



NATIONAL FEDERATION FOR BIOLOGICAL RECORDING

National Perspectives in Biological Recording in the UK

Report of the Annual Conference held at the Central Electricity
Generating Board in London on Thursday 11th May 1989

edited by G.Stansfield and P.T.Harding

National Federation for Biological Recording
Cambridge, 1990.

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Glossary of abbreviations and acronyms

AUTOCAD	A computer-aided design package
BBC	British Broadcasting Corporation
BCG	Biology Curators' Group
BM(NH)	Natural History Museum (London)
BRC	Biological Records Centre (ITE Monks Wood)
BRISC	Biological Recording in Scotland Campaign
BSBI	Botanical Society of the British Isles
BTO	British Trust for Ornithology
CBC	Common Birds Census
CEGB	Central Electricity Generating Board
COREDATA	Conservation Resources Database (NCC)
CP/M	Control Program Monitor - a disk operating system
DOE	Department of the Environment
EC	European Commission
EIC	Environmental Information Centre (ITE)
ESRC	Economic and Social Research Council
FC	Forestry Commission
GB	Great Britain
GIS	Geographical Information System
GWGS	Greenland White-fronted Goose Study
HQ	Headquarters
IBM	International Business Machines
ITE	Institute of Terrestrial Ecology
IUCN	International Union for the Conservation of Nature
IWRB	International Waterfowl & Wetlands Research Bureau
JANET	Joint Academic Network
MAFF	Ministry of Agriculture Fisheries and Food
MBS	Moorland Birds Study
MDA	Museum Documentation Association
MS/DOS	Microsoft (Corporation) Disk Operating System
NCC	Nature Conservancy Council
NERC	Natural Environment Research Council
NFBR	National Federation for Biological Recording
NGO	Non-governmental organization
NNR	National Nature Reserve
PC	Personal computer
PSS	Packet Switching System
RAD	Rural Areas Database
RBBP	Rare Breeding Birds Panel
RECORDER	Biological records computerization system devised for NCC & NFBR by Dr S G Ball
RSNC	Royal Society for Nature Conservation
RSPB	Royal Society for the Protection of Birds
SSSI	Site of Special Scientific Interest
UK	United Kingdom of Great Britain and Northern Ireland
VWT	Vincent Wildlife Trust
WSG	Wader Study Group

Introduction

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The 5th Annual Meeting of the National Federation for Biological Recording was held at the offices of the Central Electricity Generating Board at Sudbury House in London and the Federation is pleased to record its appreciation to CEGB both for providing the venue for the meeting and for a financial contribution towards the publication of these proceedings.

It was thought appropriate that the fourth annual conference of the NFBR should focus on some national perspectives in biological recording in the United Kingdom. The papers which follow present a timely account of developments and issues relating to biological recording in the UK.

We have high hopes for the Coordinating Commission on Biological Recording in the UK which is shortly to start work. It is our belief that this conference report, together with the reports of previous conferences in 1986 and 1987 provide a lasting and valuable contribution to the philosophy and practice of biological recording, and provide an excellent basis for the work of the Commission.

Biological Survey: Need and Network - a review of progress towards national policies

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Introduction

The paper reviews recent initiatives in the co-ordination of biological recording in the United Kingdom, with special reference to the need for national policies. National and local recording are considered and changes in circumstances (particularly staff and computing capacity) and of priorities are noted. The roles of key organizations are described. The recommendations of a Linnean Society working party on biological recording were discussed at a meeting convened by NERC and the outcome of that meeting has been the formation of a steering group to facilitate the recommendations.

Oscillating natural history

In his presidential address to the Linnean Society Professor Berry (1983) discussed the growth of 'professional biology', at the expense of 'natural history' at the end of the 19th century. He noted, however, that since the Second World War 'natural history', particularly when linked to wildlife conservation, has regained impetus. I would go further to suggest that 'natural history' has never had so many followers, be they mainly somewhat passive, such as most members of the RSPB and wildlife trusts, or be they active practitioners - field naturalists. Increased leisure time (and the enforced leisure of unemployment and early retirement), greater mobility, constant media exposure and a boom in publishing have all fueled the fire of enthusiasm for natural history. However, the emphasis is less scientific than, say, before the 1939-45 war, with increased interest in conservation and in rare species. Few amateurs have published on the biology of species in recent decades, but this change may partly be due to competition (whether real or perceived) with professional scientists.

National recording

Biological recording has undergone significant changes since the first formalized national recording scheme began in 1954 with the BSBI's project to map the distribution of vascular plants and which culminated in the Atlas of the British Flora (Perring & Walters 1962). The Biological Records Centre (BRC) was set up in 1964, originally to map the flora and fauna of the British Isles, but its role has developed and changed significantly in the last 25 years (Harding 1984, 1985).

Local recording

Although the collection of information on wildlife has had a strong local bias for at least 150 years, formalized environmental recording, at a local level, came to the fore in the early 1970s. A conference in 1973 brought together the majority of those concerned with local biological records centres (Stansfield 1973) and in 1977, the Museums Association convened a Standing Committee on Environmental Record Centres (Stewart 1980a, b) which met annually for a few years up to 1981. Also in 1977, the Biological Recording in Scotland Committee (BRISC) was formed (Somerville 1977). A meeting of records centre organizers was held at Monks Wood in December 1977 and, as a result, a Handbook for Biological Records Centres was produced in 1978 (Flood & Perring 1978).

The last major review of local records centres was made in 1980 (Harding & Greenwood 1981, Greenwood & Harding 1982) which documented the work, facilities and staffing of over 60 centres. Most local centres were based at local authority-funded museums and worked without much reference to what similar organizations were doing. The Museum Documentation Association published an issue of MDA Information devoted to environmental recording (Anon 1984), which reviewed some of the major areas of work at the time.

Biology Curators' Group

In the absence of any 'parent body' or co-ordinating group, many local centre managers looked to the Biology Curators' Group (BCG) and its Newsletter as a medium through which to publicize their work and to discuss topics. By the early 1980s, a significant part of the BCG Newsletter was devoted to topics related to biological recording, including contributions by Whiteley (1983), Copp (1984), Ely (1984), Francis (1984), Garland & Whiteley (1984) and Harding (1984).

BCG convened an important seminar in September 1984 to discuss biological recording (Anon 1985). The seminar made the following conclusions:

1. The present situation both nationally and locally for biological recording, storage and retrieval of data is unsatisfactory.
2. Agreed standards should be set for biological recording, but due regard must be given to amateur naturalists who collect valuable information but who may not wish to be tied to particular methods of recording.
3. Where applicable, museums should provide a local biological data bank service.
4. Local biological data banks should provide a range of services to the public in general.
5. Biological recording is not adequately financed.

The seminar also resolved that "the Biology Curator's Group should set up a working group including other interested organizations to investigate the present situation in relation to biological recording and in the light of Nature Conservation in Great Britain (Nature Conservancy Council 1984) take steps to improve the situation and seek appropriate financial resources".

Resulting from this seminar, two initiatives developed. At a 'practical' level, BCG and BRC collaborated to set up the Biological Recording Forum, 1985 (Copp & Harding 1985) from which the National Federation for Biological Recording (NFBR) has developed and at a 'political' level, the Linnean Society set up a working party chaired by Professor Berry.

Independent of these two initiatives, in 1986 NCC and Wildlife Link formed the Joint NCC/NGO Data handling Group.

National Federation for Biological Recording

The National Federation for Biological Recording was launched at a conference at Cambridge in April 1986. It represents the concern of many scientists, conservationists and amateur naturalists in the UK that the importance of biological recording is not sufficiently recognized and that funding and co-ordination are needed.

NFBR is too young an organization to have much of a history. It was formed with great enthusiasm, but there are limitations to what a small group of volunteers, already in full-time employment, can achieve.

The Federation seeks to involve the many agencies active in biological recording and, in doing so, to help improve their effectiveness in gathering, managing and disseminating biological records. The immediate aim of the Federation has been to improve awareness of the importance of biological recording in all organizations concerned with the environment. It has looked at practical issues and has been involved in 'political' issues too. Three successful annual conferences precede this one: in 1986 on biological recording in a changing landscape (Harding & Roberts 1986), in 1987 on the products of biological recording (Stansfield & Harding 1988) and in 1988 on the use of computers in biological recording. NFBR communicates with its members through a periodic newsletter.

I may be biased, but without the intrusiveness and persistence of NFBR we might not have progressed as far as we have down the long road (Figure 1) identified at the BCG seminar in 1984.

Changing circumstances

The employment crisis of the late 1970s provided a means for local records centres to gain extra staff through various schemes operated by the Manpower Services Commission. Whilst they lasted, many centres flourished with numerous extra staff. In some cases, local centres set up using MSC schemes have formed the basis of new, local authority financed, centres. Employment Training appears to be less suitable for placing staff in centres and this valuable source of manpower has now almost completely ended. A few records centres have benefited from one or two extra members of staff, especially where the value of the centre's data is recognized, at the local authority headquarters.

Computers have come to play an increasingly important part in the thinking and in the practice of biological recording. In 1980, the BCG/BRC survey of local centres found that only 7% of the local centres responding had access to a computer (Greenwood & Harding 1982). By 1985, 30 centres and naturalists trusts made use of computers (Copp in Copp & Harding 1985). Up-to-date figures are not available, but the number of records centres with access to computers has probably increased considerably. The implementation of the RECORDER records management package, through collaboration between NCC, RSNC and WWF will lead to more computerization and greater standardization, and

will benefit from the experience gained through RSNC's attempts to provide a standard package for county naturalists trusts.

Computerized data lend themselves to analysis in a variety of ways including the use of Geographical Information Systems (GIS). Such systems integrate, analyse and display spatially-referenced data, for example to relate species distributions to the occurrence of habitat types, land ownership and land-use planning. A simplified type of GIS, using the computer software package AUTOCAD, was demonstrated by Claire Appleby at the opening of the Wiltshire Biological Records Centre in September 1987.

The present political climate has encouraged (and in some cases forced) some local centres to seek alternative sources of funding to maintain and expand their activities. For example, the Cornish Biological Records Unit has been highly successful in obtaining funding and resources for its activities, and in West Yorkshire an Ecological Advisory and Information Service has been formed from the first local records centre to be formally designated as such (Lavin 1985). There is also increased awareness of professional standards in data management with both the Working Panel of Local Authority Ecologists and NFBR stressing the need for training and standards.

Changing priorities

Emphasis in recording has changed over the last 25 years. In the early years mapping the distribution of species was almost the only objective of recording and this is still the case for some individuals and groups concerned with county atlas projects. Increasingly the emphasis has now shifted towards collecting, storing and using data which relate species records to sites and to compiling inventories of habitats and species at sites. Awareness of the use of this type of data is growing outside the immediate biological recording fraternity. Recent legislation places greater emphasis on the assessment of land development proposals using biological information. Environmental assessment is with us to stay and biological recording practitioners have never before been in a position where they are being sought out by developers. In some cases, local centres have already acted to fill the need for environmental information by acting as 'consultants' to planners and developers. The original concept, of biological record centres being within the natural history departments of museums, may no longer be entirely appropriate. As centres become increasingly 'user-driven', and where the main users are planners and developers, it may be that local authority funded centres should look increasingly to planning departments for financial support.

The Ministerial Committee of the Council for Europe approved in 1987 a recommendation (R (87) 13) that governments in member states should promote and support the development of local, regional and national environmental databanks and a variety of related activities (see Berry 1988, Appendix IV).

The greening of the present government has much to do with decisions made in Brussels. We should all be aware that a proposed EC directive on freedom of access to information on the environment which, if it is enacted, may have significant implications for those concerned with biological recording.

Joint NCC/NGO Data Handling Group

The group was formed in September 1986 and is administered jointly by NCC and Wildlife Link. Membership of the group is by invitation only and at present consists of organizations loosely classified as 'non-governmental organizations' with Wildlife Link providing the secretariat, (Annex 1).

The Group has the following terms of reference:

1. In furtherance of the objectives in 'Nature Conservation in Great Britain', to exchange information within the group's subject area, on
 - i respective bodies' current and future programmes to assist in developing complementary action.
 - ii respective bodies' development of policies in major relevant issues.
2. To review the collection, storage and processing of ecological data on habitats and species.
3. To endeavour to facilitate better means of exchange of ecological data.

The Group proposes to extend these terms of reference to include the promotion of standards for software and for species and habitat codings.

By acting as a forum, the Group allows the free-flow of information about computing developments at NCC and at constituent organizations. NCC has collated information on hardware, communications, software and

coding systems, and on the contents of datasets, at NGOs represented on the Group, but little progress has been made with using the information.

The Linnean Society Report

The Linnean Society Working Party, set up following the BCG seminar in 1984 and particularly in response to stimulus from the Steering Committee of NFBR during 1985, held its first meeting in May 1986. After 8 meetings, its report Biological Survey: Need and Network (Berry 1988) was publicly launched in July 1988. Press response was muted and in several cases linked with other newsworthy items such as proposed staff cuts at NERC. Production of the report was grant aided by the British Ecological Society, Department of the Environment, Nature Conservancy Council and World Wide Fund for Nature.

The report has its critics - 'nothing new', 'heard it all before', but when did they ever hear, or more importantly see, it being said with the support of such important backers. The Linnean Society report has brought the debate into a more political sphere, a sphere where decisions on policies and finance may be influenced.

Biological Recording in the U.K.

The Linnean Society report provided a starting point for a meeting titled 'Biological Recording in the U.K.' held at the Royal Society on 21 February 1989. The meeting was convened by NERC, with the NERC Director of Terrestrial and Freshwater Sciences, Dr Bernard Tinker, as chairman.

Invitations were sent to over 30 key national organizations actively involved with, or with an interest in the products of, the collation, storage and use of data from biological survey. The meeting was attended by 38 people representing 28 organizations (see Annex 2).

Professor Berry spoke on the Linnean Society Report, Dr Barry Wyatt on the ITE Environmental Information Centre and Ms Mandy Lane on the ESRC Rural Areas Database. Each organization had provided preparatory papers for the meeting to which representatives spoke briefly. In discussion, 7 main topics were dealt with in detail:

1. The scope of biological recording - defining the boundaries of the topic.
2. The need for baseline scientific information.

3. Determining priorities.
4. The need for a catalogue of data resources.
5. Ownership of data.
6. Taxonomy and training.
7. Local and regional structures in recording.

The meeting considered the recommendations of the Linnean Society Report. The minutes of the meeting record the following responses to the recommendations.

Recommendation 1: that a co-ordinating commission be established as soon as possible, under the lead of an appropriate body.

Endorsed. It was noted that the commission would be a short-lived group, to be disbanded once the objectives of recommendations 2, 3 & 4 had been achieved.

Recommendation 2: that the co-ordinating commission draw up a procedure for collaboration between elements such as local records centres, EIC, RAD and other appropriate sources of data.

Endorsed. It was noted that the procedure should include the collection, storage and dissemination of data. It was also noted that additional data sets should be considered when examining resources, for example, air and water pollution data and marine (coastal) surveys.

Recommendation 3: that a continuing body be established to oversee local records centres.

Endorsed with qualification. This body would be formed under the guidance of the commission (Recommendation 1) with the full agreement and with representation of statutory, voluntary and other appropriate organizations.

It was agreed that the co-ordinating body should administer the voluntary registration and accreditation of local centres and other sources of data rather than oversee them. Standards and transfer formats will be agreed by consensus.

Recommendation 4: that the co-ordinating commission seek funding from central governmental agencies for adequate software development and support, for the establishment of a coherent computer network and for providing trained personnel.

Endorsed. The co-ordinating commission would be asked to initiate a thorough review of biological recording resources in the UK, for example, to list local records centres, their data holdings, staffing and costs, and to assess the relevance of other data sources. The potential role of both RAD and the Museums Documentation Association in advising on a computer network and related problems was noted. It was also noted that NCC, RSNC and WWF have collaborated to develop and install the RECORDER recording package at a few selected records centres and county trusts. Funding should be sought from any relevant source and not solely from central government agencies.

Recommendation 5: that taxonomic training should be supervised initially by the co-ordinating commission, to foster improved competence in identification at the local level.

This recommendation was noted as a desirable aim, but somewhat outside the main theme of the meeting and discussion. BM(NH) said that the need for training in taxonomy and identification would be reported back to the Director BM(NH). The Linnean Society reported that an initiative on taxonomy was planned.

Recommendation 6: the standards for the operation of local records centres to be determined by the national interpretative unit.

This recommendation overlapped with Recommendation 3 and was regarded as a topic for consideration by the co-ordinating commission. It was noted that there must be interaction between data collectors, collators, and storers and data users to raise standards and to develop a mechanism for accreditation.

In his summing up, Dr Ronald Keay, President of the Institute of Biology, proposed that NERC should continue its close involvement in the topic by convening a small steering group to collate and formulate ideas and to form the nucleus of the co-ordinating commission proposed in Recommendation 1. In response, Dr Tinker agreed that a small steering group should be formed to draw up more detailed proposals based on the recommendations of the Linnean Society Working Party. Although NERC could not be ultimately responsible for the implementation of the recommendations endorsed by this meeting, it would act as convener until the co-ordinating commission had been formed.

The meeting agreed that the steering group should consist of representatives of NERC, DOE, NCC and NFBR and that it should report to the organizations represented at this meeting.

Biological recording steering group

The steering group met in May and June 1989 and plans to complete its work by the end of this year. It has discussed the scope of biological recording and the objectives and priorities of the co-ordinating commission. Criteria for representation on the commission have also been discussed.

Concluding remarks

Making and perfecting the prototype is always the most difficult and controversial phase of the production of a new machine. In Britain, we have potentially the largest and most sophisticated biological information-gathering 'machine' in the world. We have not had an original to copy and we have been faced with rapidly changing circumstances and priorities. The present phase of concerted effort towards national policies and a comprehensive overview began only in 1984. Since then, NFBR has been formed, the Rural Atlas Database and the ITE Environmental Information Centre have been set up and the Nature Conservancy Council has established its own internal computer network and the Coredata database. In the last 5 years we have made significant progress towards national policies (Fig. 1).

We (the biological recording practitioner) may still be a long distance from our particular Holy Grail, but we are now confident that we are not the only people who believe it exists!

Acknowledgements

I am pleased to acknowledge my personal thanks, and I am sure those of many others concerned with biological recording, to Sam Berry for his enthusiasm and energy in promoting the interests of biological recording during recent years. We needed a champion, a catalyst and an *eminence grise*; Sam has served as all three. I am also personally grateful to Charles Copp who provided much of the driving force in the formation of NFBR and the formulation of its thinking. He, and Claire Appleby, made several constructive comments on a draft of this paper.

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