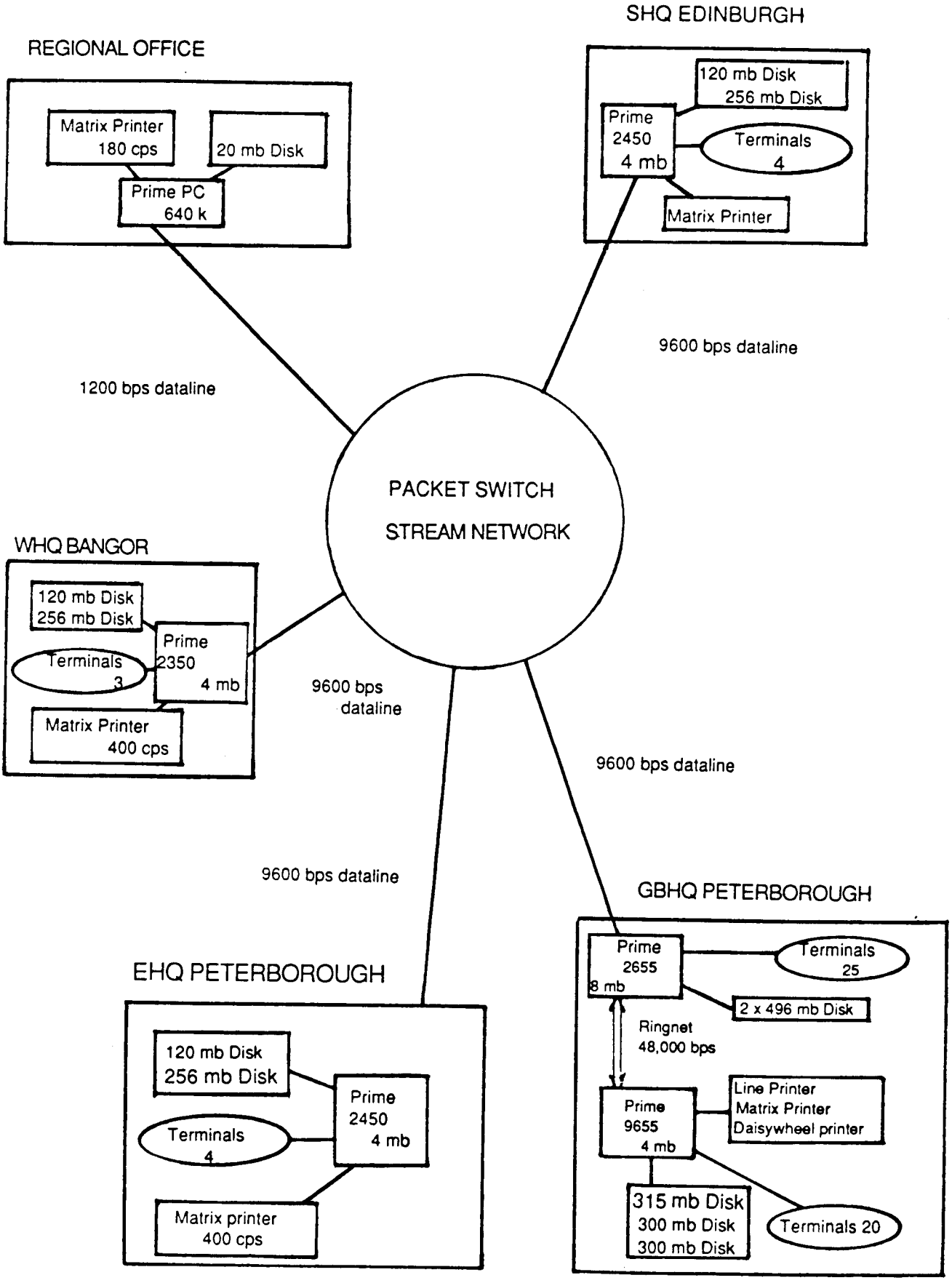



FIGURE 1

**COnservation REsources DATAbase**

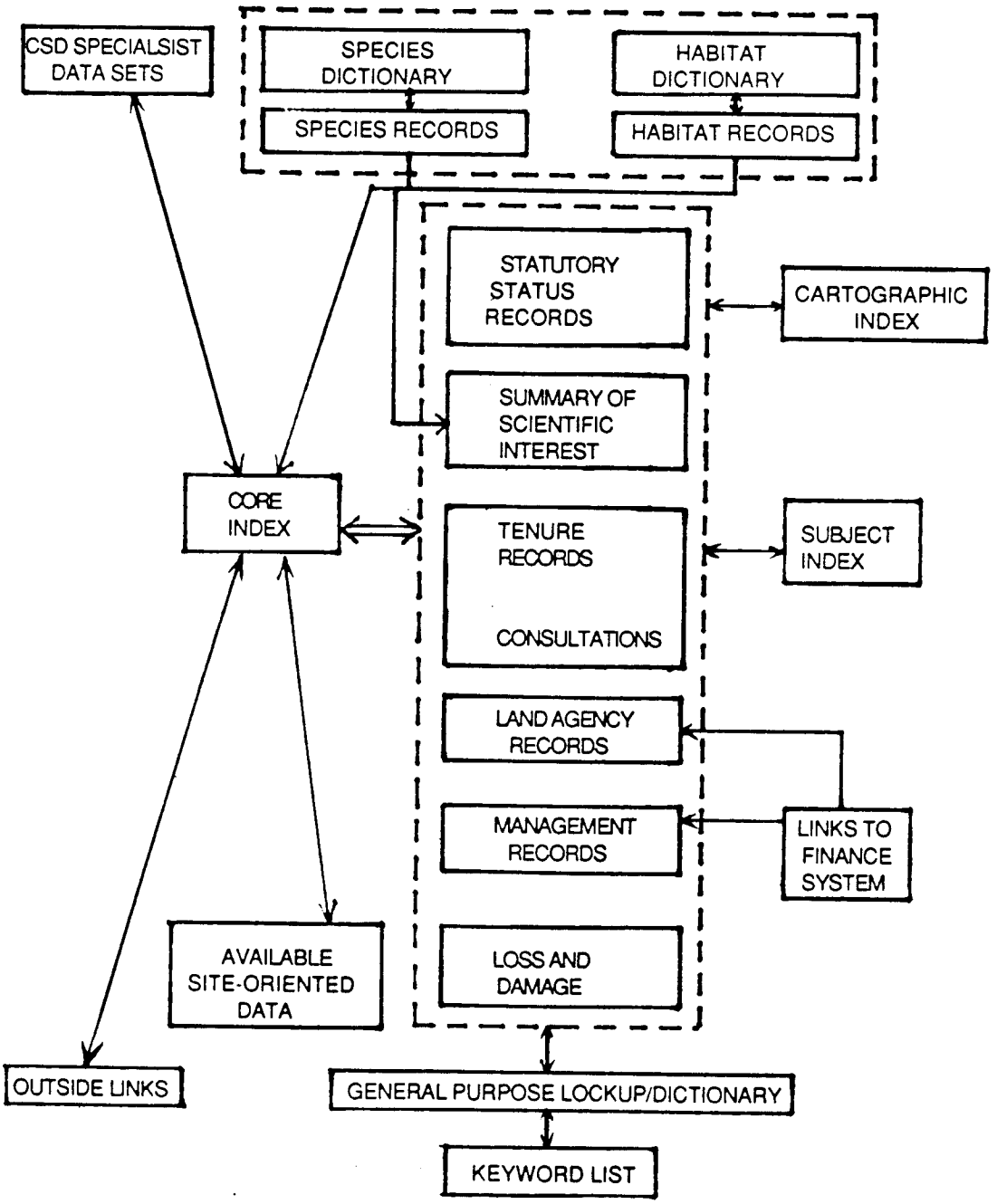



**FIGURE 2**

As part of the word processing strategy Prime Performer WP systems are being installed in several locations; these are being installed in small clusters, with 3 workstations accessing a shared processor, 50 mb disk and using a mixture of Olympia daisy wheel printers and Dataproducts LZR1230 laser printers.

NCC has continually reviewed its hardware strategy and has carried out detailed investigations into suitable PC's. A decision has been made to standardise on Apricot Xen-I 45 mb PC's. These successfully run all of NCC's software and interface directly to NCC's mini computers. Figure 1 shows the type and location of all of the above equipment.

## COMMUNICATIONS

A fundamental part of NCC's computing strategy has been to develop an effective communications network to improve the flow of information between NCC's dispersed offices. The aim being to support the development of on-line distributed databases, so speed up data transfers and to support electronic mail between NCC's main offices.

Initially NCC decided to use British Telecom's Packet Switch Stream (PSS) network service, as being the most cost-effective solution and to minimise the in-house effort in supporting private networks. 9600 baud links were established between NCC's HQ offices and 1200 baud links have been installed to each of NCC's 15 regional offices.

By linking with British Telecom Gold via the PSS system NCC now has full access to telex facilities using the computer network. Figure 1 shows the layout of the NCC network.

## DATABASE DEVELOPMENT - COREDATA

NCC first developed a site-related database for handling SSSI data several years ago using a database system called Omnis-3 running on 3 standalone Apple PC's with 20mb hard disks. The experience gained in developing that sytem has led to a thorough reappraisal and redesign , culminating in the development of NCC's new conservation database called Coredata (COnservation REsources DATAbase). This expanded the earlier concept to include any site, not necessarily SSSI, information on the wider countryside, surveys and an index to the availability of information. The key feature of Coredata is the ability to search in a very flexible way for the existence of information at a variety of levels. This includes site specific and subject specific queries, and queries covering a defined geographic area, eg 10km square.

The use of the 'Information' database system together with an applications generator called STRIDE has allowed NCC to develop the prototype system very rapidly. This allows users to get hands-on experience of the application at a much earlier stage to allow modifications to be made as users gain experience in using this system.

## FLEXIBILITY

Coredata has been developed as an on-line distirbuted database with access via a series of hierarchical menus to present an easy interface for non technical users. The modular approach used in the design of Coredata allows extra datasets to be automatically linked into the overall structure with minimum redesign work. This structure is shown in Figure 2. Using the relational facilities of the Information data-base management system it is possible to carry out complex retrievals from the database and to relate that detail to data held in the administrative database systems. In this way NCC is building up a comprehensive management information system for staff at all levels in the organisation.

## FUTURE DEVELOPMENT

NCC is currently investigating the potential for using Geographic Information Systems (GIS) for cartographic work and for projects requiring the spatial analysis of data.

Through the agency of Wildlife Link, NCC is working with the NGO's to define common standards for coding, classification systems and data exchange. A database of equipment, systems, coding systems used by the NGO's and NCC has been set up on NCC's computer system in Peterborough.

# CORNISH BIOLOGICAL RECORD UNIT'S COMPUTER SYSTEM

Report by Dr Stuart Ball

CBRU at Redruth holds an estimated million biological records of around 25,000 species on record cards with another 500,000 waiting to be entered, as well as records of fossils and subfossils, archaeological information, biographies of local naturalists and lists of Cornish place names. This information is currently dealt with manually and, since the centre is operated largely by voluntary labour, it has become a cumbersome and excessively time consuming task to maintain it, let alone extract information.

## FRENCH AT EXETER

A project to develop a computer system capable of handling all of this diverse information has been undertaken by Colin French, initially based at the Computer Unit at Exeter University. Software has been developed on a Prime minicomputer using the Prime INFORMATION database management system ( a PICK based system). A parallel version has been implemented on an IBM compatible micro using INFORMATION PC, the idea being to capture the data using micros at the record unit, but to hold the data on larger and more powerful minicomputer. The software has been written entirely in Information's programming language (Info/BASIC) without using an application generator which could cause problems in the future if Colin French is not available to maintain his programmes.

## 300 MEGABYTES AND 40 MAN YEARS

The intention is that absolutely everything from the record cards should be computerised and, as far as possible, coded so that searches cn be performed on any detail of record. Apart from the complexities of the software, this created problems with the amoumt of storage that will be required and that it will take about 40 man years to input. It is hoped that MSC money will be forthcoming to employ people for data input, but CBRU has to raise the money for the computer hardware. Retrieval and printing is handled rather nicely through a series of menus which would allow someone with little experience of the system to produce complex and well organised reports. Other people's coding systems for species, habitats etc have been incorporated to facilitate data exchange with other organisations.

SCHOOLS USE ?

Support for the project has come from local eduactional authorities who hope to put subsets of data into schools and colleges to make the data for their area available for teaching and project work. This seems a very good idea and could perhaps be investigated by other record centres.

## DATABASES IN EUROPE

Report from Stuart Ball and Paul Harding

PARIS IN AUTUMN

In November 1987 we presented lectures on the Invertebrate Site Register (Stuart) and Biological Records Centre (Paul) at an 18 lecture colloquy entitled 'Utilization des inventaires de invertebrates pour l'identifacation et la surveillance d'espaces de grand interet faunistique'. Possibly translatable as "The use of invertebrate lists for the identification and monitoring of sites of special faunistic importance". The colloquy tended to consider biological databases in general rather than anything soley invertebrate.
The meeting was hosted by the Secretariat de la Faune et de la Flore - effectively the French Biological Records Centre - at the National Museum of Natural History, Paris, and there was on opportunity to see the French system in action.

HUNTING BUREACRATS RECORD FOR FRANCE

The French system has been in operation since the early1980's. It was computerised from the start and they have their own minicomputer and several micros used for data entry. The staff includes a programmer who has written the software. Site boundries, and other geographical features, are held in digitised form allowing sophisticated maps to be produced for planning purposes and ecological research. Considerable progress has been made in gathering data on vertebrates and higher plants within the National Societies being funded for data collection and local government officials who administer hunting being called on to submit records (this allowed instant maps of carniverous mammals to be produced for example !). Records are submitted on machine readable forms - multi-choice affairs which have to be filled in by putting pencil lines across little boxes - they look horrible to use !. Inertebrate recording is much less advanced with coverage being very thin for most groups, although national recording schemes on a pattern similar to ours are getting underway.

SWISS ORACLE

Yves Gonseth and Christopher Dufour talked about the Swiss system which uses a general purpose database (ORACLE) running on a mini-computer. They have recently produced atlases of Butterflies and Dragonflies as well as publications on a variety of other groups, such as Craneflies. A booklet on their methodology (Contribution a la methode informatique en faunistique, C Dufour & Y Gonseth, Centre Suisse de la Cartographie de la Faune, 1986 - also available in German). Conversations outside the lecture hall revealed that ORACLE was also being used in the Netherlands and Germany. (BRC at Monks Wood has recently switched to ORACLE which is NERC's preferred system).

NORDIC CODE TO LUXNAT

A poster display by Lars Osterdahl on the Nordic Code Centre (Museum of Natural History, Stockholm) and a talk by Marc Meyer on LUXNAT (Luxemborg) both described relational databases which had been written in high level languages (Fortran in the former case, undisclosed in the latter). Both had the structure one would expect with dictionary files for species and geographical locations being linked by a records file allowing data to be retrieved either by taxa or by geographical area.

Stuart was surprised at the enthusiasm for writing systems from scratch rather than using commercially developed database management packages. Part of this stems from systems like the Nordic Code Centre's which dates from before such packages were readily available, but it is at least in part because people had tried the readily available, fixed field length package (like dBASE or OMNIS), found them unsuitable and had progressed to writing something more suitable for themselves without really enquiring into other alternatives. ORACLE is clearly gaining a following, but no one was using, or had heard of, PICK based systems like Prime INFORMATION or REVELATION.

# NFBR WORKING GROUPS

NFBR Newsletter 5 reported the setting up of five working groups to tackle some of the issues within biological recording. The groups aim to provide a forum for members to discuss specific issues and hopefully prepare papers, worksheets, or policy for NFBR to promote.

The Computer Recording Systems and Data Standards Group has held a workshop and a small report appears in the Computing News section of this newsletter. Dr Tait, co-ordinator of the Phase 1 (Habitat) Survey Working Group has been busy preparing a discussion paper to stimulate debate on the subject , his work is published in the following article. Please send your thoughts, comments, objectives to **Dr A I Tait, County Ecologist, East Sussex County Planning Department, Southover Road, Lewes, East Sussex, BN7 1YA. Tel (0273) 475400 ext 621.**

## PHASE 1 PROBLEMS

INTRODUCTION

This document is intended to provide a basis for discussion within the NFBR and in particular within the Phase I Survey Working Group. Specific topics for discussion are listed in Section 8.

In general the terminology is that used by the NCC but the scope of the discussion is intended to be comprehensive and of interest to all intending to carry out or promote Phase I surveys, however large or small, professional or amateur.

As far as possible overlap with other NFBR Discussion Papers, such as that on "Computerising Biological Records" has been avoided.

PHASES OF SURVEY

To clarify the scope of discussion the following definitions, based on NCC usage are proposed :

Phase I

Primary or reconnaisance survey to habitat level, normally comprehensive all habitat coverage of an administrative area but may be restricted to a single habitat survey eg of herb

rich grassland.

Phase II

Relatively detailed surverys of selected sites. Usually consists of species recording for selected groups by a standard sampling method. Information collected should be suficient to establish the relative conservation status of each site surveyed.

Phase III

Very detailed surveys of selected sites, generally concerned with development and implementation of management plans. Detailed recording of most or all taxa.

## WHY SURVEY ?

Three centuries ago Francis Bacon said that "knowledge itself is power" and this is nowhere more true than in the defence of wildlife sites. Without reliable knowledge of the context of a site it may be impossible to defend it against development. Without comprehensive knowledge of an administrative area it is difficult to argue for adequate allocation of resources to sites of particular conservation importance.

Available biological information is seldom of consistent quality, coverage or detail. A rigorous approach to the conservation of sites requires the acquisition of information at a consistent level for large areas.

Given current limitations on resources it is extremely unlikely that comprehensive Phase II surveys will be possible

in the forseeable future. Completion of Phase I survey for the whole country should be attainable and is therefore a more desirable target. Phase II and III survey could then be directed to the more 'important'/ threatened sites.

## HABITAT CLASSIFICATION

The method of habitat description/calssification used is fundamental to the success and comparability of surveys. Past Phase I surveys have used a variety of classification systems, although many have been based on the NCC system. The NCC system has/had drawbacks that were discussed at the Cambridge Conference in 1986 and a revised system is needed. Dr Charman's paper (1) is a good basis for further discussion.

Wider availability of the NCC Phase I Survey Handbook could assist those considering such surveys, a condensed version may also be useful.

## ECONOMY OF EFFORT

The principal problem with any Phase I survey will be the limited availability of resources to carry it out. Therefore it is important that the method chosen makes the most efficient use of the available resources.

The method of survey will also depend on the level of information required and the specific purposes for which the data are required. It may be assumed that a Phase I survey will only be concerned with classifying land into basic habitat types and will involve the collection of the minimum amount of species information required to identify any habitat.

## AERIAL PHOTOGRAPHY

A survey will inevitably require field visits but it will often be possible to make use of remote sensing eg aerial photography, to reduce the amount of field survey to more manageable proportions. For example, in East Sussex approximately 60% of the county is either built on or under arable cultivation. Both categories are easily identified from aerial photography and may be eliminated from field survey because of their limited biological interest. Aerial photography is not always available and is often too old to be very useful. Large scale OS maps can be a partial substitute, particularly when used in conjunction with agricultural land classification maps - grade 1 and 2 land may be assumed to be under intensive cultivation.

The manpower required to carry out extensive field surveys, even of the most basic kind, within a reasonable time scale will be large and therfore costly. The dearth of extensive Phase I surveys is ample indication of the difficulty in obtaining funds for such manpower. Aerial photography may be a way around lack of funds as it may be cheaper than ground survey. £1500 - £2000 per 100 sq km is a typical cost for colour photography at 1:10,000 scale, and some of the costs may be recovered from other users.

Given good quality air photo cover and large scale OS maps it may be possible to classify sites sufficiently well to eliminate all field work except for that necessary to standardise the interpretation of photographs.

## DATA RECORDING

The recording of large amounts of site related data presents many problems with particular conflicts arising betweeen the requirements of accuracy and the need to produce multiple copies of convenient size. Large scale maps facilitate accuracy, detailed recording and clarity but create unwieldy amounts of paper which may be difficult to copy. Computer digital mapping of data is the obvious answer but does have considerable cost implications.

## FUNDING

Much of the Phase I survey to date has been carried out by or with the assistance of the Manpower Services Commission (3) but funding from this source is becoming more difficult to obtain, particularly in the South East. NCC policies vary from region to region, but there is evidence that they are willing to provide limited funds to assist Phase I survey. Local Authorities may sometimes initiate or assist Phase I surveys particularly if it can be demonstrated to them that the results will be of value to their development control and strategic planning functions.

## ISSUES FOR FURTHER CONSIDERATION

i. Is it desirable/necessary/achievable to porpose a national minimum standard for Phase I survey?
ii. What should such a national standard be?
iii. What standard habitat classification system should be adopted ?
iv. What guidance on methods can/should the NFBR provide ?
v. How can the data obtained from Phase I survey best be recorded and interpreted ?
vi. In what ways can the NFBR promote Phase I survey ?

CONCLUSION

There is considerable need for the promotion and standardisaion of Phase I surveying and NFBR should endeavour to further these ojectives by stimulation of discussion and formulation of guidelines and standard methods.

REFERENCES

1. Charman K, (1986). Habitat Classification. In Proceedings of NFBR conference 'Biological Recording in a Changing Landscape'.

2. Ely, W A, Yeates, CSV (1987). Computerising Biological Records - A Discussion Paper for NFBR.

3. Keymer, R J ,(1986). Survey Monitoring in the Naure Conservancy Council. In Proceedings of NFBR Conference 'Biological Recording in a Changing Landscape'.

# NFBR MEMBERSHIP LIST

Andrew Roberts, NFBR Treasurer has prepared a membership list for NFBR correct to the beginning of February 1988. Since our inception at Cambridge in April 1986 we have recruited 100 members; reasonable progress towards an initial target of 200. Membership is available at a personal or organisational level and the lists show members of both categories separately. The lists reveal an encouraging spread of interests with membership ranging through IUCN, several levels of NCC, several University study groups, local records centres, Local Nature Conservation Trusts, a Water Authority, and Urban Wildlife Groups. However, there is a long way to go before all those managing biological data banks are members of NFBR. If you know a likely candidate for membership please recommend NFBR to them. Copies of a new membership leaflet can be obtained from NFBR Chairman Geoff Stansfield.

ORGANISATIONAL MEMBERS

| | |
|---|---|
| Anglian Water, Huntingdon | (Fuller) |
| Bedford Museum | (Brind) |
| Bedforshire & Huntingdonshire Wildlife Trust | (Moreau) |
| Birmingham Museum, Natural History Dept | |
| Bolton Museum, Natural History Section | |
| British Butterfly Conservation Society | (Sutton) |
| Buckinghamshire County Museum, Aylesbury | |
| Cambridgeshire Wildlife Trust | (Green) |
| Carlisle Museum & Art Gallery | |
| Derbyshire Wildlife Trust | (Brassley) |
| Falkirk Museums | (Sanderson) |
| Field Studies Council | (Thomas) |
| Glasgow Museum & Art Gallery | (Hancock) |
| Gloucestershire Trust for Nature Conservation | (Bullard) |
| Hampshire County Council, Countryside Group, Planning Dept | (Court) |
| Hancock Museum, Newcastle | (Tynan) |
| Hereford Nature Trust | (Brian) |
| Horniman Museum, Natral History Dept | (Reid) |
| International Union for the Conservation of Nature | (Leon) |
| Inverness Museum & Art Gallery | (Assistant Curator,Natural Sciences) |
| Leicestershire Museums | (Evans) |
| Lincolnshire & South Humberside Trust for Nature Conservation | (Crooks) |
| London Borough of Ealing (Leisure Services) | (McCord) |
| Montgomery Trust for Nature Conservation | (North) |
| Museum Documentation Association, Cambridge | (Roberts) |
| National Museum of Wales | (Librarian) |
| National Museums & Galleries on Merseyside | (Greenwood) |
| National Trust, Biological Survey | (Clements) |
| National Trust for Scotland (Brodrick) | (Warner) |
| Nature Conservancy Council | (Charman) |
| North Herefordshire Museum Service | |
| Nottingham Museums | (Whalley) |
| OCIM, France | |
| Oxfordshire Museum Services | (Campbell) |
| Peterborough Museum Society, Natural History Section | (Eade) |
| Rotherham Museums, Clifton Park Museum | (Ely) |
| Royal Society for Nature Conservation | |
| Rural Studies Research Unit | (Francis) |
| St Albans Museums | (Collins) |
| Somerset Trust for Nature Conservation, Environmental Record Centre | (Wilkins) |
| Southampton Common Studies Centre | (Hand) |
| Southend Museum, Biological Records Centre | |
| Stoke City Museum | (Halfpenny) |
| Suffolk Biological Records Centre, Ipswich | (Sanford) |
| Suffolk Trust for Nature Conservation | (Smyth) |
| Sussex Wildlife Trust | (Lee) |
| Tyne & Wear Museums Service | (Coles) |
| Urban Wildlife Group, Birmingham | (Parry) |
| Warwickshire Museum, Biological Records Centre | (Copson) |
| Warwickshire Nature Conservation Trust | (Lewis) |
| West Wales Trust for Nature Conservation | (Taylor) |
| West Yorkshire Ecological Advisory Service | (Lavin) |
| Wiltshire Archaeological & Natural History Centre, Biological Records Centre | (Appleby) |
| Worcester City Museum | |

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| Delf, J H | Greater Manchester Countryside Unit |
| Drake, C M | Larger Brachycera Recording Scheme |
| Elliott, R | West Wales TNC |
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| Harding, P T | BRC |
| Hearn, J | Cladocera Mapping Scheme |
| Heath, J | Colchester & Essex Museum |
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| Walpole, M | |
| Warren, J | Farnborough College of Technology |
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The Editor welcomes articles (line diagrams, black and white photographs), short news items, reviews and comment.

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