

The Society and its journal – the future

The 90th anniversary of the Fauna and Flora Preservation Society and its journal falls on 11 December 1993. While we shall be celebrating, we are also aware that the concerns that led to the founding of the Society are still with us.

The conservation movement has grown enormously in the last 90 years, gathering pace in the last decade as a wider spectrum of human society was made aware of the decline of many of the world's wild animal and plant species.

While in 1903 the Society's concern was mostly focused on game animals because overhunting was causing such massive declines, today the threats are so many and so varied that declines are occurring throughout the plant and animal kingdoms. The Society has broadened its approach to reflect this and in doing so has helped fund the conservation of many species.

As the Society's Chairman wrote in the last issue, we are planning for steady growth to become a more effective force in international conservation. Many members have written in response to the Chairman's statement and the feedback has been valuable.

The Society will not stand still and nor can its journal. For many years *Oryx*, with its blend of international news and comment and its wide range of papers, has held a unique position among conservation publications. We have always tried to ensure that *Oryx* has appeal throughout the wide range of its readers. These include Society members who obviously have a deep interest in wildlife. Some may not be directly involved in conservation in their working lives; others are in conservation-related employment. The journal is also available on subscription to institutions worldwide and to win a place on the shelves of their libraries it must have a sound scientific reputation and be of use to professional conservation scientists.

In that field *Oryx* is facing new competition. New wildlife conservation journals have appeared in recent years and no doubt others will follow. We need to hold our place on library shelves, not only to make the journal

financially viable but also to ensure that we continue to receive and are able to publish papers of excellence.

We may need to make changes, to relaunch *Oryx* in a new form to ensure that we are meeting the needs of the modern conservation scientist. We also want, of course, to provide a publication that satisfies our members.

Enclosed in this issue is a questionnaire, which we urge you to complete. We want to hear what you think, about the Society itself and about its journal. Your feedback will help us to ensure that our future work is on target and that our journal is suited to your needs. We look forward to hearing from you.

More pages and a new section for *Oryx*

From January 1993 each issue of *Oryx* will have more pages, which will help to ensure that papers are published more rapidly than is sometimes possible at present.

A new section, Short communications, is also planned for 1993. This will accommodate submissions that are worthy of publication but are not substantial enough to form full-length papers. They will be peer-reviewed in the same way as longer papers when appropriate but will also include submissions that present opinion on topical conservation issues.

Habitats Directive adopted

On 22 July 1992 the long-awaited European Community Habitats Directive was published (Council Directive 92/43 EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora). The main focus is the creation of the Natura 2000 network of special areas of conservation (incorporating Special Protection Areas already designated under the Birds Directive).

Members must submit their lists of sites by 1995, including areas to cover natural habitat types listed in Annex I and species listed in Annex II that are native to their territory. The Directive also allows the Community to designate sites that have not been proposed by a

Member State but which are considered essential for the survival of 42 priority habitat types and 184 priority species. By 1988 the complete network of Natura 2000 must be agreed and adopted by the Community.

Systematics and conservation evaluation

Coming less than a week after the Rio Summit, the 3-day conference on Systematics and Conservation Evaluation, held at the Natural History Museum, London from 17 to 19 June 1992 could scarcely have been more timely. Sponsored by the Natural History Museum, the Systematics Association and the Linnaean Society of London, the meeting brought together systematists, conservation biologists and conservation planners and practitioners to discuss a variety of topics centred on a major theme, namely how scientific information and techniques could be best put to use for the maintenance of biological diversity and, in particular, how to make decisions on which taxa and which geographical areas should be accorded priority in conservation efforts.

Much of the discussion emphasized the urgency of the task and the often inadequate data sets on which decisions would have to be based, necessitating the use of short cuts and best guesses. The increasing use of computer-based analyses and Geographic Information Systems in this field was a constant theme running through the conference. The need for improved inventory, monitoring and increasing collaboration between institutions was also underlined by many participants, as was the need for specialists to find better ways of transmitting their knowledge to decision makers.

David Bellamy opened with a graphic description of the environmental crisis facing mankind and emphasized the role of the industrialized nations in precipitating it. He exhorted scientists to cease their quiescence and move into the front line in the environmental debate, proposing a 'Linnaean Initiative' of systematists as a response to the

'Darwin Initiative' propounded by the British Prime Minister at Rio. Central to such an initiative would be the encouragement of young systematists and improvement of data-handling techniques.

Vernon Heywood outlined difficulties of defining biological diversity and stressed the importance of considering its conservation at the landscape level, while Walter Reid and Bryan Norton both discussed the cultural aspects of biological conservation and the need to define the goals of conservation. Reid argued that the concept of inherent stability in natural ecosystems no longer held currency among ecologists. It was, therefore, no longer possible to define conservation goals in terms of a given ecological end-point; instead the goals had to be defined in social terms. The major arguments for the conservation of biological diversity were the maintenance of ecosystem services and the need to retain the capacity to adapt to change in the future. Norton also stressed the notion that ecosystem health was not a scientific concept but rather one of public policy and that it was impossible to define conservation goals without regard to cultural values.

Accepting that the maintenance of biological diversity was a desired aim, the rest of the meeting concentrated on the means to achieve this. Fundamental to this was the need, emphasized by Robert May and Ebb Nielsen, for basic species inventories. Not only were many taxonomic groups woefully under-inventoried, but there was also a conspicuous lack of co-ordination of existing taxonomic information, leading to duplication of effort and inaccessibility of information. Nielsen pointed out the chronic shortage of taxonomists and that taxonomic effort was highly disproportionately distributed among taxonomic groups.

Several speakers outlined attempts made to identify areas important for biodiversity. Most dealt with biodiversity in terms of species richness and endemics. Norman Myers described the 'hot-spot analysis', which attempted to identify priority areas for conservation on a global level on the basis of plant species richness and in particular on the basis

of narrowly endemic species, that is those with a distribution of 50,000 sq km or less. On this basis he estimated that around 50,000 endemic plant species occurred in just 0.5 per cent of the world's land surface, mostly in tropical developing countries. Ghilleen Prance described similar work at a regional level in the Neotropics, pointing out that the majority of plant species there had limited distributions and could therefore be of value in identifying areas rich in endemism. Colin Bibby summarized the International Council for Bird Preservation's (ICBP) biodiversity project, which analysed the distributions of 2500 bird species with global ranges of 50,000 sq km or less and found that 25 per cent of the world's bird species were confined to 5 per cent of the land area. Bibby argued areas with high numbers of endemic birds were likely to be important for other taxa. Preliminary findings in Africa and Middle America lent some support to this.

This assumption was challenged, at least on a national scale, by John Lawton and colleagues, who analysed species distribution in the British fauna and flora, arguably the best-documented in the world. This revealed the expected north-south and east-west gradients of increasing species diversity and also 'hot spots' and 'cool spots' for particular taxa. However, hot and cool spots for different taxa were often not coincident. One reason for the discrepancy between the the two studies is likely to be the geographical scale at which the problem is examined. Nevertheless, the question of congruence between areas of high diversity for different taxa is clearly an area where further study is needed.

Turning from theoretical aspects of diversity to more practical problems, a series of papers from Australian authors examined how information could be put to practical use. Barry Richardson described Australia's Environmental Resources Information Network. Chris Margules and colleagues of CSIRO and Bob Pressey and colleagues of the New South Wales National Parks and Wildlife Service described procedures developed for designing reserve networks, on the assumption that the role of such networks was to sample bio-

diversity and help sustain it. It was important to recognize that in reality only a small proportion of a given region would be available for inclusion in a protected area network and that, in view of conflicting land-use requirements, this proportion would not necessarily include all areas identified as important. Selection procedures were, therefore, judged on their efficiency, i.e. their ability to come up with a variety of solutions to a given problem because not all solutions would be possible in practice. Pressey and his colleagues showed that for a particular study area, the area that still needed to be protected to ensure adequate conservation of biodiversity had scarcely diminished over a period of 17 years, despite the fact that the existing reserved area had increased markedly over this time. This was because sub-optimal sites had often been chosen as reserves. As more land was reserved, the likelihood of obtaining further areas was diminished through political considerations and the aim of preserving diversity became ever harder to achieve. They observed that conservationists would increasingly have to be prepared to make trade-offs, exchanging sub-optimal reserve sites for others that made a greater contribution to conserving diversity.

Anthony Rebelo reinforced this point. He analysed the distribution of flora in the Cape Floristic region, one of the richest in the world and found that an 'ideal' system, of reserves in just 52 grid squares could preserve the entire known Cape Flora. The existing reserve network was no better than a random network, but, nevertheless, preserved 80 per cent of the flora in 66 grid squares. However, to increase the network to cover the remaining 20 per cent of the flora would necessitate a further 32 grid squares, the total number of squares needed (98) being thus nearly twice the number under an ideal system. It was politically inconceivable that this increase in size in the existing protected areas network could come about.

Most of the foregoing discussions had used species as a basic unit of biological diversity, with all species regarded as essentially of equal importance. Much of the remainder of the conference was concerned with the devel-

opment of more sophisticated measures of diversity, namely taxonomic or phyletic diversity. The central question behind these analyses was: if it is only possible to preserve a subset of biodiversity, or of any particular part of it, what should be chosen to maximize taxonomic diversity?

Simon Stuart looked at the work of the IUCN Species Survival Commission and in particular the preparation of Action Plans for different taxonomic groups. He discussed problems of implementation of the Action Plans and showed how funding for projects tended to be biased towards particular groups such as primates, elephants and rhinos, and centred on sub-Saharan Africa and tropical Asia. Sy Sohmer, of US-AID, briefly outlined the major funding bodies and the budgets available for biodiversity conservation. Jeff McNeely of IUCN discussed the more intractable problems in conveying the message of the importance of biodiversity conservation to the world at large. Like David Bellamy at the start of the conference, Jeff McNeely stressed the importance of making people aware of the link between their own consumerist life-styles and the threats to biodiversity and emphasized the importance of building a constituency for promoting biodiversity conservation.

Derek Pomeroy presented a summary of the problem from a tropical perspective, reinforcing the point made by other speakers that, while most diversity was concentrated in the tropics, this was the part of the world with the greatest shortage of expertise and technology for conservation. David Fisk of the UK Department of the Environment discussed the UK Government's response to the Rio Summit, emphasizing the commitment to the Biodiversity Convention and outlining the Darwin Initiative, the mechanism by which the United Kingdom would meet its obligations under the Convention. The major points of the Darwin Initiative were: assistance in the undertaking of country biodiversity studies overseas; clarification of the goals of the research to be undertaken under the terms of the Convention; improved technical co-operation, this being the subject of a

conference to be held in September 1992 by the Department of Trade and Industry; benefit sharing between institutions and countries; and capacity building in countries overseas. The Darwin Initiative was intended to draw on existing expertise within the UK. As yet no decisions on funding levels or the allocation of funding had been reached.

David Western presented a more global view, looking at the role that science in general and systematics in particular should be playing in biodiversity conservation. He stressed that, ultimately, most conservation decisions would be made for non-biological reasons, and that most biodiversity survived at present by default and not through active decision making. He also underlined the fact that conservation of particular areas rather than species was all important and issued four challenges for the future. Firstly, how could information on different taxa be better aggregated to produce meaningful area-based information. Secondly, he considered that too much emphasis was placed on identifying global priorities for species and area conservation; these were based on the erroneous assumption that large amounts of land were still available for setting aside as protected areas. Only 3–4 per cent of the land surface of the globe was in protected areas, and this percentage was unlikely to increase significantly. Most biodiversity, therefore, existed outside protected areas and more emphasis should be placed on maintaining this. Thirdly, there was a preoccupation with data-rich areas in conservation analysis. In reality these were very few in number and much more emphasis needed to be placed on developing techniques for the assessment of data-poor areas; this would involve the training of para-taxonomists and para-ecologists. Fourth, there were still barriers to be breached between the conservation biologists of the developed countries and the people of the less developed countries who would have to bear the burden of maintaining biodiversity. He reiterated the urgency of the task faced and exhorted all conference participants to think big in their attempts to meet the challenges ahead.

Extracted from a report by Martin Jenkins.