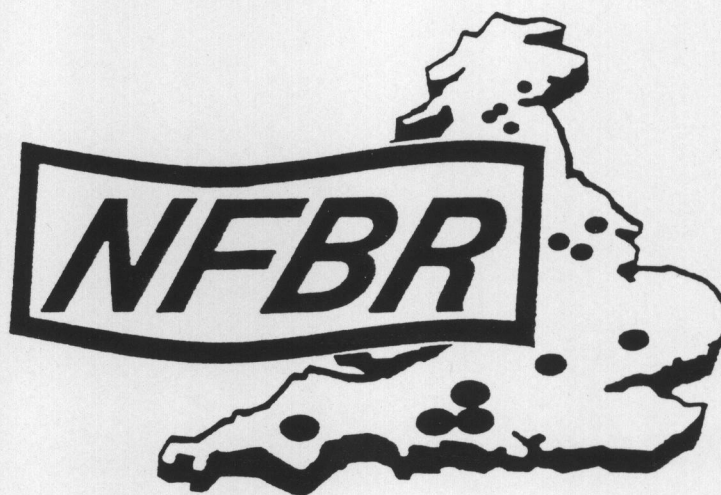


NATIONAL FEDERATION FOR BIOLOGICAL RECORDING



NFBR NEWSLETTER 10: September 1990

National Federation for Biological Recording

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Items for next newsletter to Meg Game, London Ecology Unit, Bedford House, 125 Camben High Street,
London NW1 7JR

Annual conference

The NFBR Annual Conference was held at Leicester University on 1st June, and was followed by the AGM

The subject of the conference was "Geographical information systems in action - the work of the Regional Research Laboratories (RRLs)", and it began with a talk by Dr Alan Strachan, Director of the Midlands Regional Research Laboratory.

The Regional Research Laboratory Initiative is a major programme launched by the Economic and Social Research Council (ESRC) to establish regional centres of excellence in the management of social science and related information. The RRL concept was developed and tested during an 18-month period, and ESRC has now supplied full funding until 1992 to establish eight research labs. After then, it is envisaged that the RRLs will continue on a self-financing basis. The RRLs

- provide database management of existing data sources at the local and regional level
- develop software so that users can access data easily and provide documentation and support
- undertake research to make data from different data collection bodies compatible
- act as centres of research and professional training
- act as an advisory and information service

The eight centres are:

South East: Birkbeck College, London and London School of Economics

Wales and South West: University College of Wales, Cardiff

Midlands: Leicester and Loughborough Universities

Urban Research and Policy Evaluation: Liverpool and Manchester Universities

Northern Ireland: Queens, Belfast and Ulster Universities

North East: University of Newcastle-upon-Tyne

North West: Lancaster University

Scotland: Edinburgh University

The Midlands Regional Research Laboratory (MRRL) research team is an inter-disciplinary group of eight academics, four full-time researchers, and one full-time contract funded researcher. The MRRL also has five Associate Researchers from the private sector and other academic institutions who are collaborating on MRRL projects.

The two MRRL laboratories, at Leicester and Loughborough Universities, contain an extensive range of hardware, which includes a MICRO VAX, three PS/2s, eight terminals to Leicester University's VAX cluster, and several graphical devices and laser printers. Its software holdings include three commercial GIS systems: ARC/INFO, ERDAS and INTERGRAPH MICRO-STATION; business graphics and mapping packages; and pagemaker. It also has access to an extensive library of software, which includes the SAS, SPSS-X and MINITAB statistical packages and the UNIRAS graphics suite.

Research fields include the integration of economic, social and environmental data; a data directory for Leicestershire; a computer-based data directory query system; database design, creation and management; and the use of GIS for decision-making.

Contract and collaborative research projects include the identification of waste sites for Wimpey UK Ltd.; the spatial dimension of recruitment for the MoD; the use of GIS for health data for the Leicester District Health Authority; analysis of car-related crimes in central Leicestershire for Leicestershire Constabulary; and digitized boundary files for Leicestershire County Council.

The MRRL offers a number of courses, including an MSc in GIS in collaboration with other departments at Leicester.

Following the talk, delegates were shown an impressive video, which prompted the thought that perhaps NFBR and local BRCs needed one about biological recording and records centres.

Three demonstrations of GIS-based projects were then given. Dr. David Maguire showed how GIS could be used to identify sites for waste disposal. In consultation with a national waste disposal company the main factors taken into account in locating potential waste disposal sites were identified. These were then entered into a

GIS as a series of separate layers such as suitable soils (i.e. clay), avoidance of SSSIs, AONBs, urban areas, high quality agricultural land and open water sources. Access to transport was also incorporated. Using a sieve map approach and starting from the area as a whole each layer was superimposed in turn, thereby stripping away those areas which were deemed unsuitable for waste disposal. The end result is the identification of a series of localities which must then be subjected to more detailed study before final site(s) is chosen.

Dr. Michael Langford demonstrated the potential of remotely sensed imagery for identifying the different characteristics of the earth's surface. Using LANDSAT images for the city of Leicester and the Peak District he illustrated how the original image, which is recorded on seven radiation bands, can be classified to produce land cover information. Based on 30 x 30m pixels a reasonably fine-grained picture can be derived which can distinguish between different types of urban landscape, between agricultural practices and identify different vegetation and slope characteristics.

Dr. Alan Strachan showed the use of GIS to structure and query databases, in this instance a socio-medical database for Leicestershire, and then how this information can be portrayed in map form. The demonstration had three components: the first highlighted the use of GIS to relate mortality statistics to specific groups in the population, and then how socio-economic or ethnic overlays could be added to the distributions identified. The second module illustrated the use of the system for sophisticated spatial queries, resulting in a mapped distribution which points to relationships/localities which might warrant further study. The last module demonstrated the use of GIS to help tackle complex problems by relating the incidence of Leukaemia and suicide to the presence of certain rock types and overland power cables.

The AGM

Chairman's report

Geoff Stansfield reported on the past years activities as follows:

"I have to begin by saying that this has not been the easiest years for the NFBR. By some quirk of fate, almost all the officers have experienced heavy pressures at work, often coupled with domestic pressures as well. This has meant that most of the effort has been devoted to keeping the Federation running rather than making progress with some of the projects.

Council met twice during the year, on October 3rd 1989 and January 11th 1990. Executive met on 7th December, 3rd January and 4th April.

Newsletters 8 and 9 have been produced during the year, largely due to the efforts of Meg Game, who coordinated the contributions and produced the copy, and to Leicestershire Museums, which undertook the printing. Also, the report of last year's conference National Perspectives in Biological Recording has now been published. Delays were caused by our failure to obtain one of the key papers and we eventually had to publish without it. I would like to thank my co-editor, Paul Harding, for his assistance.

The main activity during the year has been the setting up of the Coordinating Commission for Biological Recording in the United Kingdom. Due to my absence in Canada at a crucial stage in the discussions, Bill Ely agreed to represent the NFBR at meetings, and has continued to do so. We have high hopes of the Commission and that, through it, we shall progress a long way towards achieving the objectives with which we set up the Federation. I would like to record my thanks to Bill for taking on this work. It is clear that the setting up of the Commission will have implications for the NFBR and it may be that we shall need to reconsider our objectives and strategy.

Other matters have also occupied the Federation. Along with many environmental organisations, we presented our views to Chris Patten, Secretary of State for the Environment, on the proposed re-organisation of the Nature Conservancy Council. We complained about the lack of consultation and insufficient time for debate and we expressed concern that the splitting up of the NCC into three country-based bodies would make it difficult for

Britain to carry out its national and international functions. Finally we expressed particular concern about the effects which the break-up might have on biological recording.

As you will hear from Andrew Roberts, our finances are in good order, due in large part to the generous contribution we received last year from CEEB. There are, however, a number of subscriptions outstanding. Membership has risen slightly during the year.

This Annual Meeting will see the biggest changes in the administration of the Federation as Andrew Roberts, who has served as Honorary Treasurer from the beginning, and I, who have served as Chairman, step down. I would like to take this opportunity of thanking my fellow officers, members of Council and the membership in general for their support during this period.

If anything, the challenge for the future is even greater. The Federation needs to raise its profile. The present surge of interest in environmental matters presents an unprecedented opportunity to establish the importance of biological recording. As one example, the Prime Minister was reported on the front page of The Times on 23rd March 1990 calling for European countries to set up wildlife data banks to help study global warming (see page 4)*.

Geoff Stansfield
31st May 1990

Following Geoff Stansfield's address, Paul Harding, on behalf of all officers and members of NFBR, thanked him for all his very hard work during his Chairmanship. Thanks were similarly due to Andy Roberts for undertaking so much administration for the Federation, including looking after the finances and membership, and mailing out the newsletter. The new Council and Executive will certainly miss these two, who have been critical to the progress and successes of the Federation since its inception.

Income/expenditure account

(April-December, 1989)

	1989	1988-89
income		
subscriptions	500.00	590.00
conference	1316.00	1432.50
publications	564.00	43.50
interest	130.40	48.97
sundries	0.00	5.00
	2520.40	2119.97
expenditure		
library subscriptions	70.00	66.00
conference	446.71	1152.38
publications	754.80	19.50
photocopying/postage	202.70	165.89
travel	0.00	20.00
charges	3.52	8.63
other	19.00	0.00
	1496.73	1432.40
Surplus for year	1013.67	687.57
Accumulated surplus brought forward	1296.85	609.28
Accumulated surplus carried forward	2310.52	1296.85

Balance sheet, 31st December 1990

	1989	1988-89
current assets		
debtors	206.50	223.76
bank current account	96.72	51.24
bank deposit account	2603.80	2190.14
	2907.02	2465.14
creditors		
conference in advance	0.00	1000.00
subs. in advance	0.00	0.00
trade creditors	596.50	168.9
total assets	2310.52	1296.85

Mrs Thatcher calls for wildlife data banks

THE TIMES FRIDAY MARCH 23 1990

Wildlife plea

The Prime Minister called for European countries to set up wildlife data banks to help study global warming.. Page 3

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Thatcher green data plan

By Richard Ford, Political Correspondent

The Prime Minister last night called for European countries to set up data banks for wildlife to enable scientists to study the effects of global warming.

Mrs Thatcher said the banks for flora and fauna would provide scientists and governments with a full picture of how species responded to environmental change.

"We do not have a comprehensive picture of the position now. This means that in ten years' time we shall not know how species have reacted to changes in their environment."

Mrs Thatcher warned of the consequences of a change in climate for the Common Agricultural Policy, for nature reserves, for farming and for the sort of crops that could be grown.

During her speech at the Royal Society to mark the end of the surface water acidification programme, Mrs Thatcher

reaffirmed the Government's commitment to reducing acid emissions.

She said Britain would meet its obligations through a large-scale investment programme to protect the environment, including the installation of desulphurization equipment, the building of new gas-fired plant and the use of low sulphur coal.

The investment would ensure Britain's compliance with EC directives on large plants, and would make a "major contribution to reducing carbon dioxide output".

The total investment of UK industry in new, clean plant and on refits over the next ten years would be £6 billion.

Mrs Thatcher insisted that, whatever international action was taken to deal with environmental problems, it must not hinder economic growth. "Without growth, you cannot generate the wealth required to pay for the protec-

tion of the environment. We rely on industry to show the inventiveness crucial to finding solutions to environmental problems."

● Planting of new forest has fallen well behind target as a result of tax law changes two years ago, the Government admitted yesterday (Michael Hornsby writes).

Lord Sanderson of Bowden, Minister of State at the Scottish Office, told timber growers in London he expected planting levels to be "well down" when the latest figures were released this month.

This was because the 1988 Budget had closed a loophole that had allowed landlords to invest earnings from other businesses tax-free in coniferous plantations. New plantings had fallen drastically as a result, and estate owners had said they had difficulty in maintaining woodlands because they could not offset the costs against tax.

p 3.

The Cambridge bumblebee project survey of nest sites

The Bumblebee Project aims to identify habitats of value to bumblebees and to formulate management recommendations for use by farmers and conservationists. Bumblebees are useful insects because they pollinate some crops as well as wild flowers. In recent years several species of bumblebees have disappeared from parts of the country. A shortage of suitable nesting sites may have contributed to this decline.

Lifecycle

Unlike honeybee hives, bumblebee nests are occupied for only a few months during the summer. Every spring, queen bumblebees emerge from hibernation and, after foraging, each begins to search for a suitable place to nest. This process may take a number of weeks and some early choices may be abandoned in favour of better locations. Having settled on a site the queen then lays her first eggs on a ball of pollen. These hatch and develop into the first workers, who assist in foraging and brood rearing. Only towards the end of the summer are young queens and males produced. After mating the males die and the young fertilised queens forage before digging themselves into the soil to hibernate through the winter months.

Nest Survey

In 1989, over 100 records of bumblebee nests were received, providing much information about the kinds of places bumblebees choose to start their colonies. Following this success the survey is running again, in order that particular aspects of nest site location for different species can be investigated, such as shelter, sunlight and soil type.

Nests need to be warm, dry and undisturbed. Old mouse holes, bird boxes, compost heaps and quiet outbuildings often harbour a bumblebee colony. One group of bumblebees, the Black-bodied Red Tails, may have a greater requirement for warm nesting places than other groups. They have been found nesting among piles of hardcore, masonry and rocks as well as under the roofs of houses. These materials act as reservoirs of heat and stay warm after the sun has set.

Bumblebees do not collect nesting material themselves, but choose to nest where suitable bedding

already exists. Dry grasses, mosses, upholstery foam and insulation lagging have all been used.

Colonies reach peak numbers between June and July and this is the best time to look for nests. They are not easy to find and are usually discovered by chance. The activity of bees flying in and out gives the best clue as to a nest's location.

Free nest forms and a colour identification chart at £1.50 (cheques payable to "The Bumblebee Project") are available from:

The Bumblebee Project, c/o Mike Fussell, Department of Zoology, Downing Street, Cambridge CB2 3EJ.

English Heritage and nature conservation

English Heritage has appointed John Thompson, on secondment from NCC, to be their Nature Conservation Adviser. John joined the old NC in 1960 as a Warden Naturalist in East Anglia, moved to the Shrewsbury Office in 1964 and had been Regional Officer for the West Midlands (formerly Midlands) since 1966.

This very encouraging move by English Heritage is designed to help them care better for the wildlife on their sites and to identify potential for enhancement. One of John's tasks will be to identify biological survey requirements and make sure that the resulting data are translated into management practice. He is currently examining current land management practice on a sample of the properties and assessing it in terms of nature conservation. He is also looking at the actual and potential value of standing remains.

Later the work will involve interpretation of biological features, through trails, leaflets etc., to visitors, initiating a programme of training seminars for English Heritage staff, and developing better professional links between English Heritage and the Nature Conservancy Council.

Any help which Biological Records Centres can give to John by putting him in touch with data for English Heritage sites will be welcomed.

John Thompson may be contacted at NCC's Shrewsbury Office (Attingham Park, Shrewsbury, SY4 4TW, telephone 074 377 611) or at Room 621, Key Sign House, 429 Oxford Street, London W1R 2HD, telephone (071) 973 3000.

NERC's 1990 Countryside Survey

NERC is undertaking a GB survey of land use, land cover and ecology during 1990. This survey extends previous surveys carried out in 1978 and 1984, and will provide basic data on the current state of the countryside as well as information on change over the last decade. The survey will be led by ITE and will include collaboration with IFE and other research groups. It will cost about £1.7 million and is funded by NERC and DoE with support from NCC. The specific objectives are:

- To define the characteristics of current land cover, landscape features, terrestrial and aquatic vegetation and macro-invertebrate assemblages in GB
- To identify recent changes in these features
- To establish an improved baseline for assessing land use and ecological change by means of a further survey in 1996
- To collaborate with other research groups, and to collect data which will correlate with other relevant datasets and models

Field Survey

Field records will be made of over 500 one-kilometre squares. These squares are a stratified random sample drawn from ITE's Land Classification System. The latter identifies 32 land classes in GB based on factors such as climate, topography and soils; all the some 24,000 one-kilometre squares in GB are now being classified in this way. For the 1990 Countryside Survey, upwards of 12 random squares are drawn from each of these 32 land classes; this will include all the 384 squares visited in the 1984 survey.

The basic approach will be the same as that employed in previous ITE surveys. Each of the survey sites will be visited in the field by a team of surveyors and specified data will be mapped or listed as appropriate.

In all squares, land cover and landscape feature information will be mapped, using the same categories and definitions as were used in 1984.

In 384 squares (i.e. the 1984 sample), detailed vegetation data will be recorded using quadrats. As in 1977/78, five randomly placed 200 square metre quadrats will be used to record vegetation data, together with two 10 by 1 metre "linear quadrats" alongside roads, hedges and streams. In addition, further data will be recorded from smaller quadrats.

In order to assist field surveyors, information which can be gleaned from aerial photographs, but which is not shown on Ordnance Survey maps, will be used as an aid to field mapping. This will include features such as isolated trees and field headlands in the lowlands, and vegetation boundaries in un-enclosed upland situations.

A new venture, not included in the previous surveys, will be the collection of a standard aquatic macro-invertebrate sample from each square with a running water course. All taxa collected will be identified to species, if possible, by ITE.

During the field survey, it is essential that close supervision and liaison are maintained. It is proposed that this will be achieved as follows:

- a complete and detailed field handbook will be prepared
- there will be full and extensive training courses at the start of the field work season
- close supervision of all field teams will be maintained throughout the project by the ITE Project Manager or his colleagues
- each field team will also be "attached" to an ITE Station where ITE staff and resources will be available to supervise, assist and liaise with field surveyors

Satellite Imagery

While the field survey provides information at a very detailed level (which is essential for ecological research), it does comprise a *sample* of the land of Britain. In order to project the results of the sample survey to the whole of GB with greater confidence, it is proposed that the project will contribute to, and form an integral part of, a land cover map of GB derived from interpretation of satellite imagery. This digital land cover map is one of a number of projects by which the British National Space Centre, with funding from the DTI and NERC, are planning to demonstrate practical applications for earth observation from space.

The work will be focused at the Environmental Information Centre (EIC) at ITE Monks Wood, and will involve collaboration with the NRSC at Farnborough, Hunting Technical Services and Bristol University.

Analysis

ITE is currently evaluating the optimal way of handling and analysing the large amount of data that will result from the field survey. A Geographic Information System (ARC/INFO) has been installed recently at ITE Merlewood and considerable knowledge and experience of this system will have been achieved by the end of the 1990 field season. In addition, an Oracle database, which contains much of the existing ITE survey data, will be linked with the GIS. These two powerful technological developments, unavailable in previous years, will be highly suitable for retrieving, handling and analysing survey data.

Analysis of the field data will be of two types. Geographically referenced information, such as maps of land cover and the location of landscape features, will be handled using ARC/INFO. This will allow the overlaying of information from surveys of different dates and facilitate automated measurements of current data and calculation of change statistics. Species data will be handled using existing in-house software; ITE has developed considerable experience in the analysis of such data, and especially in the use of multivariate forms of statistical analysis.

Ways of linking the satellite land cover map generated at the EIC with field data, including the possible use of aquatic macro-invertebrate data from the 22,000 samples collected in the National River Authority's 1990 river quality survey, will be explored.

Collaboration

The 1990 survey provides an excellent opportunity to develop collaborative work with other research staff, both within ITE, within NERC and wider afield. Additional data and samples will be collected during the field survey for such groups, and it is intended that liaison with these and other research teams will lead to genuine research collaboration.

Outputs

Results from the project will be available as summary statistics and as maps. They will be in published form and, where possible, held in an easy-to-access database, and will include:

- measurements in sample squares
- estimates of measured variables in GB
- estimates of change between survey dates in GB
- land cover maps incorporating field and remotely-sensed information
- error estimates for the above

Staffing

The field survey will be managed from ITE Merlewood but will involve staff at all six of the ITE Research stations. In addition, staff will be recruited to the survey teams for the duration of the field survey.

The satellite work will be managed by the EIC at ITE Monks Wood but will involve staff from other ITE sites and elsewhere.

Timing

Field survey will take place between June and September 1990. Data entry and cleaning will occupy the remaining months of 1990 and analysis will take place during 1991. The project will be completed early in 1992, although preliminary results will be available at an earlier date.

Contact: Colin Barr, Institute of Terrestrial Ecology, Merlewood Research Station, Grange-over-Sands, Cumbria, LA11 6JU.

The Hawthorns - Southampton's Urban Wildlife Centre

Southampton's biological recording programme is now well under way. The City Council recently opened a new Urban Wildlife Centre - The Hawthorns - at a cost of £340,000 plus £20,000 sponsorship raised by its staff. Situated on previously derelict land within Southampton Common (SSSI), it comprises a building with exhibition space, classroom and reception/shop set in half a hectare of habitats designed and managed specifically for wildlife: stream, ponds, bog, wet and dry meadow, dell, copse, heath, plus bird, butterfly and demonstration wildlife gardens. All are fully accessible to disabled visitors and open seven days a week.

The Centre opened in late April and the public has responded quickly to the new facilities, with 13,838 visitors (1,930 on school visits) in the first six weeks and school visits fully booked through to the end of the summer term. All comments have been extremely enthusiastic.

Local fauna has also found its way to the new habitats so that, less than a year after most of the areas were created, the site is buzzing, squeaking, humming and singing with activity.

The Centre's purpose is twofold: ensuring that residents and visitors are provided with the opportunity to appreciate, understand, be involved with and care for their natural environment, and facilitating the retention and improvement of a variety of open spaces by ensuring that scientific data relating to City wildlife and its ecology are researched, documented, analysed and made available to all whose decisions affect it.

In both areas the staff make full use of the expertise and enthusiasm available in the community - the great number of Southampton voluntary groups and the populace generally. The Hawthorns is in a good position to do this as it started life as one of these voluntary groups in 1982.

Volunteers continue to play a major role in providing out-of-hours services (walks, talks and other events), extra staffing of the Centre, especially at weekends, and biological records to be fed into the City database at the Centre. Local industry, commerce and grant trusts also play their part, having so far provided £20,000 sponsorship to

equip the Centre for its opening and in the future, we hope, providing sponsorship for a major display. This is planned to be mostly pictorial, and demonstrating major ecological principles. Meanwhile there are displays answering the most frequently asked wildlife questions with live examples of some of the creatures, such as newts, frogs, mice and rats.

Contact: Dr. Lin Hand, The Hawthorns Urban Wildlife Centre, The Common, Southampton, Hampshire, SO1 2NN, telephone (0703) 671 921.

NCC data and the reorganisation

At the time of writing, almost one year after the initial Government announcement that it was to reorganise NCC, the details of that reorganisation are still not clear, including those which will affect the future of NCC's scientific data sets. For those of you who are not aware, NCC is currently a single body, which has separate operations in England, Scotland and Wales, and centralised scientific, policy and service departments which work at a GB level. The Government plans to replace NCC by three independent bodies, one in each country, and a joint coordinating committee which will oversee such matters as scientific standards, international work, etc. The new bodies for Scotland and Wales will absorb the Countryside Commission functions for those countries, but the England body will not. It is expected that the legislation will receive its Royal Assent this summer. Hopefully, the structures and responsibilities of the four new bodies will then become clearer.

In the midst of all this, the IT area itself has experienced a little turmoil, with staff coming and going. We now have a new team and are able to press forward with such developments as are possible, given the uncertain future. IT developments are centralised, with staff located in a central service unit and in the Countries. It is not yet clear whether there will continue to be a central service, under the auspices of the joint committee, or whether IT developments will be entirely devolved to the three Country agencies.

The reorganisation poses more serious problems regarding the fate of NCC's scientific data sets.

NCC has been compiling data since 1949 (then as NC). These data are held at all levels of the organisation - Regional, Country and GB. Site specific data, held at Regional and Country level, are likely to be the least affected by whatever structural changes finally occur. The COREDATA system, which manages data on SSSIs, is already managed at the Country rather than GB level. However, standards are applied on a GB basis and the same systems are in use, enabling data to be freely exchanged, and comparisons of summary data to be made. Under the new set up, it will obviously be more difficult to ensure that the same standards are used, and that any compatibility that is necessary is maintained.

NCC also holds a wealth of scientific data at the GB level - such as data on species groups and habitat types compiled by its Chief Scientist Directorate. These data relate to sites or geographical areas in all parts of Great Britain and are not necessarily duplicated elsewhere. If, and when, reorganisation takes place these data sets will need to be either divided into three parts or replicated three times. If the joint committee is to have staff with scientific responsibilities, the situation may be even more complicated! Given NCC's already heavy workload, the limited time between now and the proposed reorganisation date (1 April, 1991) and the disruption to staff that the reorganisation will cause, it will be extremely difficult for the replication or re-allocation of data sets to be achieved.

It is still possible that from the point of view of scientific data, the reorganised bodies may function in a very similar way to the old NCC, if the proposed joint arrangements for securing NCC's scientific base become reality. Nevertheless, there is the danger that, amid the turmoil, hard-won and valuable data sets may be left languishing in the corner of a "foreign" file.

Nick Phillips, Senior Data Manager, Nature Conservancy Council, Northminster House, Peterborough, PE1 1UA

The Sussex Directory of Sites and Surveys

The aim of this project is to compile a directory of biological and geological sites and surveys in Sussex. The Directory will be used to identify sources of information for the protection and management of sites, and gaps in the existing survey coverage.

At the moment there is no central register or index of sites and surveys. If survey information is needed quickly on a particular site it may be necessary to contact all the bodies involved to find out who, if anybody, holds relevant data. If information is not held or known about by these bodies it is effectively lost.

The main priorities are to index recent site and survey information (post 1st January 1970), and to index less well known sites with little or no statutory protection (i.e. not SSSIs or National Nature Reserves).

The Directory is organised by a steering committee including representatives from East and West Sussex County Councils, the Sussex Wildlife Trust, the NCC and the Booth Museum of Natural History, Brighton.

The project is initially for one year. By the end of this period (November 1990) there will be a set of 1:10,000 scale maps covering East and West Sussex with overlays showing site boundaries and survey areas, accompanied by two sets of record sheets for sites and surveys. Each member of the Steering Committee will have a copy of the Directory, which will be computerised using Advanced Revelation and Coredata at the NCC, and Advanced Revelation and a version of Recorder at West Sussex County Council, East Sussex County Council, Sussex Wildlife Trust and the Booth Museum of Natural History (the local biological records centre). Autocad will be used to map information for East Sussex.

This project is financially supported by East and West Sussex County Councils, Sussex Wildlife Trust and the NCC.

Contact: Biddy Jarzembowski, Nature Conservancy Council, The Old Candlemakers, West Street, Lewes, East Sussex, BN7

Dead Spaces?

No matter how "well kept", burial and crematoria grounds are too often regarded as "dead spaces", like death itself, inevitable and necessary, but "bad news", to be ignored except when needed, to be kept at arm's length, preferably out of sight - and out of mind.

For some cemeteries, at least, that attitude may be justified. Many cemeteries are often as close-mown and soaked in weedkiller as any urban park or, at the other extreme, an abandoned tangle of bramble, knotweed, ash and sycamore. Only recently has the ecological, as well as the historical and architectural, value of some of our older cemeteries been recognised and only slowly is the notion that cemeteries may be important for the living - for public re-creation and amenity, as well as wildlife - beginning to have any degree of acceptance. Ironically, this would have been a notion fundamental to our Victorian forebears, such as the great cemetery architect J. C. Loudon who, over a century and a half ago, declared that burial grounds should be scenes "calculated to improve the morals and the taste, and by their botanical riches to cultivate the intellect". It is the reemergence of this awareness that prompted the NCC's inclusion of a pamphlet on Burial Grounds in its educational *Points of View* series.

Yet our "dead spaces" are important. In England and Wales, there are over 20,000 of them (including church and chapel yards as well as more modern municipal cemeteries) covering an area of some 30,000 hectares. That is not a huge proportion of our total land surface but it is a significant one. If we added all the ex-burial grounds - city squares and open spaces, many of which mark the sites of old churchyards or cemeteries, medieval plague-pits, neolithic and bronze age barrows - the total area would of course be larger still.

It is not merely the area of burial grounds, however, but their location which makes them important. In rural areas the country churchyard is not only a visually important part of the village landscape, it has a social significance and cultural resonance which makes it central to what we conceive of as our rural heritage, false though that conception may be. Biologically too they may be important, since old burial grounds have often been made from enclosures of old meadowland or pasture, and in some rural areas may still contain "relicts" of undisturbed ancient habitats

that have disappeared in the surrounding area. Some churchyards and burial grounds may still be managed by traditional methods of grazing or hay-cutting. Many will have escaped the use of chemical fertilizers, pesticides or growth regulators, and may be remarkably rich in species. In intensively farmed areas churchyards may be oases of wildlife in arable deserts, where plants and insects which have been eliminated from the surrounding farmland may find refuge.

In our cities and towns, by contrast, our 230 odd cemeteries are generally ignored, although their significance both in amenity and wildlife terms may be - potentially at least - as great or greater than the country churchyard. Within a nine mile radius of the centre of London there are 103 cemeteries covering over 1,350 hectares, an area about the size of Islington, the borough I live in. A similar picture exists in many of our metropolitan areas and in those which, unlike London, have no tradition of Royal Parks, open heaths and commons, or Victorian squares, cemeteries may be the *only* significant areas of open space in the city.

When it comes to trying to quantify this significance, however, the greatest single feature that emerges is our ignorance.

The biological interest of rural churchyards is known to be considerable. Indeed, due in no small measure to the development of the Living Churchyards project by Eve Dennis of the Church and Conservation project at the Arthur Rank Centre, Stoneleigh, it is, with better awareness and management, possibly increasing. A wealth of biological data on churchyards already exists but it is heterogeneous, dispersed and patchy, collected and held by local groups all over the country, and no attempt has yet been made to systematise or collect it.

For example, the BSBI and the Sussex Wildlife Trust have together produced species lists for most of the Sussex churchyards. In one Suffolk churchyard the County Wildlife Trust identified more than 300 different species of flowering plant. Sisland Church where the "Living Churchyard" project was launched in May 1989, is one of the best sites for meadow saxifrage in the country, and in Norfolk, about 95% of meadow saxifrage sites are in churchyards. In Warwickshire, W.I. branches are now into their third year of a butterfly survey of churchyards. David Glue of the BTO has sustained, for a number of years, a Common Bird Census in some 20 churchyards.

In February 1990 a meeting was held under the auspices of the Church and Conservation project and was attended by representatives of organizations such as the BSBI, BTO, BBCS, the British Lichen Society, Geologists' Association, Vincent Bat Society and a number of County Trusts, as well as the NCC. It revealed the tremendous value and interest there would be in bringing this information on churchyards together, and providing guidelines for its future collection, and it is to be hoped that funds can be made available for this to be done.

However, other burial grounds, particularly urban municipal cemeteries and crematoria grounds, present a rather different picture. Here, community involvement - and interest - is often as minimal as that of their existing ecology. Moreover there would be (perhaps understandable) resistance on the part of many cemetery and crematoria managers both to any suggestion that "natural" management has a place in cemetery grounds and particularly to any "interference" by local groups.

At the same time, many cemeteries *are* of biological value, and this is not restricted to those cemeteries that have been unmanaged and are overgrown. Moreover, many cemetery managers *are* not only sympathetic to conservation objectives, but already including them in their management. Even modern municipal grounds may contain interesting habitats and species such as the 14-acres of probably ancient woodland in the new Crematorium at Peterborough, whose manager is attempting to reestablish summer-cut meadow in part of the grounds. Indeed, many cemetery and crematoria managers are already trying new ideas in grounds maintenance, including low input regimes for older burial grounds and new landscaping practices for the modern areas, but at present these remain largely individual initiatives. In Peterborough, there have also been interesting attempts at the "natural" management of modern cemeteries, where rows of identical 1950s gravestones have been interplanted with mixed shrubs which have now grown to obscure the headstones and will be managed as mini-hedgrows. (Where graves are still visited, the hedge is neatly trimmed, resulting in interesting patches of topiary).

For the municipal (and private) cemetery or crematorium manager a low profile may not of itself be necessarily a bad thing, ensuring a minimum of outside interference with grounds management, so long as they are kept "neat and tidy" and the memorials maintained in good condition. Two factors, however, have combined to create

both a growing public interest and a new attitude on the part of their managers in the landscape and management of our cemeteries.

The first has been the squeeze on local authority expenditure and the recognition that financial - and other - pressures on the management of cemetery and crematoria grounds are unlikely to moderate. In this respect cemetery managers and others are beginning to feel that a higher public profile and recognition of the social, amenity, educational, cultural, and ecological value of cemetery and crematoria grounds may not be a bad thing. In addition, recent events in Westminster City Council (which recently sold its cemeteries off for 15 pence and is now faced with having to buy them back at £5 million), and at cemeteries threatened with "development" have highlighted the fact that whilst municipal burial grounds may be seen by some as a financial liability rather than a community asset, they may be seen by others as a potential source of profit. Moreover, the advent of Compulsory Competitive Tendering (whereby local authorities must put out their grounds maintenance to tender) has made it necessary, in some cases for the first time, to produce formal specifications for grounds maintenance, providing an opportunity to consider afresh the objectives of maintenance and the means of achieving them.

At the same time a new concern with the quality of urban living and a move to the "greening" of our cities has prompted a reassessment of the environmental and amenity significance of cemeteries and crematoria grounds. Such an interest perhaps provides an opportunity to realise their potential as significant and valued elements in the built environment. However, to do this much more needs to be known about their current state.

Following last year's (49th) Joint Conference of Burial and Cremation Authorities at Malvern, it was agreed to attempt a survey of different approaches to management practice and local environmental significance of burial and crematoria grounds. The object is both to collect basic data, e.g. on numbers of properties and their area (none of which exist at a national level), the extent of different types of management, the existence of features of particular wildlife, historic or architectural interest etc., and to put together a picture of their present management and significance in the local environment. A questionnaire was sent to all Local Authority cemetery and crematorium (most of which are in urban areas) managers. Responses are now being received.

Questions are included on present management practices and the attitude of managers to more "natural" management, the extent and nature of different types of management, the presence of particular features of wildlife (or other natural, historical or amenity) significance, whether biological or other surveys have already been carried out, and other issues of more specific concern to cemetery managers. It is hoped that, in addition to generating a "base line" of data relating to wildlife and amenity value and potential of burial grounds, the survey will enable the identification of a more limited number of areas and sites for more detailed study.

Already the ESRC has agreed substantial funding for a survey of the cultural (architectural and historical) aspects of cemetery conservation management. Approaches are now being made to the NCC and elsewhere for matched funding, to enable a parallel study of the wildlife and nature conservation aspects to be made. At the same time it is proposed to investigate sources of funding for collation and integration of existing churchyard biological survey data. In the meantime it is hoped that developments in the elaboration and integration of data recording systems (such as COREDATA and RECORDER) will make it possible for the survey to be integrated with other projects, urban and rural.

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