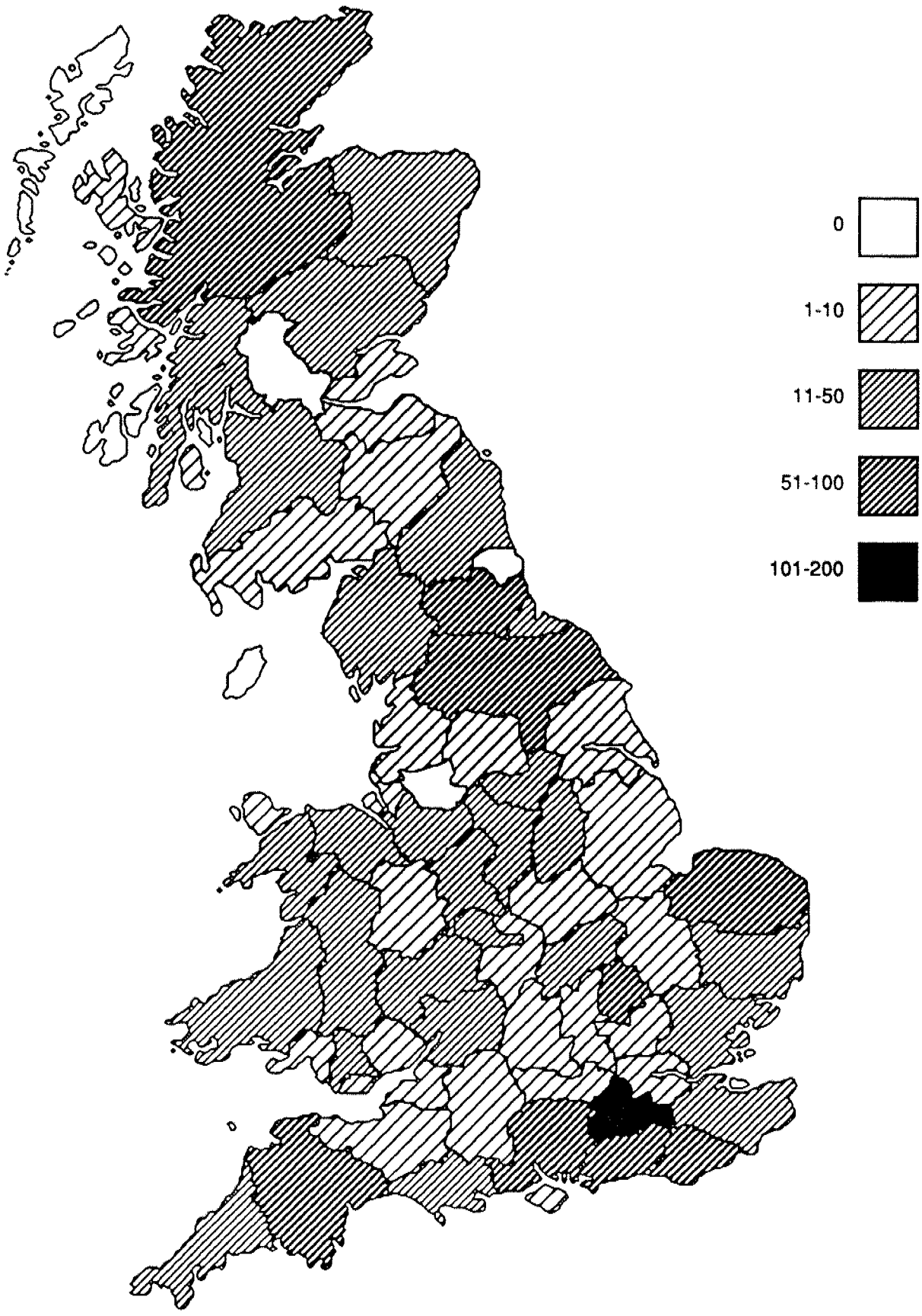
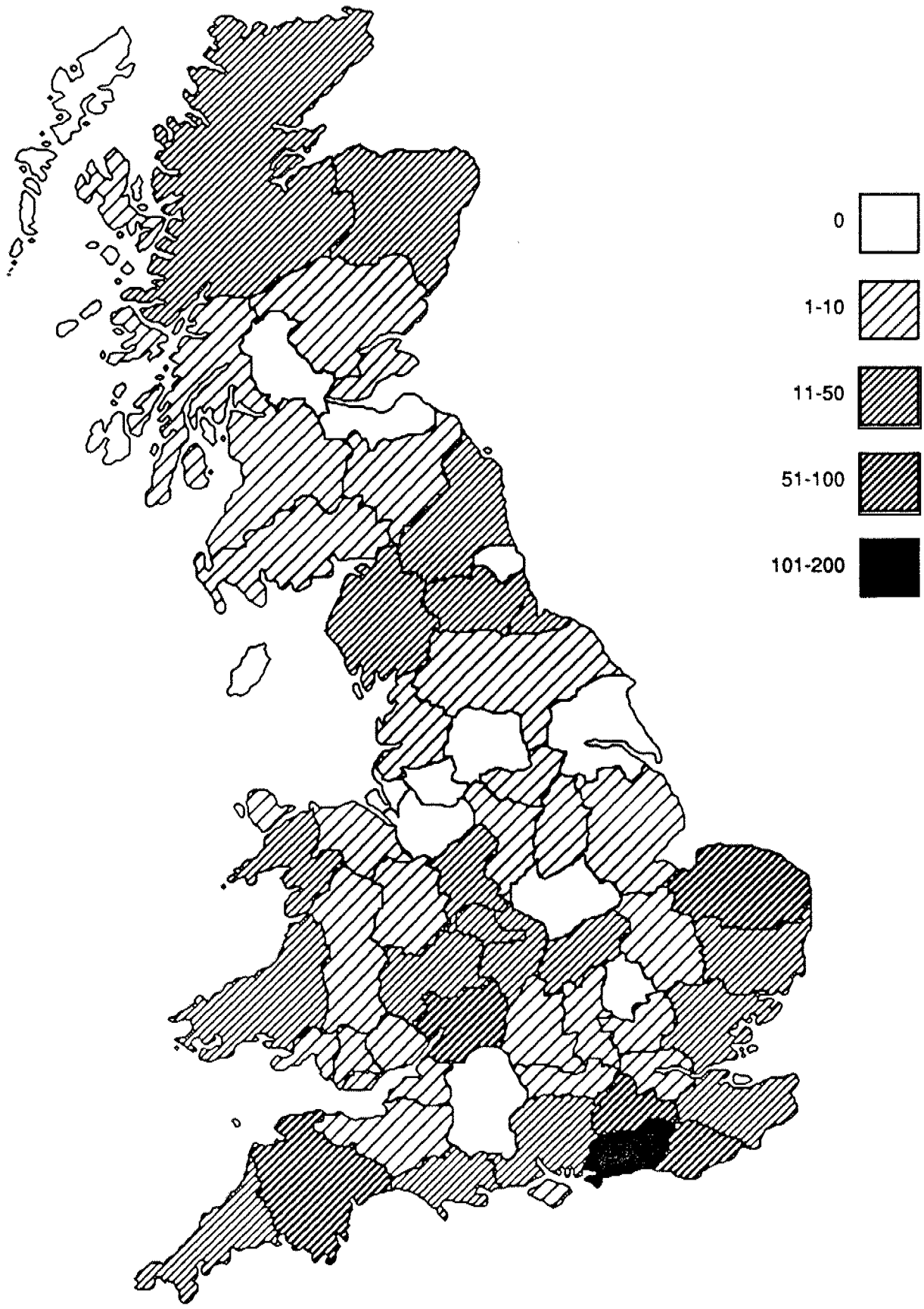
Fig 2.2
Numbers of records of each species received by the national survey between 1990 and 1992, by county. N = 4918.

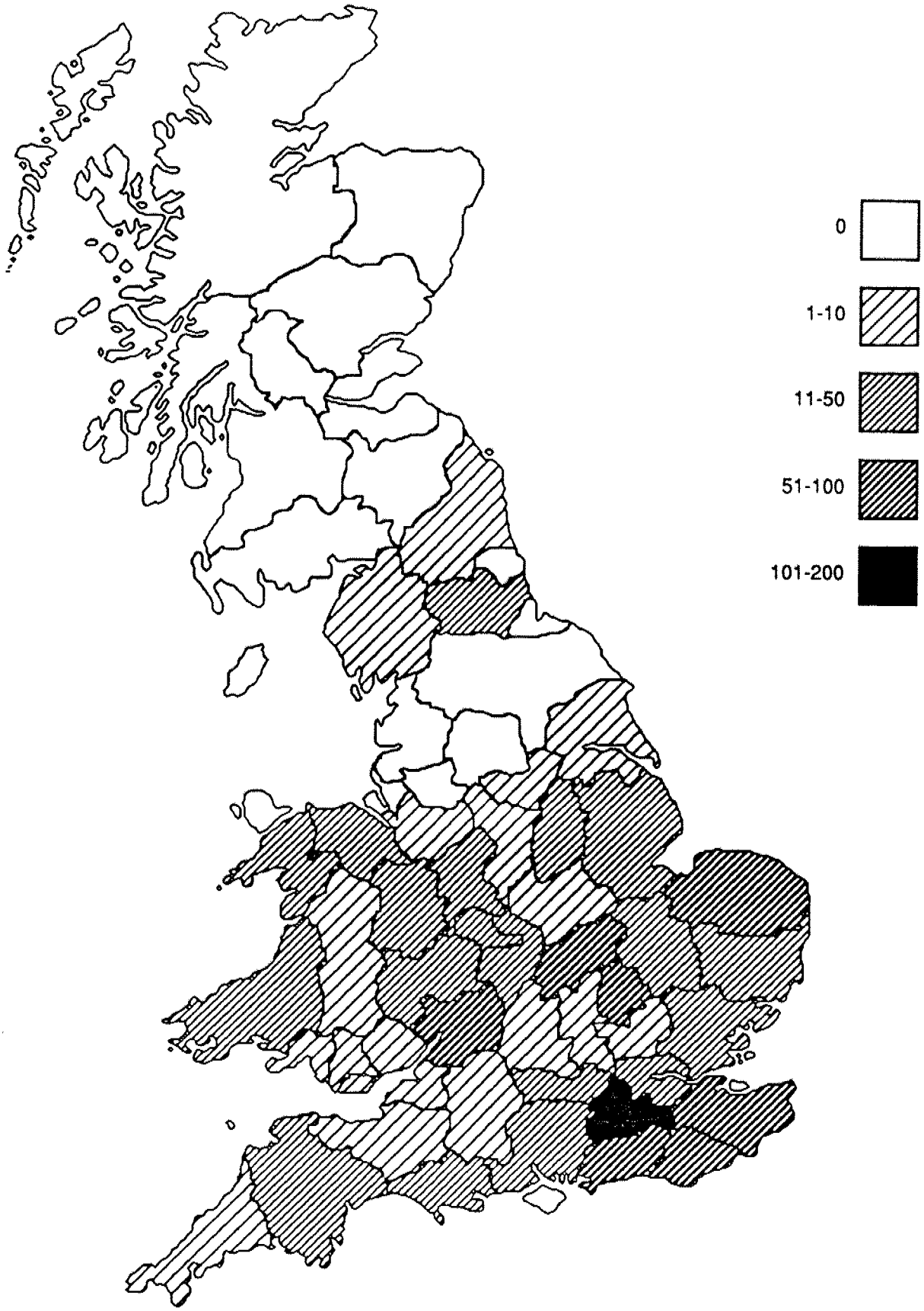
(a) Common lizard



(b) Slow worm



(c) Grass snake



Moors, the Norfolk Brecklands and the heathlands of south east England for example). The species was found at relatively low abundance in the English Midlands, even where survey coverage was adequate (Fig 2.2(d)). With the exception of Surrey, the number of records received from counties containing large conurbations was low.

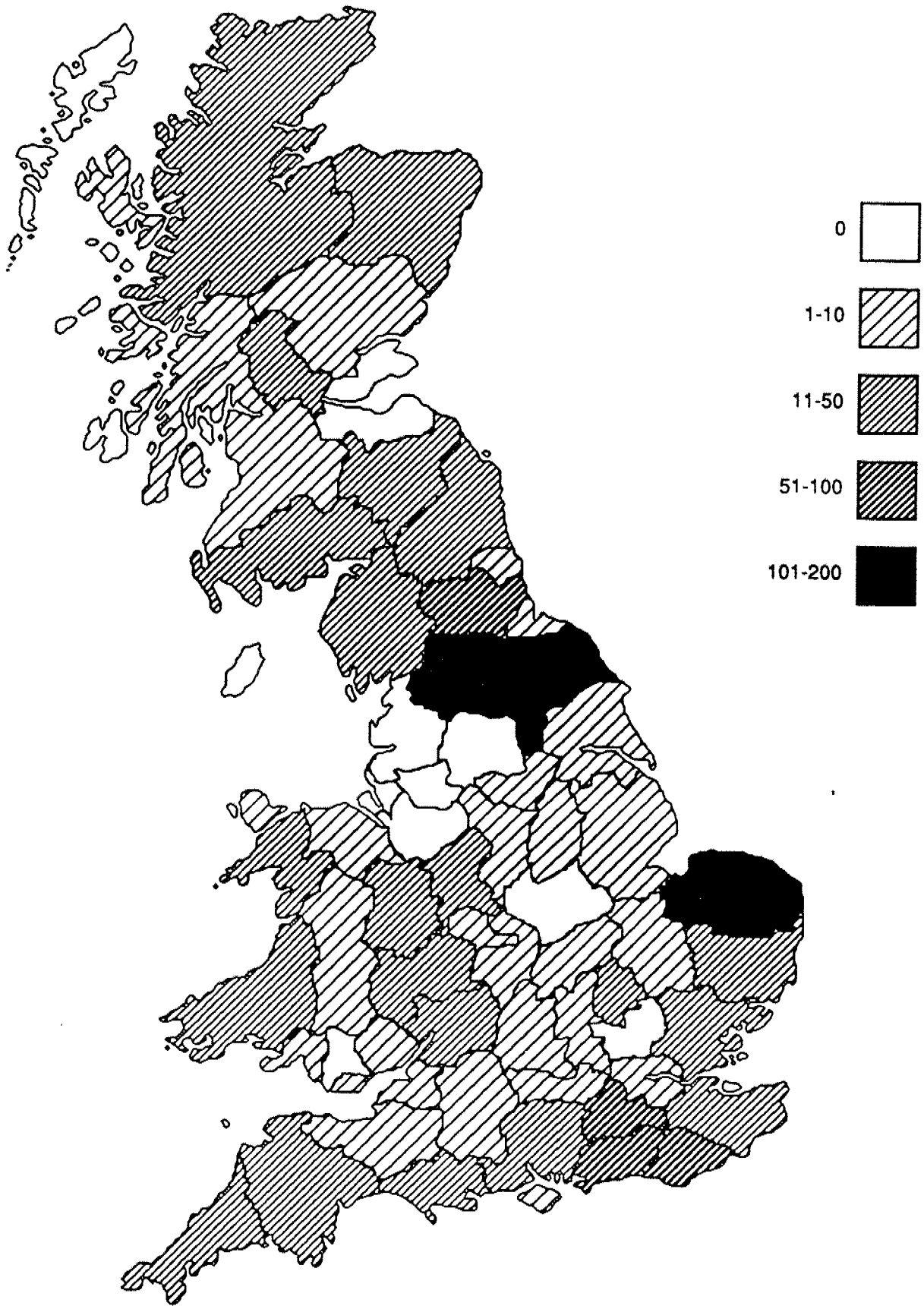
2.3 Discussion

In terms of the number of 10km squares occupied, the common lizard was more widespread than the other three species, each of which was found within approximately the same percentage of the country. Similarly, the individual records for each of the four species were returned in approximately the same proportions.

Both the distribution maps and those illustrating numbers of sightings per county tended to reflect the numbers of recorders. It was therefore possible to assess species distributions, but not relative levels of abundance, within most recorded areas. One could, however, reasonably attribute small numbers of records from areas where survey coverage was apparently high to low reptile population levels. For example, despite good survey coverage over much of the southern Midlands the adder was seldom reported there. These data indicate the species to have a predominantly upland distribution.

It is possible that the parts of the country that were well recorded may be those where reptile status is highest. An alternative explanation of the observed distributions is that areas of apparent high status were simply those in which recording was well organised, and that searches in other areas might have proved just as fruitful. Until systematic surveying is undertaken throughout Britain, species status will remain unknown.

(d) Adder



CHAPTER 3

HABITATS

3.1 Habitat classification

Eighty-two percent of the records (4,065) contained habitat information. The Leicester Polytechnic survey forms suggested letter codes for eight broad land-use types, but gave recorders the option of specifying others (Appendix 4). Ninety distinct habitat descriptions were subsequently identified from the records, each of which was coded and entered into the database. These specific categories were distilled into 12 broad land-use types. The habitat field of the database therefore contains the specific code or codes for the land-use and/or features identified by the recorder, and also the broad category to which each was assigned by the survey organisers. Thus, no detail was lost, but general habitat information was presented simply, in an easily extractable form. Appendix 6 contains the ninety specific recorded habitats with their database code; the 12 "key" categories are identified by "X".

3.2 Data analysis

At the outset of the reptile project, it was suggested that should more funding be available in years 2 and 3, the recording effort should be developed to include systematic surveys. However, in the event no extra resources were forthcoming so the complexity of data collection was not increased. Consequently, as no negative records were received, the data could not be standardised for the degree of search effort. Apparent correlations between species and habitats have not been tested statistically, but associations are inferred from the data.

3.3 Habitats sampled

Figure 3.1 shows the proportions of the 12 habitat types recorded overall, and also for each of the species individually. As more than one habitat type was entered for some of the records, the total percentages may exceed 100. The land-uses recorded most frequently were woodland (reported for 28% of records), heath or moorland (27%) and all types of grassland (25%). The next two most common habitat types were wetland (animals were recorded as being in or adjacent to ponds, rivers etc), (12%) and gardens or parks (11%). Mineral extraction sites were recorded at four percent of sites, but the remaining five categories were each mentioned in less than three percent of records.

3.4 Species habitat associations

3.4.1 Common lizard

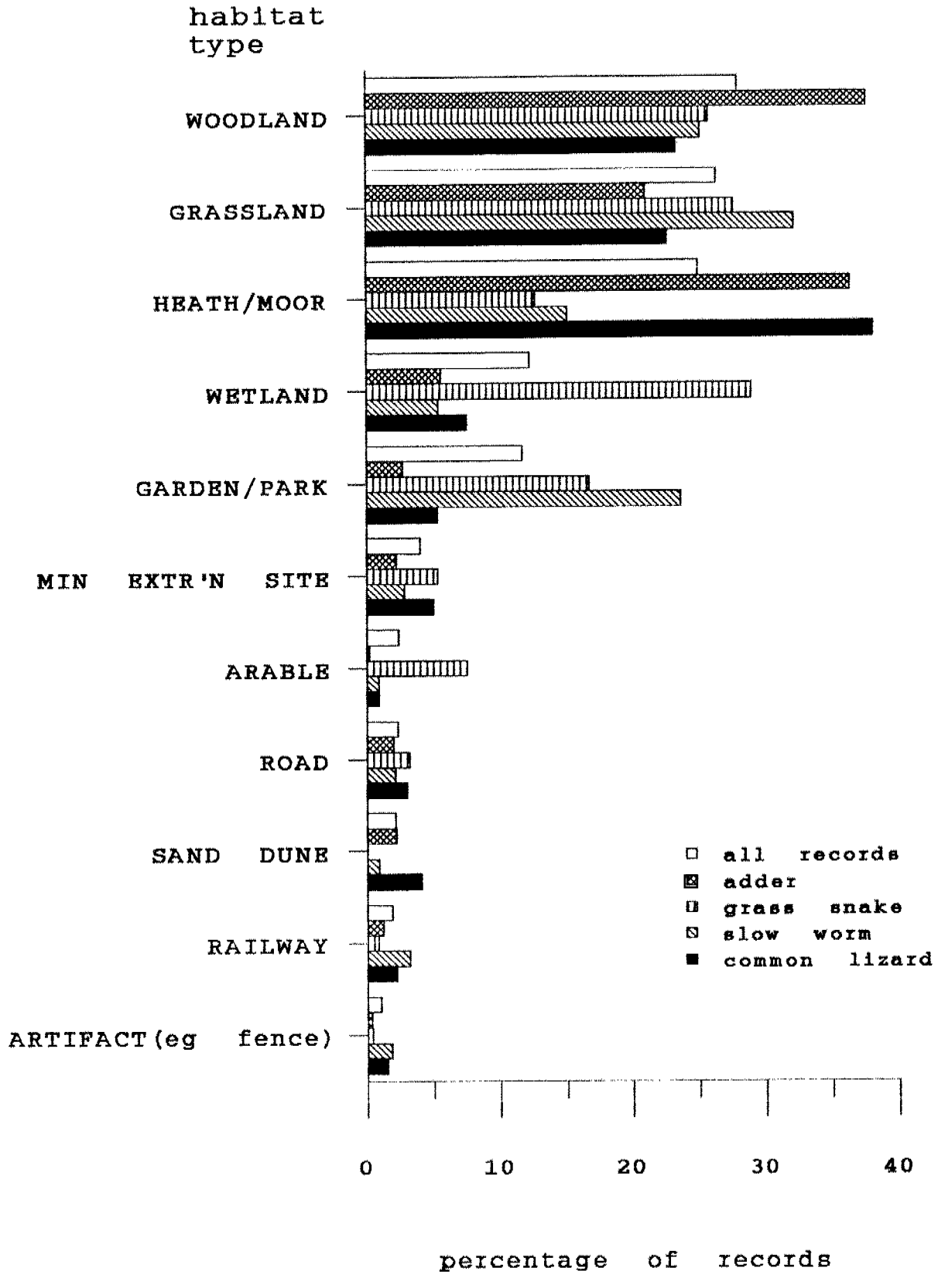
Common lizards were most frequently associated with heath or moorland habitat (Fig 3.1). In contrast, smaller proportions of lizard sightings had occurred in gardens and in arable land. The species was, however, recorded in a relatively high proportion of sand dune sites (4%).

3.4.2 Slow worm

The slow worm was recorded more frequently in grassland than in any other habitat (32% of slow worm records) and in gardens more often than any other species (24%)(Fig 3.1). It was also relatively frequently associated with woodland (25%), but found with comparatively low frequency on heathland or moorland (15%) or associated with wetland (5%). Slow worms were seldom recorded on sand dunes or arable land.

Fig 3.1

Habitats associated with each of the reptile species recorded for the national survey, 1989 to 1992.



3.4.3 Grass snake

Data relating to Scotland was excluded in the analysis of grass snake habitats, as being outside the species distribution range. Grass snake records were principally associated with wetland, (29% of grass snake records), grassland (28%) and woodland (26%)(Fig 3.1). A comparatively high percentage of observations were made in arable land (8% of grass snake records as compared to 2% of all records of all the species). A relatively high proportion of records was associated with gardens, but a low proportion with heath or moorland.

3.4.4 Adder

High proportions of adder sightings were associated with woodland (38%) and heath or moorland (36%) habitats (Fig 3.1). Relatively low percentages of adder records were found either in gardens or near water-bodies.

3.5 Discussion

Common lizards and adders were the species most frequently associated with heathland or moorland habitats, and least frequently encountered in gardens. The data suggest these to be species of natural or semi-natural habitats, in areas relatively undisturbed by people. Both species were associated with upland parts of Britain. Slow worms and grass snakes, on the other hand, were relatively frequently observed in gardens, suggesting tolerance to disturbance. Slow worm distribution was wide however, including both upland and lowland areas. The comparative prevalence of grass snakes within arable land suggests it to be a predominantly lowland species. The species' association with wetland habitats was also confirmed by the data. Woodland apparently constituted good reptile habitat, as this land-use was associated with a proportionately high percentage of the sightings of each of the four species, but especially the adder.

CHAPTER 4

DISCUSSION AND CONCLUSIONS

4.1 Achievements relative to objectives

The one objective stated in the contract annex was "*To initiate a project on the common reptiles*", which has been accomplished. However, in order to achieve that overall objective, other specific objectives were set.

1) *To review BRC data held at Monks Wood in order to assess current knowledge of the species in Britain.*

This was undertaken during 1990, and the results reported in the interim report, Swan and Oldham 1990. Recorder contacts and records were gained through BRC, as well as preliminary indications of UK species distributions. The early collation of BRC records allowed the initial development of the national survey database ahead of the launch of the volunteer data gathering phase. All national survey data subsequently accumulated have been transferred to BRC to be incorporated into the new herpetological atlas.

2) *To expand the herpetological recorder network to include reptile surveyors.*

In 1990, no post-1970 records were available for 27 counties, but by the end of the contract only one remained completely unrecorded. Approximately 240 reptile surveyors were recruited during the survey who had previously recorded neither for the amphibian survey, nor for BRC.

3) *To collect data to investigate reptile distributions and habitat associations.*

In total, 4,918 records of species observations were received from every county in Britain (except one), including several off-shore islands. The survey data related to 977 10km squares

throughout the country, and 4,065 records contained habitat information.

4.2 Results summary

Each species, apart from the grass snake which was absent from Scotland, was widely distributed within Britain. Adders and common lizards shared similar distribution ranges, but adders were less frequently observed within the agricultural lowlands or near human population centres. The common lizard was the most frequently recorded species overall. Slow worms and grass snakes were more often found in gardens than the other two species, and overall had wider distributions and were recorded more frequently in lowland areas. Nevertheless, slow worms were recorded throughout Britain. The egg-laying ecology of the grass snake probably limits the climatic range in which the species can survive, the latitudinal northern limit of which is presumably reached in northern England.

Suggestions of comparative abundance were inferred from data from well-surveyed areas in which absence could probably not be attributed solely to low survey coverage. From such information, there were indications that adder and common lizard status was high in northern Scotland compared to the rest of Britain. On well-surveyed parts of the English Midlands, on the other hand, adder status was apparently considerably lower than that of the other species.

Heath and moorland, grassland and woodland were the most frequently surveyed of the 11 broad habitat types, and which were correspondingly associated with the majority of records of all species. There were, however, apparent differences in recorded habitat associations between the species. The slow worm was associated with gardens, as was the grass snake, but the latter to a lesser extent. Grass snakes were prevalent in or near water and were more frequently seen within arable land than the other species. Adders were strongly associated with heath and moorland, or woodlands, principally in upland areas.

4.3 Conclusions

A common reptile survey has been initiated, and the recorder network accordingly expanded.

Approximately 5,000 records have been collected, from which distribution maps have been produced and limited status information inferred.

Over 4,000 items of descriptive habitat information were provided, from which some species habitat associations are apparent.

Areas of survey shortfall in terms of a) coverage of the country and b) data providing information on species ecologies and habitat preferences are indicated.

ACKNOWLEDGEMENTS

We should like first to thank the many contributors to the survey, whose time and commitment provided the information on which this entire report is based. Unfortunately, you are too many to mention by name but we wish you to know how much your effort is appreciated and how very useful your data have been, (and may be again in the future). At English Nature Headquarters we should like to thank Dr AS Cooke for his continued support throughout the project, and Dr A Gent for his support, assistance and patience. We should also like to thank the country agency regional staff and other organisers of local surveys who coordinated and promoted the survey within their own regions. For his invaluable help with the development of the databases we thank Paul Baker of Baker Associates. At De Montfort University we are grateful to: Jenny McParland and the staff at Data Preparation Services, and placement students Andrew Alexander and Julie Johnson, for assistance with data entry; Paul Mason of the Centre for Educational Technology for the preparation of map figures for the report; and Derek Hilton-Brown for assisting in the organisation of the Herpetofauna Recorders' Meeting (HRM) and supporting the survey generally. For publicising the HRM in the society's Bulletin we should like to thank Trevor Beebee and Monica Green of the British Herpetological Society. We are especially grateful to Henry Arnold of the Biological Records Centre for his help in the initial phases of the reptile survey, and for the preparation of the species distribution maps. For useful comments on the draft text, practical assistance in producing the reports and much moral support, the authors wish to thank Clive Cummins of ITE.

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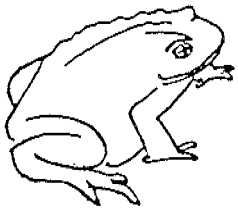
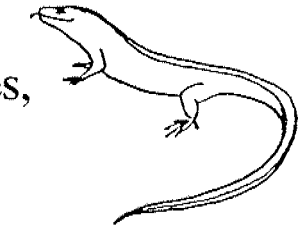
HERPETOFAUNA
RECORDERS' MEETING 1990

hosted by the NCC National Amphibian and Reptile Survey



Saturday 10th February, 1990
at
The David Attenborough Laboratories,
Leicester Polytechnic,
Scraptoft Campus



All interested and involved parties (amateur and professional biologists, industrialists and developers, local authority personnel, garden pond owners etc) are welcomed to this exchange of information and ideas on the conservation and ecology of Britain's amphibians and reptiles.

DISPLAYS : Poster, publicity and information displays are welcome - please indicate board or table space required on the registration slip.

FEE : The conference fee (which includes lunch, morning coffee and afternoon tea) is £15 per person.

Bar facilities will be open. Vegetarian lunches are available. Packed lunches may not be consumed on the premises.

LIFTS : Lifts will be available between Leicester railway and bus stations and the campus. Please indicate your travel requirements on the registration slip.

REGISTRATION SLIP

I/we wish to attend the Herpetofauna Recorders' Meeting :

NAMES : .....

ADDRESS FOR CORRESPONDENCE : .....

.....

TELEPHONE : .....

ORGANISATION : .....

I/we wish to register _____ person(s) for the meeting @ £15 per person Total Remitted : £ _____

Please provide _____ vegetarian lunches

PROGRAMME

10.00 Registration and Morning Coffee
10.30 Welcome Address : Professor Malcolm Elliott, Head of the Department of Applied Biology and Biotechnology, Leicester Polytechnic.
10.40 National Amphibian Survey Update and News of Current Research and Survey : Leicester Polytechnic Amphibian Research Group
10.55 Amphibians and Reptiles and the National Trust : Keith Alexander, National Trust
11.20 Guardians of the Water Environment : Andrew Heaton, National Rivers Authority
11.45 The Role of the British Herpetological Societry in Herpetofaunal Conservation : Brian Banks, British Herpetological Society
12.10 Legislative Aspects of Herpetofaunal Conservation in Britain : Ruth Briggs, Nature Conservancy Council
12.35 Failings of the Wildlife and Countryside Act (1981) : Trevor Beebee, University of Sussex

13.00 Lunch

14.00 Surveying for British Reptiles : Howard Inns, British Herpetological Society
14.30 Sand lizard and their Habitat in Merseyside : Arnold Cooke, Nature Conservancy Council
15.00 The Reintroduction of Sand Lizards into the New Forest : Martin Noble, Forestry Commission

15.30 Afternoon Tea

16.00 Newts in Kent : Deryk Frazer, British Herpetological Society
16.15 Report of the Surrey Amphibian Survey : Julia Wycherley, Surrey Amphibian and Reptile Group
16.40 Amphibian Conservation in the Warndon Local Plan Area, (Worcester) : Will Watson, Environmental Consultant
17.05 Evaluation of Egg Searching as a Survey Method for Great Crested Newts : Rick Parker, Greater Manchester Great Crested Newt Group
17.20 Survey Implications of Newt Ecological Niche Differentiation : Richard Griffiths, North East Surrey College of Technology
17.45 General Discussion
18.00 Departure

NATURE CONSERVANCY COUNCIL

Department of Applied Biology and Biotechnology
Leicester Polytechnic

Please fill-in where appropriate below :-

LIFTS : A lift from Leicester railway/bus station is required at _____ am (please state time of train/bus arrival)

POSTER/DISPLAY SPACE : Display space is required

I/we require _____ X _____ metres of display board and/or _____ X _____ metres of table space

Please return registration slip plus remittance to :-
Dr M Swan, HR Meeting, Department of Applied Biology and Biotechnology, Leicester Polytechnic, Scraptoft Campus, Leicester, LE7 9SU (Tel : 0533 431011 ext 328/9)
Please make cheques/postal orders payable to "Leic Poly Life Sci Env Study A/C"
Slips to be returned by 5th February, 1990