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A View from the Long Past

Professor Anthony Bradshaw President 1991-1994

The leading article in the first Bulletin, written by Peter Edwards, then Secretary and now Professor of Botany in Zurich, was entitled 'Yet another professional institute'. I think it would have been better if it had been entitled 'Not ***another*** professional institute', because it did ask what IEEM was hoping to do.

In the period leading up to the establishment of IEEM, in the late 1980s, ecology in the UK was in a curious position. The subject was immensely strong, in both teaching and research, well supported by the British Ecological Society, the world's first ecological society. But when it came to managing our environment, we were not so good. Lots of ecological problems were appearing, needing good ecological thinking. Yet never enough ecologists seemed to be tackling them. So other people without any ecological training were appearing in all sorts of disciplines, professing to be ecologists, while the ecologists themselves had little recognition – or jobs. Anybody could set up as an ecologist.

It was a serious matter. Somehow, despite their number, ecologists seemed diffident of entering the practical world. This was perhaps understandable – they had little experience of a world that could seem daunting - and there few sources of support or encouragement. It seemed to a number of people that an ecological profession was needed, catering for the practical needs of society,.

Where could support for this come from? Many people thought it should be the British Ecological Society, but this would have been difficult without it changing its charter. The matter needed serious discussion. So a working party was set up by the British Ecological Society, the British Association of Nature Conservationists, the Royal Geographical Society, and the Institute of Biology to look at the options.

After many meetings the working party proposed that a new institute, based on ecology and environmental management, should be formed. This would have defined standards of membership, equivalent to other professions; it would encourage ecologists into a practical career; it would provide them with support and training to help them in their professional work; it would provide them with recognition in the outside world.

This found wide support. So the Institute of Ecology and Environmental Management was inaugurated by Sir William Wilkinson, formerly Chairman of the Nature Conservancy Council, on September 26th 1991, at a meeting held in the Royal Geographical Society.

From all the preparatory work, the interim Council and officers of the fledgling body were confident of the value of the new institute, to act as an advocate for applied ecology and a support for all those involved. They were also certain that the new body should set standards for the discipline that could be recognised both within and without. Several people thought that one of its major tasks would be to sell applied ecology to the many young, perhaps somewhat unworldly, ecologists whose education had so far given them little idea of it

As a result, there seemed a great deal to do. Our first concern was the degree to which we could persuade the ecologists and environmental managers already out in the real world, that they needed an institute, in particular this Institute. At that time it seemed a lot to ask them to pay £70 a year, the minimum that would be necessary, for something that hardly existed. But without this core of experienced and knowledgeable people the new Institute was unlikely to be either attractive or persuasive.

All this translated in a need to create a useful and efficient body that would, as a very practical matter, attract enough members to pay for its outgoings. The useful efficiency was achieved by finding a group of dedicated people who were prepared to become officers and Council, who would be prepared to put in more than a little amount of the their spare time, not only into managing the Institute, but also into devising the things like Codes of Practice, Newsletters, Training Manuals and meetings, that were required. They were backed up by an imaginative Executive Director and staff who made sure things really happened. In this respect we were very lucky to have Paul Goriup and the Nature Conservation Bureau to act for us, Paul having been one of the initiators of the original idea.

Of course we had to have money. We had calculated that the Institute would not be able to carry out the job we had set it, and break even, until it had a membership of 700, or perhaps 800. In truth we looked wistfully at the capital funds of the British Ecological Society, one of the Institute's backers, and wished we had 100th of them. We were therefore very grateful for its support, without which matters would have been very difficult.

However, accumulating members was a crucial task. Because the people we hoped to attract and serve were almost certainly hard-nosed, we had to show that we were going to be a body that would be valuable to them. This could only be earned by advancing on three fronts simultaneously:- firstly by showing to the outside world that applied ecology was a proper discipline demanding skill and experience, secondly by insisting that it needed to be paid for properly, thirdly by demonstrating that it had standards supported by the Institute based on a proper set of criteria for membership. This meant not only telling the outside world what they should expect, but also providing the support for members to ensure that these aims were achieved - which meant a lot of hard work.

In all this we were very grateful to our patrons, Sir William Wilkinson, Lord Cranbrook, Sir Richard Southwood, Sir Martin Holdgate, Dr Norman Moore, and later Barbara Young and Robert Swan, whose endorsement gave the young Institute validity, and encouragement.

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Editorial

A number of members were surprised - could it really be 10 years since the inaugural meeting of IEEM at the Royal Geographical Society on 26th September 1991? For many at the celebration there was genuine satisfaction that such progress had been made but perhaps tinged with the realization that if IEEM was10 years old, the founders were also 10 years older! This edition of In Practice is intended to mark the first ten years and has an article from each of the four Presidents - different in style, perspective and content and very much reflecting the diversity within the membership. This is something of a watershed for the Institute – a time to look backwards but also to look forwards. IEEM is an Institute for its members which has to reflect their needs and aspirations. There has been a very good response to the questionnaire recently sent out - about 400 returns and a preliminary report on the finding is published in this edition. The findings will give Council the opportunity to set targets that reflect more precisely the requirements of the members and to monitor how these are being met.

In the UK it does look at last as if we are seeing the end to the FMD crisis. The question of what now, has not gone away but there are signs that the issue is being addressed. The report by Lord Haskins though focussed on Cumbria, is a start. Upland agriculture is firmly linked to grazing and grazing pressure and it is a finely balanced and variable equation. Is it the intention of DEFRA to reduce the size of the UK sheep flock and in this intent has it been helped by FMD?. There are many who see this as a very desirable goal. On the other hand there are voices being raised about the loss of biodiversity following reduction of grazing pressure. Balance is the name of the game.

In my days as a student of Agricultural Botany at Bangor we were occasionally taken out to look at pasture composition in Snowdonia and to lament the relentless advance of *Nardus stricta* and *Molinia caerulea.* The then retired professor, Alun Roberts reminded us that historically, the balance had been held through grazing by welsh black cattle. In other areas such as Dartmoor the ponies are the tough grazers.

One of the features of the last few years has been the growth of farmers markets - people like the idea of local produce but the extent to which this is cosmetic in overall farming income is unclear. Landscapes and certainly some of those most loved in the UK, are to a large extent a result of historic farming practices often more extensive rather than intensive. There certainly is a place for looking hard at the traditions of a particular area and to consider whether there are some lessons to be learned.

The cry increasingly is for food grown locally and the post FMD era would do well to look again at some of the historical grazing and land management practices and see whether there is a win win strategy. Windows of opportunity usually do not stay open indefinitely and there is always the danger of the quiet drift back to the ways things were.

Jim Thompson

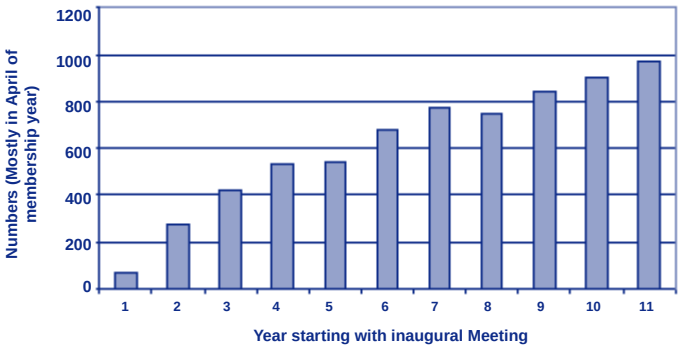
The Institute is immensely grateful to those organisations listed below who have made financial contributions or provided substantial 'help in kind' to support its activities during 2001

British Ecological Society
Browne Jacobson, Solicitors
Corporation of London
Environment Agency
Scottish Natural Heritage
Wardell Armstrong

Contact the IEEM office for details of how to get your company included in the Gold Box!

Have we succeeded? The evidence lies in the records of membership (Figure 1). To begin with the numbers crept up slowly, so that in three years we had only got as far as 400. This was not as many as we had hoped for, especially since we had calculated that there were over 1500 people who could be members, and it gave us a lot of anxieties. The trouble was that the concept of a professional ecologist was scarcely in the minds of most ecologists, and in the minds of the outside world really not at all – an ecologist was just anyone with a love of nature who would identify plants and animals for you just for the cost of their travelling expenses.

Figure 1. Growth in Membership Numbers – all categories



But attitudes were changing. The outside world was beginning to want people who not only knew their species, but also could advise on management, and restoration, who knew about both the biological and technical aspects of pollution, who were good scientists. And there were ecologists who had discovered that there were careers to be made in selling their services and being experts.

All this is now obvious, because the world has changed. The public realises now that there are serious ecological problems that need answering, and that they can only be answered by professionals with appropriate skills. Awareness of the numbers of ecological problems that need solving is far greater than it was 10-15 years ago. And an awareness that special skills are required is taken for granted.

Many factors have helped this change. The existence of the Institute contributed, and certainly drew attention to the fact there are such things as qualified professional ecologists who have a focussed ability to provide answers to specific environmental problems. At the same time there is a growing appreciation that good advice has to be paid for properly.

So it can be said that IEEM was created at the right time to take advantage of and encourage changes in thinking. That it was timely is shown by the substantial and continuous growth in its membership, at a time when there has been competition from other bodies, which have begun to take steps to welcome ecologists. There was also the serious problem of the legal action, which depleted the funds of the Institute substantially and thereby limited its activities. But all this is over and the Institute is now developing very strongly.

What can we learn from all this? It is surely that although there is an academic discipline of ecology, based around blue sky research, that attracts and satisfies many people, there is a practical discipline of ecology which aims to solve practical everyday problems by which we can achieve better standards of living and better care of the living world. For some people this seems a debased version of ecology, but for others it is very satisfying, perhaps particularly because it is of great service to others and to the world in general. As modern lifestyles increase the pressure on our environment, it becomes of seminal concern.
There was a time when most academics would have dismissed these arguments, voting as they did with their feet (or pens) for their ethereal world. This is not meant to be rude, because it is an exciting and demanding world. But the total world is different now and there are important practical problems to be solved and jobs to be done. And it is crucial that there is a supply of appropriately qualified and skilled people.

This suggests that the role of IEEM should be to respond to these demands as they arise, and be reactive rather than proactive. To be effective the Institute must indeed be reactive and respond to the demands of society and of its members as they arise. This means looking at the current problems that our members face and providing appropriate training and guidance. This has been an important feature of the Institute from the beginning, whether in the form of courses to keep hard-pressed members up-to-date in areas of ecology, or in special techniques, or guidance about more practical matters such as book-keeping and charging, which is a long way from ecology.

All that is perhaps now rather obvious. What is not perhaps quite so obvious is that if the Institute is to be effective, it has got to be prepared to look forward. This means looking at problems that may occur before they arise, and being prepared to bring them to the attention of its members and, most importantly, the public, which also means to the attention of politicians. Because of its practical bias the Institute has many good contacts with administrators and politicians, and other professions. Now that it is well established it is important that the Institute becomes a leader of thought, and is seen as such. This is happening – witness the general meetings of the Institute – but in my opinion not enough. There is a tendency for us to stick to rather traditional topics.

Many may think that I am arguing that the Institute becomes a splashy, political animal. I am not. But I am arguing that because so many members are involved in coping with practical problems, we should spend a significant part of our effort looking at problems, which may arise, and thinking how best they may be tackled. How should this be done? By writing to MPs and such like? - yes, when appropriate. But more particularly by meetings focussed on likely future problems to which people from a wide variety of relevant disciplines, including policy makers, are invited. Before IEEM was thought of, the British Ecological Society held, for instance, a forward-looking meeting jointly with the Royal Town Planning Institute, on Ecology and Planning. This introduced members of each body to the other's thinking, and the imperatives that each had to deal with. It was most interesting and productive. It was almost certainly an early step on the path towards the formation of IEEM.

There are, chasing round the world and in this country, many major problems, such as over-fishing, exploitation of land by mining, the fate of the uplands after foot and mouth disease, and many others, where there is plenty of theory, but where this has not been properly hammered out into suitable practice. Such problems require the application of sharp and realistic minds. These are always evident in IEEM meetings. By such proactivity the Institute could help its members to be at the forefront of thinking, and help the development of effective new policy. It could also help to found new contacts and friendships.

This is only one way of looking forward. Another is to look for new techniques and new approaches to existing problems. This will be explored by David Parker in one of the following articles. But, as all good scientists and managers know, the art of success is to keep thinking ahead. And success in our discipline is important for us all.

Tony Bradshaw, FRS, is Emeritus Professor at the University of Liverpool

A Personal View

Dr David Goode
President 1994-1997

When I joined the Nature Conservancy in 1967 as its sole peatlands officer, I was faced with the daunting task of assessing Britain's bogs and fens for the Nature Conservation Review. I was rarely out of Wellington boots and spent weeks at a time tramping across the Border Mires, Flow Country of Caithness and raised bogs of Cumbria, or floundering through the tussock-sedge fens of East Anglia. I fast became an expert on mire-ecology. The ability to identify Sphagnum species at a glance is still fairly entrenched though seldom put to the test in the wilds of London.

The Nature Conservation Review was the first strategic appraisal of habitats throughout the whole of the UK and led the way in developing a systematic approach to conservation evaluation. It was during this process that criteria for evaluation were first developed which have subsequently been used much more widely in the assessment of nature conservation value. These criteria have become firmly established over the years as a basis for assessing intrinsic scientific interest including SSSI's.

I have no doubt that the NCR was extremely important in providing a strategic overview of British habitats and identifying the key areas for conservation at the national level. But many of us involved in the survey and evaluation also discovered very soon that however expert the ecologist, their detailed knowledge was of little value in terms of the practicalities of nature conservation unless it could be understood and appreciated by decision makers and especially those concerned with planning. There was in the 1970's remarkably little communication between planners and ecologists and I remember very well a number of initiatives that were arranged to bring the two professions together. Alan Hickling, who had been commissioned by central Government to examine the communication gap between the two professions, referred to the gulf between them as a 'black hole'. I fear there are times when it is still the case.

I was also conscious that the selection of sites took no account of the social value of nature except in the broadest sense of what was referred to as "intrinsic appeal". Although the conservation of important sites was being defended through public inquiries it was not considered appropriate at that time to use arguments other than those based on the well-established scientific criteria. The possibility of the public having values was not countenanced.

My conviction that nature conservation could have a broader base in planning led me to move in the early 1980's to the Greater London Council as Senior Ecologist where my job was to develop an ecological dimension within strategic planning. But of course it was not just the planners that one worked with. To develop an effective programme for nature conservation in the urban environment it was necessary to forge close working links with a range of professions including architects, landscape designers, horticulturists and parks managers. They are all crucially important. Our success in developing an innovative programme depended on this interdisciplinary approach, bringing an ecological perspective to both planning and land management.

Success also depended on our innovative set of model policies for nature conservation being adopted and implemented by virtually all the London Boroughs in their Local Plans. Many of London's planning officers recognized the need to cater for nature conservation and here for the first time was a set of policies that they could use. Adoption of these policies by London's planning authorities provided a radical new framework for nature conservation which was matched by a number of landmark decisions in its favour following public inquiries.
After the Greater London Council was abolished in 1986 the London Ecology Unit was established as a London-wide body responsible for developing and implementing a strategy for nature conservation. This was achieved through a twin-track approach involving protection of habitats through planning and provision of detailed advice on habitat management, including new approaches to habitat creation and design.

From its inception the Unit was a leader in the philosophy and practice of urban nature conservation, recognizing the importance of everyday nature to town and city dwellers and seeking ways of maximizing the variety of wildlife in the capital. The Unit was particularly successful in promoting ecology in urban planning, working closely with borough planners and providing practical advice on many hundreds of planning cases.

We developed a system for dealing with the nature conservation content of strategic planning which depends on a hierarchy of sites at three levels. Those of London-wide significance are called Sites of Metropolitan Importance for Nature Conservation. They include nationally important sites such as NNRs and SSSIs together with many other high quality sites which together represent the full range of habitats in London. About 140 Metropolitan Sites have been identified, totalling 15,000 ha., which represents 9% of London's land area. Over 1,000 other sites have been identified as being important at borough or local level. These are generally smaller areas and together comprise 8% of the land area. The total number of sites identified in all three categories is 1,300 totalling 27,000 ha.

This system now provides the basis for nature conservation planning in most London boroughs and has been successfully tested at numerous public inquiries. It was endorsed in 1995 by the London Planning Advisory Committee and was recommended as the basis for nature conservation planning in the Government's Strategic Planning Guidance to London boroughs in 1996. Since then most London boroughs have used the recommendations of the LEU as the basis for the nature conservation content of their Unitary Development Plans, with the result that over 1,200 sites are now identified for protection in the statutory planning process.

Successful development of a nature conservation strategy for London was dependent on several factors. The objectives were clearly defined from the outset and the approach was closely tailored to these objectives. Comprehensive habitat survey, and evaluation, based on a defined set of criteria, provided a sound basis, which was understood and respected by planning officers. The criteria were not based solely on an assessment of intrinsic scientific interest, but included social criteria, which take account of the value of an area to local people for the enjoyment of nature.

Throughout this process there was a need to ensure effective integration with the planning process. This required considerable consultation with professional planners on the development of ecological policies and in the progressive refinement of the rationale for site protection. Success was dependent on ensuring its acceptance as a normal part of the statutory planning process. Although the system started with little statutory basis it became firmly established through its recognition in the government's strategic planning guidance.

Looking back over those years it is extraordinary how much was achieved. Compared with the position in the early 1980's when the words ecology and nature conservation did not figure at all in strategic planning in London, there has been a sea change in the attitude of London boroughs and the level of professionalism has increased enormously.

Another area of professionalism which I have tried to promote is in the field of habitat creation. The creation of naturalistic habitats is now widely

accepted as a normal part of urban nature conservation. It has emerged as a significant discipline which involves several professions, notably landscape designers, ecologists, planners and horticulturists. Within the urban context attractive new landscapes have been created, ranging from tiny wildlife gardens to extensive urban fringe forests. These new habitats support a diversity of wildlife, which might not otherwise occur in urban areas. They offer opportunities for immediate contact with nature as well as providing new educational experiences. In this way they help to reverse the current tendency for urban dwellers to become divorced from nature. They also provide some of the most exciting nature conservation projects, which can very quickly gain huge public support. The newly created Wetland Centre at Barnes in west London is a good example. Application of detailed ecological knowledge in the habitat design is exemplary, resulting in a remarkably natural feel and a high success rate in attracting wetland species. Mirroring this is a beautifully designed visitor centre of the highest quality. The Wetland Centre is one of the most exciting nature conservation projects of recent years and has already won first prize in the industry award for best new UK tourist attraction. Its popularity demonstrates that ecological design is now able to compete successfully with the world of horticulture and gardens for the public's attention.

One only has to visit a range of traditional parks and gardens to recognise that habitat creation is nothing new in the world of horticulture. Indeed, creativity is the essence of garden design. There are differences in the extent to which naturalistic principles are used, but if we take a look at a series of well-known botanic gardens it will become immediately clear that horticulturists have a great deal to offer in the design and management of new natural habitats. The fritillary meadow in the RHS garden at Wisley is an excellent example, as are the colourful herb-rich hay meadows in the Berlin Botanical Garden, or the naturalistic rockery of the botanic garden in Groningen in the Netherlands. Each of these is an excellent example of habitat creation carried out with a high degree of professionalism.

If we are to be more successful in the creation of 'popular' habitats, whether in town or countryside, a crucial requirement is to link sound ecological understanding with practical horticultural skills, in addition to those of landscape design. The skills of ecologists, landscape designers and horticulturists are now being brought together to improve current practice, but there is a clear need for more radical approaches to training in this rapidly developing field. Not only is it necessary to ensure that sound horticultural skills are available, but I suggest that horticultural training needs to include a greater understanding of ecological processes.

But this will only take us part of the way towards improved professionalism. If habitat creation is to be used to redress the loss of semi-natural habitats within the wider countryside then we will need to ensure that ecological knowledge is applied with greater rigour than hitherto. I have argued that a greater understanding of ecological approaches is required by those involved in the design of these new habitats. In particular it is important to recognise the role of habitat stress, and to utilise detailed autecological knowledge as well as information from phytosociology. The crucial role of soil fertility is now widely appreciated, but how far is the role of habitat stress used to create the necessary conditions to support a diversity of species, as for example in the creation of herb-rich hay meadows which can be extraordinarily rich in species if the right conditions are created? Since considerable knowledge now exists regarding the ecology of individual plant species can we not apply such knowledge to better effect in habitat creation?

Similarly I suggest that current knowledge of phytosociology could be used more effectively in the creation of new habitats, using natural vegetation communities as models. The National Vegetation Classification provides a well-established template for definition of semi-natural communities and it is now possible to replicate these more precisely. I am glad to see many practical applications as, for example, in new woodland planting in the National Forest where the NVC is used as a matter of course. But again it requires working alongside other professions to develop effective solutions, in this case foresters and woodland managers. The National Forest also has a policy for using local provenance in the planting of new native woodlands, and encourages natural regeneration in situations adjacent to existing ancient woodlands. Although the national Urban Forestry Unit has demonstrated the advantages of using natural regeneration as the basis for creation of new woodlands, it seems we still have a long way to go in convincing the landscape profession as a whole that this is an acceptable way forward. New woodland does not always have to be designed and planted, and natural regeneration can be substantially cheaper.

Most habitat creation does, however, involve detailed ecological design and since this is now one of the most significant areas of work for practicing ecologists I would like to see incentives to encourage high standards in both town and countryside. Some years ago I suggested that the Landscape Institute and IEEM might consider a joint award scheme for habitat creation projects. At least it would get the two Institutes talking together.

At the time that IEEM was launched in 1991 preparations were well underway for the Earth Summit in Rio. This proved to be a major milestone in developing political awareness of environmental issues and has been one of the most significant influences during the Institute's first ten years. The word biodiversity, which jarred even amongst ecologists ten years ago, now trips off politician's tongues, and climate change has become a cause celebre with the threatened collapse of the Kyoto Protocol. Local Agenda 21 and the development of Local Biodiversity Action Plans have together brought the results of Rio into the consciousness of local communities in ways which could not have been imagined when IEEM was born. The UK strategy for sustainable development is now beginning to have real influence and I believe this is an area which the Institute needs to address as a priority during its next ten years.

I say this from my perspective as Head of Environment at the new Greater London Authority where I am acutely aware of the need to develop effective strategies for London's environment which will be sustainable in the long term. The legislation establishing the new London Authority provides the basis for precisely this. It requires the Mayor to produce a series of strategies which are consistent with one another and which also contribute to sustainable development in the UK. This means that the Mayor's strategies for London's environment, including Waste, Noise, Air-quality, Energy-use and Biodiversity, must be developed as part of an integrated package which includes policies for planning, transport, economic development and even culture. The whole package must provide a framework for sustainable development. This is a daunting task which, so far as I am aware, has never been attempted by any national government or major city in recent times.

I say in recent times because there were times when it was a great deal easier to see the direct effects of one's decisions. On the wall of the council chamber in the ancient hill town of Sienna is a fresco depicting the effects of good government in town and countryside. Painted by Ambrogio Lorenzetti in 1338, it symbolises perfectly the relationship between the town and its surroundings. The values to which Sienna aspired in art and culture could not be achieved without ensuring that the hinterland of olive groves, pastures, woods and streams was in good heart. For those governing Sienna at the time it was a constant reminder of the symbiosis necessary for prosperity. As an ecologist I believe the metaphor of Sienna is just as relevant, if not more so, today with the immense pressures of urbanisation and the ramifications of a global economy. The integrated approach being developed in London provides

a framework across the full range of environmental concerns, allowing us to consider not only the detailed implications of economic and planning policies on London's environment, but also to find innovative environmental solutions which will contribute to economic prosperity.

Taking my ecological perspective a little further I see the city as an organism with tentacles reaching out far and wide. Its ecological footprint extends to virtually all parts of the globe. But looking at this organism in terms of its metabolism may help us to understand how it functions, and identify action we can take, not only to improve London's environment, but also to reduce our impact on other parts of the world. This may seem an ambitious agenda, but I have no doubt that this is what is needed if we are to have any chance of success in combating global climate change or reducing the current global impacts on biodiversity.

The GLA has joined with others to promote a detailed study of London's ecological footprint. This will identify all the components of its metabolism and for the first time we will be able to see the flows of energy and materials and the amounts that are used or wasted by our current practices. We already know as ecologists that there is a fundamental difference between urban systems and natural processes. Whilst natural ecosystems have a series of inbuilt circular processes such as nutrient or decomposer cycles, the metabolism of a modern city is almost entirely linear. This is particularly true of affluent cities in developed countries where vast quantities of material are imported daily for human use and waste products are discharged as unwanted residues. Energy is just one of the components which is fundamental to sustainability. Using figures from the London Energy Study, Herbie Girardet showed that London uses the equivalent of two supertankers of oil each week and discharges some 60 million tonnes of carbon dioxide into the atmosphere every year.

Clearly if London is to make a significant contribution to the reduction of greenhouse gas emissions it will need to take action to reduce energy use and to promote renewable forms of energy. One of Ken Livingstone's first decisions on being elected as Mayor was to agree that we produce an energy strategy even though there was no statutory requirement for this in the GLA Act. His energy strategy will have wide implications, promoting new kinds of fuel for transport and encouraging high performance buildings with significant reductions in energy use. The recent launch of a pilot scheme promoting cars using renewable sources of electricity is just one example.

David Goode demonstrates electric car

Waste is the other main area where we need to significantly improve our efficiency. It is not simply a matter of improving levels of recycling, which is how the problem is often perceived. If London is to become sustainable a more fundamental change is required which will inevitably take time. We need to develop a new culture where the components of the waste stream are automatically regarded as potential products for new industries. Glass is a good example. Instead of recycling glass simply for new bottles it is now being used as a silica-based aggregate for building materials, and can also be used most effectively to provide attractive features in interior design. A programme is already underway to develop some of these new industries under the label 'London remade' which provides the essential link between environmental improvement and economic development.

For IEEM members perhaps the most interesting aspect of this programme is the Mayor's Biodiversity Strategy. The GLA Act requires the Mayor to produce a Biodiversity Action Plan for London as one of his statutory strategies. This builds on the earlier work of the London Ecology Unit and the Mayor has already adopted the well-established procedures for identification of important sites as the basis for his strategy. The Draft Biodiversity Strategy was published for public consultation in September. The sub-title Connecting with London's Nature emphasizes the social context, since one of the main objectives of the strategy is to ensure the conservation of London's natural heritage for people to enjoy. At present London is the only part of Britain where there is a statutory requirement for a biodiversity strategy as part of regional planning. It may provide a useful model for other towns and cities.

So what are the threads that run through all of this, and why should they matter to the Institute? The first is the need for rigorous application of ecological knowledge. Whether it is in the restoration of heathlands or in the detailed analysis of city metabolism it is crucial that the Institute strives to promote the highest standards of professionalism. I consider that we should be using our ecological understanding to solve some of the more intractable problems facing us today, rather than leaving the politicians to rely on environmental pressure groups. The second point is that we cannot do this alone but must work with other professions if we are to be successful. By this I mean real multidisciplinary approaches that can identify radical solutions. I would urge the Institute to consider ways in which we can forge links with other sectors in both urban and rural contexts. Working with architects to promote biodiversity within the built environment is one example. Promoting ecological restoration within the wider countryside in conjunction with rural economists is another. My feeling is that as a profession we tend to be too narrowly focused and are in danger of missing the big picture.

A third strand is our need to build on the social aspects of nature conservation. One of the reasons why I have argued strongly for the development of Local Biodiversity Action Plans was because they provide a means of broadening the constituency through action plan partnerships. I feel that the Institute needs to promote greater debate around the social issues and give more of a lead in this field. We as practitioners would then be in a better position to ensure that wider social issues are addressed with the same level of professionalism that we bring to the scientific aspects of environmental work.

Finally there is the political context. I suggest that this is by far the most important issue that needs to be addressed by IEEM. The Institute is full of expert ecologists but how much influence do we have in the political arena? I may be mistaken but I fear that we are not very good at promoting linkages with those key sectors in decision making which could be crucial to our success. We need to raise our profile in government and with the established professions, such as architects and civil engineers, bringing our expertise into their consciousness in ways that have not been achieved hitherto. I believe this is our greatest challenge in the next ten years.

Dr David Goode is Head of Environment at the Greater London Authority and Visiting Professor at University College London

Reflections On The Last Ten Years

Dr David Parker, President 1997-2000

I have just attended the 10th Anniversary celebration of the foundation of IEEM held in London on the 26th September 2001. Meeting fellow members again, after an interval of almost a year in many cases, reminded me of what the Institute is about and why it needs to exist. My sixteen years in environmental consultancy work followed by three years in the public sector, working for the Countryside Council for Wales (CCW), has given me the experience to offer an informed view about the nature of our profession.

The importance of environmental legislation

The last ten years have confirmed my belief that it is principally legislation which has created the need for our profession. The 1990s were unprecedented in terms of new environmental legislation. Witness the EU Directives – Habitats Directive, EIA Directive, Water Framework Directive, to name just three. In Britain we had the statutory instruments bringing these Directives into UK law. Then there was the Environmental Protection Act, numerous changes to town and country planning legislation and last, but by no means least, the Countryside and Rights of Way Act in 2000.

All this legislation needs professional ecologists and environmental managers, using sound science, to drive implementation forward and guide Government and allied professions alike. I have been pleased to see ecologists increasingly accepted as respected professionals and advising Government, lawyers and development clients at the highest level.

Yet there are still some anomalies. Why is it, for example, that an engineer's, a planner's or a chartered surveyor's views on ecological or wildlife matters are usually treated as perfectly valid, yet the ecologist's opinion on say, road design, project economics or agricultural management, is not? Both sets of views are subjective but it appears that one set of subjective ideas carry more weight than the other. I remember being particularly struck by this fact when I was involved with the planning of the Cardiff Bay Barrage development during the late 1980's. Occasionally there would be lightweight comments made, sometimes in the form of a joke, about the impact of the proposed development on important redshank and dunlin populations in the Bay. In sharp contrast to this, whenever economic or design matters were discussed the tone became hushed, respectful, and the reasoning behind the argument never seriously questioned. We had to fight to be heard during this time and to present our arguments in a thorough and well reasoned way. Fortunately, the introduction of new EIA legislation played a major part in helping to raise the profile of our profession at this time.

During the same period when I was working abroad and usually in developing countries, I usually met with a certain scepticism, particularly from hardened mining engineers and managers who were used to their own particular way of doing things. Interestingly, the governments of these countries often asked us to help them develop their environmental legislation at the same time as we were carrying out EIAs for the mining companies. The EIAs that we produced (on mining developments in our case) provided a template for these governments on how future large scale projects were to be conducted. Our credibility with the mining clients immediately soared! In addition, the allocation of funding for a project became increasingly dependent on the achievement of high environmental standards and there was, therefore, a powerful incentive on the part of our clients to ensure that we were able to carry out our work to a high standard. Money, or rather the threat of its withdrawal, is a powerful tool in achieving environmental gain.

The need to increase professionalism

It has always concerned me that non-ecologists, working in both the private and public sector, and advising on ecological or pollution matters can create problems for their clients through the provision of poor quality information. I have come across too many examples of new industrial plants sited in nature reserves, housing estates in floodplains and proposed developments on Natura 2000 sites. IEEM has played an important part in addressing this situation, though there is still much work to be done. In recent years I have been disappointed to discover outmoded methods in road construction design still exist in the UK with ecological mitigation still afforded a low priority. In these cases rigorous ecological method simply isn't seen as equal to either landscape design or to the requirements of carriageway construction.

The international implications of the Habitats Directive are another example of where sound ecological advice is needed. Even Government has shown that it doesn't fully understand the impact of this particular piece of primary legislation. There is a worry about cost and the inherent conflict with existing policies, such as the Common Agricultural Policy where the conservation and effective management of Natura 2000 sites is often in conflict with the agricultural subsidy regime that is in place. A good example of this is the overstocking of many upland SACs at a level which is encouraged by the present headage payment subsidy. A clear case for the "joined up thinking" which Government espouses and in which IEEM and its members could and should be actively engaged.

Sustainable development

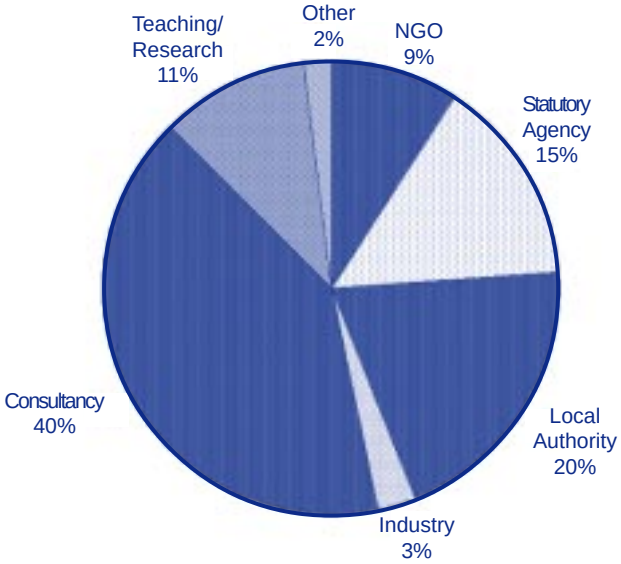
Despite the legislative and financial support which is available to us, it is only by earning professional respect that our profession will make further progress. This is no different to most other aspects of professional and personal life and IEEM members will earn this by the quality of their advice which must always be based on sound science. Politicians are increasingly asking for this help as they realise that things must change to accommodate the need for more environmental protection in line with the demands of sustainable development and LA21 in the planning process.

As a nation we are only now beginning to grasp just what sustainable development means in practice. I believe that ecologists have an advantage here as they invariably have a better idea about this than most. There will be an important role for IEEM members here to provide the advice that is needed. The National Assembly for Wales is the first government in the world to have a statutory responsibility to produce a scheme for sustainable development. Ecologists and environmental managers from CCW and other organisations, including IEEM members, are playing a major part in the development of this scheme. It has always seemed to me that the aim should be to make all development sustainable and that, eventually, the word "sustainable" will become redundant.

Providing support for IEEM members.

IEEM is helping members gain professional respect by various means; by its code of professional conduct in its training programmes right through to the networking opportunities presented by IEEM conferences and meetings. I have been touched by the stories of a number of our members who feel professionally isolated whether as practitioners in a one person consultancy or working within large organisations. IEEM helps to bring these members together, offering a support structure where they can exchange ideas and form contacts to enable them to carry out their job more effectively and, in the process, further their professional careers.

I have always been concerned about those IEEM members who we rarely see at meetings and conferences yet who remain loyal to the Institute. Are we doing enough for them? It may be that we are, but as an Institute we have no evidence either way and this is another area that perhaps we should examine in the future. There is also a perception that IEEM is dominated by ecologists in private consultancy. As the accompanying chart indicates, this is not the case. It is necessary for IEEM to work hard to provide the Institute that all members want.



Membership Distribution in various employment sectors

In looking through the latest members directory, it is striking how our members are widely spread throughout the business sector and the public service. Providing support through IEEM to such a diverse membership will be a major challenge for the Institute in the years to come. I welcome this diversity of employment and I can see that there is a unifying theme of commitment by all our members. This is to deliver impartial ecological and environmental management advice, whether that advice is to a client in the public or in the private sector. I look forward with confidence to IEEM continuing to play a key role in the development and recognition of our profession.

Dr David Parker is the Director Conservation, Countryside Council for Wales

Presidential Reflections

Dr David Hill

Current President, IEEM

Back in 1976 I well remember trying to get as much information as I could, and from any source, which would help me decide on which university course I should go for. Trying to make the link between what I was interested in as a hobby and what would eventually turn into a rewarding career, was an impossibility. No one seemed to know anything about the environment nor how to make a career in it. When I told my parents that I was to undertake a three year degree in ecology, they replied 'that's marvellous David - what is it?'

I wish I had had the benefit of the number and range of people to talk to who have 'been there, done that' and who are available to current course-seekers or graduates. It is hard to believe that the subject of ecology had only really emerged as a discipline let alone developed into a profession. I hope that this small group of articles should be especially useful to those members who are just starting to plan their careers.

I developed an interest in ecology, unknowingly, at the age of five. Following my father on birding and fishing trips I quickly became hooked (forgive the pun) and lived and breathed birds especially from then on. Drawing them, catching them and even breeding them in captivity. In the 1960's there were perhaps only two types of binoculars to chose from and I certainly didn't know what a tripod was! Now, the birding fraternity supports a major industry.

During my degree I had a life-changing experience. I met a researcher from the famous Edward Grey Institute at the University of Oxford. This was (and still is) known to be the place to study birds. He introduced me to members of the EGI and I gave what I thought was a brilliant talk at their winter conference. Of course, in reality it was terrible. Nonetheless, with the type of defiance one has at that age and a good measure of luck, I managed to secure a place there to do my doctorate, thanks to the Game Conservancy. Oxford and the Game Conservancy seemed to produce a series of life changing or at least exciting experiences. I remember being in the Elton library at Oxford one morning when a very elderly gentleman entered and sat down opposite me, and proceeded to read a paper from the Journal of Animal Ecology. I later asked the librarian who he was and was told it was Charles Elton himself! For me this was the equivalent of a football enthusiast having a Saturday morning knock-about in the back garden with David Beckham! The Bureau of Animal Populations and the pioneering work undertaken by Elton (remember Eltonian cycles) was legendary.

I have to say the Game Conservancy holds special memories for me. Where else could a young post graduate be exposed to the quirks of the British aristocracy so face to face. I remember being accidentally shot at by Count somebody or other on one of the largest estates in Norfolk, and being driven around superb countryside with the authority to give the land owner and his agent our latest knowledge on game bird biology and habitat management for them. We had the opportunity to make big changes to the layout of their land holdings and it gave me great confidence in my dealings with people. I think that unknowingly, the development of this confidence, which I had gained at the Game Conservancy, has been one of the most important aspects of my later career in consultancy. Many of us need to work hard at communication. Whether we like it or not, the fact is that the guy who operates and manages a mineral workings speaks a different language to the London barrister who speaks a different language to the Norfolk aristocrat and the Professor of Chemistry at somewhere university. If you can overcome these differences and build a rapport with all of them, your chances of success in consultancy at least, will be far greater.

After a really enjoyable time with the Game Conservancy (where I met my wife to be, Kathleen) I joined the RSPB at Sandy and after that the BTO. These organisations were and still are at the forefront of land management for nature conservation and monitoring respectively, and their research work was especially important in setting the policies of the 1990's and beyond. The RSPB is massively influential and the greater emphasis now placed on targeted research to answer specific policy objectives, notably its recent work on farmland birds, is yielding important results for the agricultural policy changes which must surely take place over the next 3 years. I remember in the late 1980's and early 90's that the emphasis in ecological research began to change significantly. In my experience, the auteological studies which continued over relatively long time periods and intensive detailed research, was being replaced by a more cost-conscious, accounting mentality, the bottom line being the 'delivery' of targets. I hate the words delivery and deliverables. These emerged in the late 80's as a product of the Thatcherite thrusting culture and were increasingly used by a set of senior ecologists in government and elsewhere, desperate to be part of this new regime. What resulted, in my view, was a degradation of quality research at the expense of a more inventory-minded ecology. In some ways this has not been all bad - we have classified more SSSIs and Sites of European Importance (SACs, SPAs), which has had a dramatic effect on improving the importance of ecology in, for example, the planning and development control 'industry'. Still, today the ecological questions are what are they and how many of them do we have, rather than what do they do, what are their interactions with their habitat and each other and what are their population processes. For the planning of effective conservation and, for example, mitigation of impacts, I think we need answers to all of these questions. We also desperately need more specialists.

With hindsight I realise that my concentration on a specialism (ie. ornithology) within the broader discipline of ecology, has been a great asset. The upside of specialising is that you can corner a market, particularly if you tag on and develop the subject by incorporating other areas such as impact assessment, evaluation methods, disturbance effects, etc. ie. the very areas demanded by the consultancy profession. The downside is that a large multidisciplinary company is very unlikely to carry a post in such a specialist field. The specialists therefore often work alone. These large companies employ you as a generalist, but when it comes, for example, to a public inquiry or negotiating and discussing detail with the statutory agencies, one always needs a specialist. One piece of advice I would always give would be to develop a specialism and publish as extensively as possible on it.

During my period with the EGI I started to develop expertise in population modelling, principally to enable model predictions of populations of wildfowl under different harvesting regimes. To a large extent, whilst I believed that I was modelling for applied management reasons, the exercise was largely academic. The models at least taught me three things. First, our lack of knowledge of a species' biology meant that many of the values for model parameters have wide confidence limits, such that model predictions also have wide confidence limits. Second, the role of density dependence is crucially important to the dynamics of the model and hence its predictions. This is even more important for huntable populations which can compensate, to some extent determined by the strengths of the density dependence and the stage in the life cycle

where it operates, for increasing levels of hunting. Third, natural populations living in the wild are subject to stochastic events, notably weather. This stochasticity can manifestly alter the dynamics of models. So, by and large, population models have had less of a role to play in species management, than I thought they would have done 15 years ago. This in large part is due to our lack of biological understanding, especially in terms of a species' resource use, habitat range, survival rates and their variability, and strengths and location of density dependence within the population. Perhaps this has been a casualty of our more recent inventory mentality with respect to ecology.

Ten or 15 years ago population models were often written in a form of basic. Now, sophisticated modelling packages are available, though for the sorts of modelling that the single-species researcher is concerned with, the spreadsheet method offers an instantaneous solution, and most large models can be accommodated using this tool. Although the population model is rarely used in consultancy, a firm understanding of population ecology is, in my view, essential for the consultant. Population ecology is at the heart of, for example, being able to predict impacts, changes in density, and the design of mitigation methods, particularly where new habitat creation is involved. Yet the ecological assessment rarely goes beyond determining numbers on a site and saying how many might be lost and how many might be displaced or accommodated through mitigation or provision of compensatory habitat. In my experience the subject of ecology in impact assessment has moved on in leaps and bounds in the last 10 years, during the period of existence of the Institute. In part, the Institute has been responsible for this, but the subject has also been driving itself, which has almost certainly had a positive feedback to the Institute.

During my stays at the RSPB and BTO, I became very interested in the analysis of large data sets, either involving long-term bird data or extensive spatially referenced data, collected in association with habitat features. I developed some expertise in the multivariate analysis of bird counts collected in woodland in association with data on horizontal and vertical structure of the woodland. I was able to analyse such data for the fabulous Caledonian pine forests at Abernethy (we acquired the reserve during my term with the RSPB), the grazed woods in the Forest of Dean, and large tracts of ancient broadleaved woodland in Kent. The data from these studies were analysed by various multivariate methods, including DECORANA, which had only recently been developed. Some interesting results and habitat predictors came to light. Some were useful to the planning of future management, though with such methods often more questions were posed than answers. Further studies included analysis of the long-running BTO data on waterway birds which was particularly relevant to the emerging methods of river corridor survey being developed by the then National Rivers Authority. Perhaps one of my most interesting studies was the analysis of RSPBs data on Avocet populations at Minsmere and Havergate Island. The species recolonised the latter in 1947 following an absence of nearly a hundred years. Minsmere was colonised 15 years later in 1963. The Avocet story is one of unrivalled success on the part of the RSPB. It is useful having as your logo a species which has been brought back from national extinction largely as a result of direct and measurable action - the buying and management of coastal reserves. I undertook a key-factor analysis of population data including number of pairs, eggs laid, number of eggs hatched and number of chicks fledged. The incredible enthusiasm and dedication of the RSPB wardens at these sites made possible this analysis. The key-factor analysis enabled a detailed model to be produced based on 40 years data for Havergate and about 30 years for Minsmere - quite an achievement. This was 15 years ago, so the scope to expand the study is immense, given of course, the time, at the moment my most precious commodity!

From working within the RSPB's reserves division I was asked to develop site-specific monitoring programmes and to assess the wealth of existing data across the reserves in order to identify projects relating to the evaluation of management actions. Following on from this we set in motion the production of management plans according to a standard format. In time, all reserves had their first management plan, each specifying particular management research projects which would, in future years, provide unrivalled expertise and knowledge. In recent years this process has been expanded and computerised, such that much of RSPBs data from reserves are centrally accessible, which makes the setting of targets and the auditing of reserve resources, more dynamic.

Perhaps at this point in my career my interests took two directions. First, my experiences of data relating bird numbers to habitat caused me to take a closer look at the habitat and its management. I was most interested in assimilating case studies of management where successes and failures could be documented. Second, it became clear to me that there was a real need for standardised methodologies within our profession. In a way the two directions were linked. How do we manage habitats effectively and how do we count things effectively? I joined forces with Colin Bibby and Neil Burgess in respect of counting methodology and we wrote Bird Census Techniques published by Academic Press. This was borne out of frustration on our part for a set of standard methods for censusing birds, so as to improve the quality and compatibiity of data. The book has become a standard reference text, proving more successful than we could possibly have imagined, being used by academics, students and consultants. It has certainly been helpful to me during my consultancy career. A vastly improved second edition came out in 2000.

I also teamed up with Bill Sutherland of the University of East Anglia, a friend from Oxford days, and we edited Managing Habitats for Conservation published by Cambridge University Press. Many people thought that we wouldn't be able to condense material on habitat management into one book. However, we felt that better to make a start, a foundation on which others can build, than be defeated by the scale of the project. I think this has been a major strand running through my life to date. As a result Managing Habitats for Conservation has sold rather well and is really in need of an update, if only we could find the time!

By the time I decided to set up my own company I guess that I had developed a pretty impressive network of contacts and experience. I had no business training but felt that as long as I stuck to what I knew about and controlled costs (which meant definitely not taking out a bank loan!) I would at least survive. I am not sure what I did in 1992 would be possible today. My links with Oxford, the Game Conservancy days, the RSPB and BTO, have been immeasurably important to me.

Just as I set up Ecoscope Applied Ecologists, the Institute was gaining momentum and I didn't actually join until a few years later. But once I had joined and attended my first annual meetings, I thought how dynamic and exciting it was. So many people embarking on the formal professionalisation of their subject, an emerging subject at that. I still feel that our meetings are exciting, dynamic and relevant to continued professionalism, and long may that continue!

I find it is difficult to analyse trends and predict the future of our discipline but nonetheless, it is important to tune our experiences towards enabling us to take advantage of 'market forces'. Attempting to respond to trends has been important to me and to the development of our company. If we look at the recent past, on the one hand the consultancy market is, I feel, more competitive today than it was ten years ago. On the other, there are more opportunities ; government prefers to out-source work through the competitive tendering process. This has been helpful to our profession in

one respect and has hopefully proved cost-effective. But a lot of knowledge was lost from, for example, the government's nature conservation adviser when a number of senior staff retired early some years ago. Hopefully, many remained in the profession by undertaking consultancy. At the same time the past five years has seen the development industry prosper as a result of low interest rates, greater inward investment and grant availability for the regeneration of brownfield sites. As long as interest rates remain on the low side and consumer spending continues without being excessive, the outlook remains positive for the consultancy profession and of course all those involved in the planning and development control industry. In addition, the massive and exponential increase in environmental legislation has been, and looks set to continue to be, fuel to the fire of our profession. Not only is this a good thing for our own business development, but it is vital in terms of providing successful biodiversity conservation, clean technologies and clean environments.

Life post-Rio has seen the all important development of sustainability initiatives, local Agenda 21, local and national biodiversity action plans, the prioritization of effort and resources, and the setting and monitoring of targets. We know far more today about the amount of the resources we have which we have evaluated as being of conservation importance. But, I come back to the point I made earlier about the apparent sacrifice of long-term autecological research studies at the expense of a simpler inventory ecology. In my experience, an expert is not borne out of the latter. It takes an important amount of time to develop a reputation in the scientific arena, and I feel we need more young research scientists to promote the science of ecology and ensure it builds on its contribution to the current trends in ecology and environmental management. In terms of my own experience, I firmly believe that my research training and peer pressure to publish, has disciplined my thinking and enabled me to concentrate on one or two subjects whilst at the same time building a business.

I continue to be especially interested in bird population ecology, the ecology of habitat management and the developing methodology of impact assessment. My only frustration is that running a company soaks up a not inconsiderable amount of time which prevents me from doing much detailed research myself. However, I have decided that Ecoscope could play a greater role in training graduates and perhaps managing research studies through which such work could emerge. This is one of the tasks I have set myself for the future.

For me ecology and wildlife conservation is one of the most fundamentally important subjects, critical to man the species. From a very early age it has given me great pleasure and, taking away the boring red-tape and the necessary administrative duties I have to perform today, it remains an increasingly challenging and rewarding profession. And a profession it is. I am sure, with the help and encouragement of IEEM, many future ecologists will improve on its standing as a profession and will feel as honoured as do I, of being a member.

Dr David Hill is Managing Director, Ecoscope Applied Ecologists.

The IEEM 10th Anniversary Survey – Preliminary Results

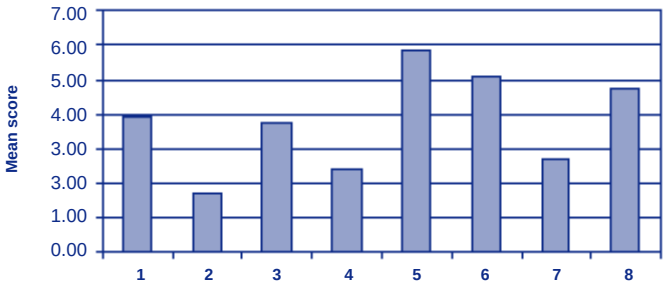
Jim Thompson and Chris Bond

The IEEM survey was prepared in response to discussions in Council and some of the Committees that the Institute should be more pro-active in its marketing. It was felt that a useful way to start was to assess the views of the membership towards the services currently being provided and through this to identify the areas where its resources might be directed in the future. A few questionnaires are still being returned and these will be analysed with the final results but these are unlikely to make much difference to the overall picture which is described below. But we have to draw a line somewhere and no further survey returns will be considered after 1st November.

There were 31 questions and many had more than one slot to complete. The detailed analysis is therefore likely to be lengthy but the purpose of this paper is to highlight some of the responses which have already emerged with particular clarity. A number of questions probably required members to compare one Institute against another. Although it is well known that a number of members are also members of other Institutions these aspects would have been difficult for members with experience of only one Institute.

In the first question the purpose was to find out the ranking in importance of the main functions of the Institute in the following: 1 – In Practice newsletter, 2 - Annual Conference, 3- Training Courses/workshops, 4- Membership Directory, 5- Professional Credibility, 6- Raising Professional Standards, 7- Lobby to government on environment, 8-Raising the profile of the profession. The clear leaders were 5,6&8.

Importance of IEEM services



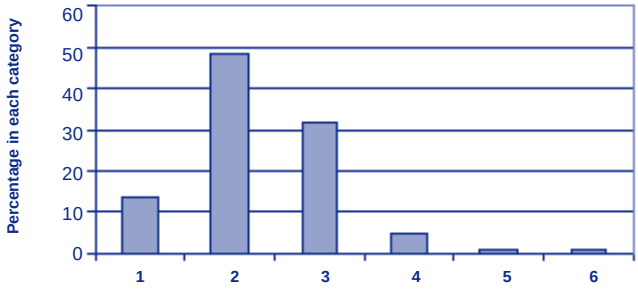
1. In Practice; 2. Annual Conference; 3. Training Workshops; 4. Membership Directory; 5. Professional Credibility; 6. Raising professional standards; 7. Lobby to Government on the Environment; 8. Raising the profile of the profession.

In the second question members were asked whether they were satisfied with the level of service and professional representation that IEEM currently provides. 63% said yes, 16%, no and 21% did not know.

From the questions on the membership Directory, 64% made significant, regular or irregular use of it and 36% made insignificant use, no use or did not know. There has been a significant move towards putting the Directory on line. At the Margate Conference in 1996 an informal poll was taken and about 50% were in favour – the figure is now 85%. Members were also asked to respond to a number of detailed points about the Directory and these will be considered in due course.

Turning to ***In Practice*** - 14% made significant use of it, 48% regular use and 32% irregular use so this is clearly something which most members appreciate. Ranking the regular features in ***In Practice***, the clear leader was the technical papers followed some distance behind by News in Brief, Reviews of recent publications, Institute News, In the Journals and the events Diary in that order. Other sections were ranked much lower. So the message to the contributors to the various article seems to be that your efforts are appreciated.

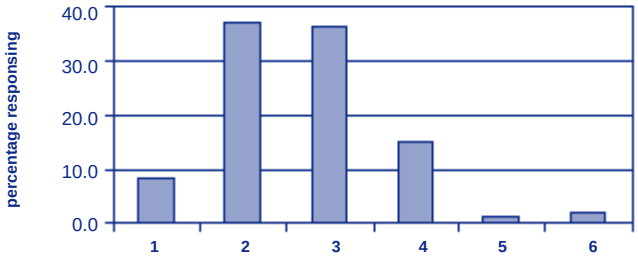
Use made of In Practice



1. Significant Use; 2. Regular Use; 3. Irregular Use; 4. Insignificant Use; 5. No Use; 6. Don't know.

Value for money is obviously a key point and 45% agreed or agreed strongly that IEEM did represent good value for money compared to 16% who disagreed or disagreed strongly.

Views on whether the Institute represents good value for money.



1. agree strongly; 2. agree; 2. neither agree nor disagree; 4. disagree; 5. disagree strongly; 6. don't know

Members were asked whether the Institute upheld the standards of the profession effectively? -45% agreed or agreed strongly and 11% disagreed or disagreed strongly.

No doubt to the relief of the Professional Affairs Committee it appears that 85% of members were aware of and used the Code of Professional Conduct.

There is often discussion about whether the standards for entry for the accredited grades of membership are appropriate. 88% thought they were about right, 11% that they were too low and 1% that they were too high so Council Members and the Membership Admissions Committee will take some comfort from this in the light of some recent discussions and amendments to the regulations.

IEEM is sometimes perceived as a consultants club and so the question which asked whether IEEM reflects all sectors of the industry was interesting. 3.4% agreed strongly, 44.8% agreed
16.2% neither agreed or disagreed and 2.1% disagreed strongly.

On addressing the issue of the external representation of IEEM, 11.17% thought that IEEM effectively represented the viewpoint of the profession in political circles, 21.04% thought it did not and 67.79% did not know. This is a very large proportion of don't knows and suggests that even if the Institute were doing a good job in relation to the question, the membership have certainly not been made aware of it.

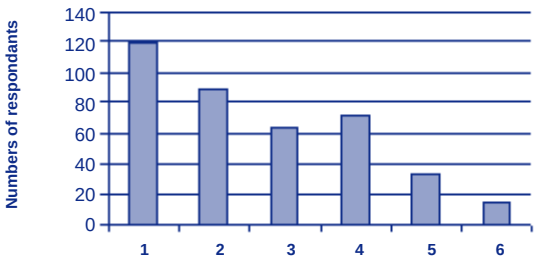
Interestingly in response to the question on employment, 21.5% said that membership of IEEM had been of help in finding a job.

The related question of whether members were aware of job adverts asking for IEEM membership produced a level of 41% aware.

There was a very mixed response to the Question which asked whether IEEM membership had helped in the tender or contract award process – i.e. seen from both sides – 27 % responded positively with 40% who did not know.

The effect of Foot and Mouth Disease has clearly been significant and the results are shown below. About 25% thought they could quantify the impact financially but the majority of respondents appeared to have been only slightly affected by Foot & Mouth Disease and few could actually quantify the effects.

Effects of Foot & Mouth Disease

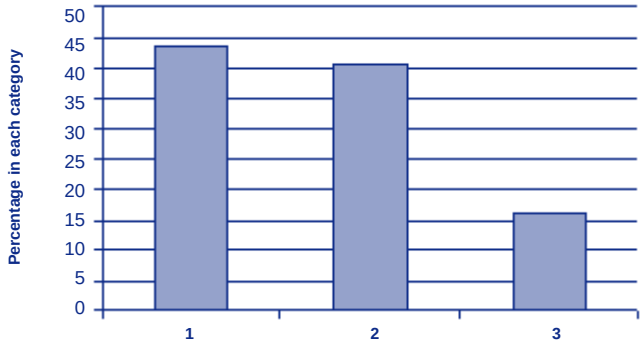


Degree affected 1. Significantly;
2. Moderately; 3. Partially; 4. Slightly;
5. Not affected; 6. Can't judge.

The who pays for the IEEM subscription was interesting with 169 paying personally, 158 being paid by the employer and 62 as a self employed person. The proportion of subscriptions being paid by the employer has risen recently and this is to be welcomed

Various IEEM publications have published a pie diagram showing the proportion of members in various employment sectors and consultancy has usually been about 40%. Members were asked to state their employment sector to see how the proportion of those returning questionnaires compared with this figure. The proportion of consultants returning the survey was actually 41.8% so it looks as thought the survey will have reflected the proportion of the membership in the various sectors reasonably well.

Who pays subscriptions?



1. Members personally; 2. Employer;
3. Member (self emloyed).

The strongest positive response (77. 95%) was in favour of geographic sections and many(58.46%) said they would be prepared to participate.

A significant number 95 individuals said that they would like to help with the affairs of the Institute. This undoubtedly included a number of people who are already involved but was none the less very encouraging and it is the intention to follow up these offers in the coming months.

All in all it seems to have been a useful exercise and the response by the members was very positive. This is really useful from the viewpoint of identifying the response of members to the services provided. The value of the survey might perhaps have been increased if members had been prompted to respond more about aspects where the Institute is not as active as it might be.

For the purpose of this exercise, the figures presented are averaged but in a number of cases the questions provoked quite strongly held minority views, sometimes with comments. These will need to be examined in more detail. The final results will be evaluated in due course and may appear again in In Practice or on the website. Also there were a number of returns with comments attached to particular questions and these will also be taken into account.

Thanks go to the members of the Membership Admissions Committee and particularly Richard Graves who devised this questionnaire and to Chris Bond, student at New College, Oxford who undertook the vital task of entering all the data.

Rarity on the Roof? Finding Partial Solutions to Challenges of Brownfield Site Redevelopment

Mike Wells MIEEM

The issue of housing provision in the UK is a matter of hot debate and great environmental concern. We are living more solitary lives at all ages. Progressively more of us live outside of the classical family unit. These are the main reasons, we are told, that we need millions more dwellings, many of them in the south of England (English Nature 1999).

The Urban White Paper calls for redevelopment of brownfield sites, largely for housing as a major national priority (DETR 2000). To re-use previously developed land for new housing before we turn to greenfield sites would, on face value, seem the most sustainable solution in terms of resource preservation, and meeting the ecological ideal of compact city living (Rogers 1999). Many people object to the calls for every parcel of precious suburban open space in many counties being earmarked for housing.

But things are rarely that simple, and this debate is not either. Over the past few years, ecologists and landscape architects in the UK have become increasingly convinced of the need to protect the wildlife resources of urban brownfield sites. Such sites have been shown to be important both for people and in supporting the national populations of many species (e.g. London Ecology Unit (Various), Gilbert 1992, Kendle and Forbes 1997, Harrison et al. 1995, Barker 1997).

More recently, it has been highlighted that brownfield sites in our cities can be home to nationally scarce and rare invertebrates (Gibson 1998) as well as birds 'rarer in the UK than the Golden Eagle' (Black Redstarts; see e.g. London Wildlife Trust 1999). As regards invertebrates, what is known about patterns of occurrence of some groups on brownfield sites is consistent with the theory that many species found there may be relic populations. These populations are considered to have adapted over time to new habitats as towns and cities have grown, whilst the rural components of the original overall populations have been decimated by modern agricultural practices. In other words, the rare invertebrates in our urban wastelands may not merely be populations of secondary importance recently derived by dispersal from 'strongholds' in the countryside, but may be key refuges for such species.

With Rio and the advent of Biodiversity Action Planning, the whole issue of brownfield biodiversity has been thrown into stronger relief. Little 'packets of uncommon genetics' that we should try to preserve, are flying, crawling and breeding on our brownfield sites. Whilst these habitats on artificial substrates are not readily evaluated using traditional nature conservation evaluation criteria that are employed for selection of biological Sites of Special Scientific Interest (e.g. Ratcliffe 1977) they do have great rarity value in terms of genetic resource conservation.

How then do we 'square the circle' as regards the Urban White Paper's call for brownfield redevelopment to go full steam ahead? Protection of the brownfield /'wasteland' resource at ground level in part of a site that is proposed for redevelopment can cause problems. To most developers, wasteland is just that. It lowers land and property values and attracts vandalism and undesirable social elements. Why, they ask, should they invest millions decontaminating and developing a brownfield site for mixed use on the 'Rogers' model, and still leave wasteland areas within it at the end?

In northern mainland Europe examples exist where brownfield sites have been modified and to an extent stylised with pathways, sculptures, water features and facilities to make unconventional urban parks (see e.g. Holden 1996). By and large, in the UK, we remain rather more traditional and limited in our view of what an urban park should be and provide.

But as a parallel or alternative strategy, given that the brownfield biodiversity resource exists on completely artificial substrates, could we not reasonably attempt to provide appropriate or replacement habitats within redevelopment schemes? English Nature has recently let a contract to investigate the current extent of biodiversity-led urban design and research in the UK, especially in terms of green roofs. The findings, due to be published next spring, are likely to show that little 'proper' research has been done in the UK.

Some research has been done in northern Europe. Findings from research in Germany are beginning to show the value of what are known as 'extensive green roofs' for invertebrates, such as butterflies, and several bird species. As ever, research in the United States of America is even more advanced, and relationships between roof heights and use by different invertebrates species are being investigated.

In reality, however, we are only scratching the surface. The whole concept of basing green roof design on the very specific ecological requirements of particular species, especially the rarer invertebrates that occur on many brownfield sites, has great potential for new scientific and documented studies.

The creation of habitat for such species will require careful consideration of factors such as:

- the balance between habitat creation using active interventions such as seeding and planting and the provision for natural colonisation;
- the need to achieve an acceptable 'aesthetic' where roof spaces are overlooked;
- shelter from the wind and microclimate generally;
- substrate chemistry;
- the provision of bare substrates;
- the supply of appropriate nectar sources at the required times of year;
- the provision of food plants of different types to meet year-round needs of target species;
- the provision and maintenance of vegetation structure used by invertebrates;
- methods of facilitating colonisation such as terraces, ramps, wind traps; and
- the water supply (including considerations of rain storage).

Such considerations need not result in greatly increased costs in implementation. As with any flat roof, there is need for care to ensure that the basic roof structure does not leak. Proprietary green roof systems can cost over £100 per square metre beyond this basic requirement, but a basic extensive stonecrop sward can cost as little as £20 per square metre. Maintenance is required, but might only amount to one or two visits by maintenance staff each year. We need to convince more developers to consider these costs as offset against other savings, and if possible take a life-cycle view of the value of green roofs in terms of savings to final user, which can be part of the marketing of the buildings.

These benefits include (see e.g. Johnston and Newton 1993, ZinCo International 1998, Erisco Bauder 2000):

- notable savings in terms of heating and cooling of buildings;
- protection of roofing materials from frosts and sun damage;
- noise insulation;
- attenuation of storm water runoff;
- cooling of near-building environments;
- dust filtering;
- increased amenity space;
- improved urban environment and hence indirect benefits for human physical and psychological health and well-being. (see. e.g. Urlich et al. 1991, Rhode and Kendle 1994, Parsons et al. 1998); and
- appropriate biodiversity.

Another driver for developers is the growing difficulty in obtaining planning permission on brownfield sites without reliable mitigation for brownfield plants, invertebrates and birds.

I am currently working on several development schemes involving designs for roof space with all of these advantages in mind, but with the main aim of providing habitat for local, uncommon or declining plants, invertebrates and birds in the long-term. It is still early days, but the there is every reason to anticipate success if careful science can be combined with local knowledge.

Shrub roof – courtesy ZinCo

It should be emphasised that ecologically designed green roofs cannot yet be claimed as the panacea to brownfield development concerns. Even if great success in attracting target species is achieved and documented, there is a need to consider also the wider environment, connections between sites and the development pressures on other valuable sites. Ultimately, green roofs will only really provide large scale sustainable solutions to the preservation of uncommon urban flora and fauna if they become widely required as part of planning policy, as is now the case in several parts of Germany.

I would be very interested in hearing from anyone engaged in similar work. I am starting to develop a database of autecological and case study data to assist in the future development of successful design solutions.

We need to start to amass data and case studies on design of green roofs (and other vegetation areas on built form) in relation to the use by particular species. We need to focus on the species of great conservation concern on many brownfield sites.

Roof Garden - Park Avenue, New York

References:

Barker, G. 1997. **A Framework for the Future: Green Networks with Multiple Uses in and Around Towns and Cities.** English Nature Research Reports. No. 256. English Nature, Peterborough.

DETR 2000. **Our Towns and Cities: The Future - Delivering an Urban Renaissance- The Urban White Paper.** HMSO.

English Nature. 1999. **Towards an Urban Renaissance. Proceedings of a Conference held in Southwark, November 1999.** English Nature, London.

Erisco Bauder 2000. **Roof Top Landscaping.** Erisco Bauder, Ipswich.

Gibson, C.W.D. 1988. **Brownfield: Red Data. The Values Artificial Sites Have for Uncommon Invertebrates**. English Nature, Research Report No. 273. English Nature, Peterborough.

Gilbert, O. 1992. **The Flowering of the Cities. The Natural Flora of Urban Commons.** English Nature, Peterborough.

Harrison, C,. Burgress, J., Millward, A. and Dawe, G. 1995. **Accessible Natural Greenspace in Towns and Cities: A Review of Appropriate Size and Distance Criteria.** English Nature Research Report No. 153. English Nature, Peterborough.

Holden, R. 1996. **Making Parks for the Future from the Industrial Past.** The Architects Journal November: 32-35.

Johnston, J. and Newton, J. 1993. **Building Green.** London Ecology Unit, London.

London Ecology Unit (Various). **Nature Conservation in .....** A series of publications on the ecology of different London Boroughs. Now held by Greater London Authority.

London Wildlife Trust. 1999. **Black Redstart. An Advice Note for its Conservation in London.** London Wildlife Trust, London.

Parsons, R., Tassinary, L.G., Urlich, R.S., Hebl, M.R. & Grossman-Alexander, M. 1998. **The View From the Road: Implications for Stress Recovery and Immunization.** Journal of Environmental Psychology 18: 113-140.

Ratcliffe, D.A. 1977. **A Nature Conservation Review.** 2 Vols. Cambridge University Press, Cambridge.

Rhode, C.L.E. and Kendle A.D. 1994. **Human Well-Being, Natural Landscapes and Wildlife in Urban Areas – A Review.** English Nature, Peterborough.

Rogers, R. 1997. **Cities for a Small Planet.** Faber and Faber, London.

Urlich, R.S., Simons, R.F., Losito, B.D., Fiorito, E. Miles, M., and Zelson, M. 1991. **Stress Recovery During Exposure to Natural and Urban Environments.** Journal of Environmental Psychology. 11: 201-230.

ZinCo International. 1998. **Landscaped Roofs in their Most Attractive Form.** ZinCo, Unterensingen.

In the Journals

Compiled by Pat Rae, Peter Shepherd and Jim Thompson

British Ecological Society

A.J.M. Hewison and J. M. Gaillard.
Phenotypic quality and senescence affect different components of reproductive output in roe deer.
Journal of Animal Ecology, 2001, 70: 600-608.

This study investigated the effects of climate and maternal phenotype (mass, condition and age) on the potential litter size and implantation failure of ova in nine populations across Britain from the north west Scottish Highlands to south-eastern England. The study included 818 individual female roe deer. The potential litter size ranged from 1 to 4 with polvovulation recorded from 8 of the 9 populations. Among the prime aged does 16.7 to 54.4% failed to implant at least one blastocyst. The study showed that the fecundity of the does was affected by a combination of the condition of the female deer and its age. These factors however worked at different stages in the reproductive process. The condition of the deer as measured by body mass affected the number of ova produced and hence the potential litter size, whilst the age of the deer and not body mass affected the rate of implantation failure. Consequently roe deer fit the pattern of mass-related female fecundity that is commonly reported in ungulates.
Potential litter size was greater in larger deer whilst yearling animals and senescent animals had higher implantation failure rates than prim-aged does with senescent females having the highest failure rate. Implantation failure was also found to increase with increasing potential litter size and often failure was total with all the blastocysts not being implanted. The study also investigated the role of climatic severity in implantation failure and concluded that whilst there was no evidence of a correlation within populations there was between populations with increased implantation failure in those populations subject to the most severe climate.

A. Berggren, A. Carlson and O. Kindvall.
The effect of landscape composition on colonisation success, growth rate and dispersal in introduced bush-crickets *(Metrioptera roeseli).*
Journal of Animal Ecology, 2001, 70: 663-670.

This study investigated how habitat fragmentation through landscape composition and structure affected the success of colonisation, population growth and dispersal of Roesel's bush-cricket. The bush–cricket was introduced to 70 habitat islands near Uppland in Sweden in 1994-95. The populations were subsequently studied for 5 years. The habitat islands included patches of ungrazed semi-natural grasslands of varying sizes (264 to 8642 m^2) in arable fields. Some of the patches were connected to suitable bush-cricket habitat not occupied by this species whilst others were isolated by being up to 85 metres away from other suitable habitat. The minimum distance between populations was 2 km and the minimum distance from the existing population of Roesels bush-cricket was 17km.
The results showed that 42 of the 70 introductions had successfully colonised the areas in 1999. The only variable studied that had a significant effect on colonisation success was habitat isolation. Populations in landscapes with many linear landscape elements showed higher colonisation success than those that were most isolated. Population growth declined with increasing isolation from suitable grassland habitat and where there was greater forest habitat in the landscape. Population growth increased with the area of grassland, the number of linear landscape elements, the number of habitat nodes and patch size. Dispersal distances were also found to be significantly higher for individuals from populations with higher population growth.
The authors conclude that as well as the importance of habitat suitability for population persistence, connectivity in the form of linear landscape features and nodes were important for colonisation success, population growth and dispersal. The presence of linear features also reduced the negative effects of unsuitable habitat matrices and isolation. The results emphasise the importance of connectivity in the landscape for population survival and establishment and the authors advise that consideration of these factors should be taken into account in both management and re-establishment of this species and other invertebrates with similar population characteristics.

L. Ries and D.M. Debinski.
Butterfly responses to habitat edges in highly fragmented prairies of Central Iowa.
Journal of Animal Ecology, 2001, 70: 840-852.

This study investigated how edge habitats acted as a barrier to dispersal of a habitat specialist butterfly, the Regal fritillary *(Speyeria idalia)* and a habitat generalist butterfly, the Monarch *(Danaus plexippus)*. The Regal fritillary is a native prairie species whose host plant is a prairie violet species. The Monarch butterfly is very widespread and found throughout much of the world. The study looked at 4 different types of edge habitat with varying degrees of structure ranging from habitats with a high degree of structural variation (tree lines) to ones with low levels of variation (field margins). The other edge habitats studied included crop and road margins. Prairie habitats in central Iowa are highly fragmented with most being less than 4 ha in area and separated from the next habitat fragmented by at least several kilometres.
The Regal fritillary responded strongly to all habitat edges including those with a low structural contract. However, the behaviour of this habitat specialist was also strongly influenced by population density at crop and field edges where individuals were less likely to cross edges where there was a high population density. They responded to edges by turning to avoid crossing them and also by returning to the patch when they did cross them. The reduction of migration from high density aggregations has been noted in other butterfly and invertebrate species. This response to conspecific density has implications for conservation because if this species is more likely to emigrate from low-density patches, population growth rates may decline with declining population levels. The results of this study also showed that this phenomenon was recorded from within a single habitat patch.
The Monarch butterfly responded strongly to tree lines and wind direction and the time of year were also noted as important factors in the dispersal of this species. Conspecific density was not a significant factor in determining the behaviour of the species. The Monarch responded generally to edges by not crossing them, but when it did cross them they rarely returned to the habitat patch they had left.
The authors conclude that butterflies may respond strongly to even subtle habitat boundaries, but that responses may be influenced by edge structure, local environment or other conditions. Consequently, modifying edge structure may be a way to influence emigration rates.

B.J. Hatchwell, C. Anderson, D.J. Ross, M.K. Fowlie and P.G.Blackwell.
Social organisation of cooperatively breeding long-tailed tits: kinship and spatial dynamics.
Journal of Animal Ecology, 2001, 70: 820-830.

This study investigated the degree of overlap in ranges between flocks of non-breeding related long-tailed tits between 1996 and 1997. This species is a cooperative breeder in that breeders that have failed to raise off-spring become helpers to their relatives.

Flocks of non-breeding long-tailed tits are composed largely of related individuals although a small number of unrelated immigrants are also present. The home ranges of the flocks were large (27 to 108 ha) and there was a good degree of overlap between different flock ranges. The authors found that the extent to which different flocks overlapped was significantly affected by the relatedness of the flocks with those that contain close relative more likely to overlap than those that were not related. The study also showed that the amount of overlap was significantly greater if there were relatives in two adjacent flocks compared to adjacent flocks that did not contain relatives. Where flocks overlapped in home ranges the extent of relatedness between the flocks also affected avoidance behaviour. Where two overlapping flocks were unrelated they usually avoided overlap with the other flock.

NERC/SERAD Special Issue
Large-Scale Processes in Ecology and Hydrology
Journal of Applied Ecology, 2000, **37** Supplement 1

This journal is often at its most useful when it groups topics into broad themes. This Special Issue is such an example but the material though significant and thought provoking is not particularly accessible or easy to allow conclusions to be drawn that could be put into practice since a number tend to be speculative or suggestive of further work required. The editorial sets the scene for what these processes are and identifies five key features:

(a) they incorporate some of the most major of all ecological phenomena – the ranges of organisms, patterns of diversity, variation in ecosystem character and environmental processes such as climate, biogeographical cycles, dispersal and migration.
(b) they involve interactions across scales through both top-down and bottom-up processes;
(c) they are multifaceted and hence require an interdisciplinary perspective
(d) they reflect the cumulative effects of anthropogenic change across all scales and so have direct relevance to environmental management
(e) they invariably exceed the range of classical ecological experiments and so require alternative approaches to hypothesis testing.

The purpose of this volume was to illustrate some of the ecological research that is currently in progress in the UK. The papers that follow are not those in the whole volume but those where it is possible to a greater extent to draw conclusions that can be put into practice.

Y.C. Collingham, R.A. Wadsworth, B. Huntley and P.E. Hulme.
Predicting the spatial distribution of non-indigenous riparian weeds: issues of spatial scale and extent.
Journal of Applied Ecology, 2000, **37:** (Suppl.1), 13-27.

This paper is of interest in the light of the recent Symposium on invasive species. It considered the distribution of Japanese knotweed, *Fallopia japonica,* giant hogweed, *Heracleum mantegazzianum* and Himalayan balsam, *Impatiens glanduliflora*, all of which were featured in the Conference. The paper emphasizes the need to take into account the scale of distribution maps. It seems that in England measures of the distribution of the three species at a vice-county scale reveal most vice-counties to have been colonized. But at the hectad scale the species can still be seen to be expanding.
Control and conservation efforts will generally be applied at relatively fine spatial scales, yet for long-term management, a knowledge of the processes acting at larger spatial scales will be essential. The frequent importance of climatic factors in the distribution of all three species suggests that their present ranges may be strongly influenced by future environmental change.

R.A. Wadsworth, Y.C. Collingham, S.G. Willis, B.Huntley and P.E. Hulme
Simulating the spread and management of alien riparian weeds: are they out of control?
Journal of Applied Ecology, 2000, 37: (Suppl.1), 28-38.

This paper also deals with Himalayan balsam, *Impatiens glandiflora* and the giant hogweed, *Heracleum mantegazzianum*. Successful control of both species at a regional scale is only possible for strategies based on species distribution data undertaken at high intensities and efficiencies. The authors comment that in the British Isles, the majority of control programmes have failed to eradicate either of these two species from even a single catchment. The few published details of control programmes indicate that most have failed to take the population distribution into account, have directed their efforts at too small a proportion of the plant population and have focused upon the catchment rather than regional scale. If eradication is a serious goal of control programmes, then they must be co-ordinated at a regional or national scale, involve greater investment and extend over a longer duration.

Himalayan balsam on the River Lee

K.J. Gaston, T.M. Blackburn, J.J.D. Greenwood, R.D Gregory, R.M. Quinn and J.H. Lawton.
Abundance-occupancy relationships.
Journal of Applied Ecology, 2000, 37: (Suppl.1), 39-59.

The abundance and distribution of species tend to be linked, such that species declining in abundance often tend to show declines in the number of sites they occupy while species increasing in abundance tend also to be increasing in occupancy. Therefore, intraspecific abundance-occupancy relationships are commonly positive. The intraspecific pattern is mirrored by more general positive interspecific abundance-occupancy relationships: widespread species tend to be abundant, and narrowly distributed species rare. The paper reviews recent research on these patterns based on the flora and fauna of the British Isles.
The practical implications of this are interesting. Most species are locally rare and few are abundant and most species are narrowly distributed and few are widespread. This means that most species only occur in a few places and are also on average the most difficult to find in those places.

While it will find the rare species at those sites, an intensive programme at a few sites will, because of its limited spatial coverage, inevitably miss many other such species that only occur at other sites. Likewise, an extensive programme over many sites will fail to find many species because they are locally rare and will not be detected by superficial sampling. To generate worthwhile biodiversity inventories, there seems no choice but to sample extensively and intensively. The implications of this for standards for survey are significant and further evidence of the need to define the limitations of survey work , when undertaken.
There are further implications for conservation. Both the magnitude of local abundance and the extent of spatial contribution may contribute independently to its risk of global extinction Low local abundance increase the risk of stochastic extinction while a narrow geographical range increases the likelihood that all populations will be simultaneously subject to adverse environmental conditions.
The authors go on to point out that the reverse applies with invasive species double jeapody may well apply to species in decline but similarly it is double trouble from species on the increase.

M.J.R. Cowley, R.J. Wilson, J.L.Leon-Cortes,D. Guitierrez, C.R. Bulman and C.D. Thomas.
Habitat-based statistical models for predicting the spatial distribution of butterflies and day-flying moths in a fragmented landscape.
Journal of Applied Ecology, 2000, **37:** (Suppl.1), 60-72.

The paper starts with the premise that most species surveys are limited by time and money Therefore it would be extremely useful to develop predictive models of animal distributions based on habitat and to use these models to estimate species densities in poorly sampled regions. In the study two sets of data were collected. The first set consisted of over 2000 butterfly transect counts, which were used to determine the relative density of each species in a 35-km2 area of fragmented landscape in north-west Wales. For the second set of data the area was divided into 140 cells using a 500-m grid, and the extent of each habitat and the presence or absence of each butterfly or moth species was determined for each cell. The authors concluded that basic habitat data can be used to predict insect distributions and relative densities reasonably well within a fragmented landscape. It remains to be seen how accurate these predictions will be over other and wider areas.

S.R. Baillie, W.J. Sutherland, S.N. Freeman, R.D. Gregory and E. Paradis.
Consequencies of large scale processes for the conservation of bird populations.
Journal of Applied Ecology, 2000, **37:** (Suppl.1), 88-102.

This is an interesting paper in the context of whether conservation emphasis should be placed on specific protected areas or on the wider countryside.
Detailed studies of population ecology are usually carried out in relatively restricted areas in which emigration and immigration usually play a role. The authors used a modelling approach to explore the population consequences of such dispersal and applied ideas from these simulations to the conservation of wild birds. Dispersal between habitats may result in lower population densities at the edge of good habitat blocks and could partially explain why some species are restricted to large habitat fragments. Habitat deterioration may not only lead to population declines within that habitat but also in adjacent habitats of good quality. This may confound studies attempting to diagnose population declines. The authors concluded that if dispersal is an important process, then protecting only isolated areas may be insufficient to maintain the populations within them.

S.J. Petty, X. Lambin, T.N. Sherratt, C.J. Thomas, J.L.Mackinnon, C.F. Coles, M.Davison & B. Little.
Spatial synchrony in field vole *Microtis agrestis* abundance in a coniferous forest in northern England: the role of vole-eating raptors.
Journal of Applied Ecology, 2000, **37:** (Suppl.1), 136-147.

The regional synchrony hypothesis states that synchrony in microtine abundance over large geographical areas is caused by nomadic avian predators that specialize on small mammals for food. In the Kielder Forest the populations of kestrels and short eared owls have declined over a 23 year period and this provided the backdrop to examining their influence on synchronizing voles at different spatial scales. Field vole populations fluctuated on a 3-4 year cycle. If these raptors were responsible for the synchronization of vole abundance the decline should have been associated with a decrease in synchrony but no change was found. The authors concluded that small scale synchrony in filed vole abundance is unlikely to be caused by avian predators. Instead it is likely to be related to the pattern of clear cutting that has developed in Kielder which restricts vole dispersal. These conclusions indicate that foresters might be able to manipulate the spatial dynamics of voles and vole predators by varying patches within forests.

G.C. Smith, C.L. Cheeseman, R.S. Clifton-Hadley and D. Wilkinson.
A model of bovine tuberculosis in the badger *Meles meles*: an evaluation of control strategies.
Journal of Applied Ecology, 2001, **38:** 509-519.

This and the next paper really need to be read together – and the authors encourage us to do so with an understated cliff-hanger ending to the first. It is worth reading both articles for an overview of the various field trials that have been carried out by other researchers and to understand what is being modelled in this study.
Bovine tuberculosis remains a serious disease of cattle in the UK and in Ireland, and there is very strong, but still circumstantial evidence that infectious badgers cause a significant proportion of the total number of herd breakdowns, particularly in the south west. There is a similar but lesser problem in Belgium, and with brushtail possums in New Zealand. In this the first paper, the authors use an individual-based stochastic simulation model to investigate the control of bovine tuberculosis (TB) in the European badger *Meles meles*. Nearly all population and epidemiological parameters were derived from one study site, and the transmission of TB from badgers to cattle was included. The latter is an essential step if reactive badger control strategies are to be modelled. The model appeared to underestimate slightly the rate of population recovery following widespread culling. It is suggested that this may have been due to simulating an isolated population with no immigration and no compensatory increase in fecundity, but that this should not affect the relative efficacy of each control strategy. It does however require further investigation.
Of the historical methods of badger control, gassing and the 'clean ring' strategies were found to be the most effective at reducing disease prevalence in the badger and cattle herd breakdown rates. These results agree with those of earlier models. In a current field trial, the proactive badger removal operation should cause a dramatic decrease in the number of cattle herd breakdowns, but will also have the greatest effect on the badger population size. The proactive use of a live test to detect TB, followed by vaccination, appears to reduce substantially cattle herd breakdowns and disease prevalence in the badger.
The simulation showed that three combined control strategies gave the best initial reduction in cattle herd breakdown rate and disease prevalence in the badger: (i) a proactive cull followed by reactive test and cull; (ii) a continued vaccination and proactive test and cull; and (iii) a

continuous proactive test and cull. The results of simulation models suggest that badger vaccination is a very good method of TB control. This is at odds with simple models and requires further investigation.

G.C. Smith, C.L. Cheeseman, D. Wilkinson and R.S. Clifton-Hadley.
A model of bovine tuberculosis in the badger Meles meles: the inclusion of cattle and the use of a live test.
Journal of Applied Ecology, 2001, **38**: 520-535.

This follows on from the above paper, and is again a simulation study. The significance of the "live test" is that badgers are trapped first and tested for infection – and if the results are positive for one or more badgers, the whole sett was destroyed. If the results were negative, the badgers were released. The work is summarised by the authors as follows:
An individual-based stochastic simulation model was used to investigate the control of bovine tuberculosis (TB) in the European badger *Meles meles* by using a live test to determine the presence of infection. The model was an extension of earlier models, and nearly all population and epidemiological parameters were derived from one study site.
This is the first TB model to examine sex differences in disease epidemiology, and the transmission of TB from badgers to cattle. The latter is an essential step if reactive badger control strategies are to be modelled. Heterogeneity was introduced to the simulation model by the use of a carrying capacity, which defined the maximum number of breeding females per social group.
The prevalence of TB, and the number of simulated cattle herd breakdowns, was reduced for all control strategies using a live test, namely localised culling, ring culling and proactive culling. However, only proactive culling resulted in a marked reduction in these values within a few years.
If trapping efficacy was increased above its current value (80%), this did not improve the effectiveness of these culling strategies. If the number of individual badgers caught and tested per social group was doubled from two to four animals per group, then the overall level of effectiveness of these strategies could be doubled. The effectiveness could be improved if the sensitivity of the live test was increased, but did not continue to show an improvement above a sensitivity of about 70%.
Given the constraints of the current live test sensitivity (41%) and a trapping efficacy of 80%, proactive culling, following the testing of four individuals per group, led to an average of three cattle herd breakdowns per year in the simulation, compared with an average of 31 per year when simulating the live test trial as used between 1994 and 1996.

S. I. Higgins, D. M. Richardson and R. M. Cowling.
Validation of a spatial simulation model of a spreading alien plant population.
Journal of Applied Ecology, 2001, **38**: 571-584.

This is another topical paper in view of the recent issue by IEEM of the excellent proceedings volume entitled "Exotic and Invasive Species - should we be concerned? Papers on modelling can be a hard read, but this is well written. The authors are candid about the limitations of ecological modelling - and acknowledge that the model they present would need to be greatly revised if it were applied to another system. They also acknowledge that some factors cannot readily be included in the model. They cite chance events and long distance dispersal as such factors. Both of which are reminiscent of the determined efforts of one Mrs Norris of Camberley who, because she liked the plant, decided to spread the seeds of Himalayan Balsam as far and wide as possible - at home and abroad. Her tale is told in the IEEM proceedings above.
Meanwhile back at the alien invasion model, the authors, are interested in plant spread because of the importance for maintaining biodiversity, for determining the invasive success of aliens and for determining the ability of organisms to shift their ranges in response to global climate change. In other words process-based models, and spatially explicit models in particular, will play an important role in predicting the impacts of future environmental change.
However, enthusiasm for the rich potential of these models is tempered by the realization that the setting of parameters (parameterizing) is often challenging and time consuming. Moreover, these models are seldom validated; this makes their predictive value in applied contexts uncertain. In this paper the authors describe the process of parameterizing and validating a spatial demographic model of a spreading alien plant population. The model, a spatially explicit individual-based simulation, has modest data requirements (for a spatial simulation model) in that it concentrates on simulating recruitment, dispersal, mortality and disturbance and ignores the environmental and biotic heterogeneity of the receiving environment.
The authors tested the model using the invasion of Acacia cyclops and *Pinus pinaster* into fynbos, the mediterranean shrublands of South Africa, as a case study. Dispersal, recruitment and mortality data were collected for each species at six different sites. Aerial photographs from six independent sites (two sites for *A. cyclops* and four sites for *P. pinaster*) were used to reconstruct the invasion histories of the two species between 1938 and 1989. Demographic data were used to parameterize the model, and the 1938 distribution of alien plants was used to initialize the model.
The empirically estimated indices of rate and pattern of invasion fell within the range of model predictions made at all six sites studied. The indices of rate and pattern of invasion predicted by the model did not differ significantly from the empirically estimated indices for 76% of the model data comparisons made. These analyses suggest that the model predictions are good, given the variance in parameter estimates.
The proportion of grid locations where the model correctly predicted alien plant distribution was typically above 0·75 and always above 0·5 for both species. A permutation test showed that locations of invasive plants predicted by the model were significantly better than random for *P. pinaster,* but not always for *A. cyclops;* this may be because *A. cyclops* is bird dispersed, and its dispersal may be biased towards perch sites, whereas *P. pinaster* is wind dispersed.
The authors conclude that, although spatial simulation models are often more difficult to parameterize and validate than statistical or analytical models, there are situations where such effort is warranted. In this case the validation process provides confidence to use the model as a tool for planning the control of invasive plants. In a more general sense we believe that the approach outlined here could be used for model parameterization and validation in situations where spatial simulation models seem appropriate.

A. J. Davis, J. D. Holloway, H. Huijbregts, J. Krikken, A. H. Kirk-Spriggs and S.L. Sutton.
Dung beetles as indicators of change in the forests of northern Borneo.
Journal of Applied Ecology, 2001, **38:** 593-616.

Dung beetles are valuable and quite extensively studied members of rainforest society in various parts of the world. They are important decomposer organisms, involved with nutrient recycling, seed dispersal and the control of vertebrate parasites by removal of the source of infection.
The authors reviewed the use of dung beetles as indicators of environmental change, highlighting the influence of natural forest dynamics on species distributions in primary forest. They suggest new ways in which this can be used to understand and interpret the effects of disturbance such as logging. These ideas were applied to rainforest dung beetle communities in Sabah, Malaysia.
Dung beetle samples, using baited pitfall and flight intercept traps, were examined from primary, logged and plantation forests. Cluster analysis on dung beetle assemblages from primary forest samples showed clear species associations that had a high degree of fidelity to a particular biotope or vegetation type. Beetles were grouped into riverine-edge, riverine, interior-primary and 'even' (equitable distribution between biotopes) associations. Although biotope-specific associations were spatially separate in primary forest, these associations overlapped at forest margins (riverine forest) and in logged forest (to form 'composite assemblages').
Species associations showed different responses to disturbance: the riverine association included many species that showed a positive response, whereas others were neutral or negative in response; the even association species were mostly neutral; the primary forest associations were almost entirely negative in response.
The greatest faunal similarities were found between logged forest and riverine assemblages. Diversity was lower in logged compared with primary forest, and the lowest species richness and diversity were recorded in plantation forest. Small-scale species richness in logged forest was generally higher than in individual transects from primary forest due to the presence of overlapping species ranges (composite assemblages) that were usually spatially separate in primary forest. The data suggested that increased species richness at a fine scale does not necessarily mean that species richness is greater at a larger scale, and that species mixing in derived ecosystems is dependent on the type of disturbance. Forest management should aim to minimize the mixing of the components of different biotopes, by implementing low impact (i.e. reduced-impact logging) harvesting techniques.

I.J. Patterson and R.M.E. Fuchs
The use of nitrogen fertilizer on alternative grassland feeding refuges for pink-footed geese in spring.
Journal of Applied Ecology, 2001, **38:** 637-646

This paper provides a welcome and practical contribution to balancing the different needs of agriculture and wildlife.
Intensive agriculture often reduces biodiversity on farmed land, but the converse situation, of wildlife damaging agriculture, is also important. A striking example is agricultural damage by increasing populations of wild geese. Alternative feeding refuges, designed to reduce damage, will be most effective if the grass swards are made as attractive to geese as possible. This paper describes an explicitly experimental study in north-east Scotland during 1990–93, which investigated the effectiveness of different rates of application of nitrogenous fertilizer on the amount of grazing by pink-footed geese in spring, compared split-application with single-application of spring fertilizer, and evaluated the use of slow-release fertilizer in winter.
The amount of goose grazing, measured from cumulative dropping density, increased with application rates of spring fertilizer, up to around 80 kg N ha^{-1}, in parallel with a similar increase in grass production. Beyond this level there was little further increase, and cost-effectiveness, measured as the percentage increase in dropping density per kg N ha^{-1} applied, was greatly reduced.
Dropping density and grass production did not differ significantly between split-application and single-application of spring fertilizer. Split-application should reduce the risk of nitrogen leaching in cold wet seasons, but the cost of application would be double that of single-application.
Overall, cumulative dropping density and grass production in late May were not significantly greater in plots treated over the winter with slow-release fertilizer than in untreated plots. Dropping density was, however, higher in treated plots than in untreated ones during a short mild period in early spring. Slow-release fertilizer may be of benefit in mild winters, but is more expensive than conventional nitrogenous fertilizer.
This study has shown that nitrogenous fertilizer can greatly increase goose grazing on sacrificial grassland refuges in spring and is a useful tool in reducing conflict between farmers and increasing goose populations.

J.A. Vickery, J.R. Tallowin, R.E. Feber, E.J. Asteraki, P.W. Atkinson, R.J. Fuller and V.K.Brown
The management of lowland neutral grasslands in Britain: effects of agricultural practices on birds and their food resources.
Journal of Applied Ecology, 2001, **38:** 647-664.

The effects of agricultural intensification on biodiversity in arable systems of western Europe have received a great deal of attention. However, the recent transformation of grassland systems has been just as profound. The authors set out to review the situation, and with four aims: i.) to identify potential mechanisms by which the intensification of grassland management may impact on bird populations in Britain; ii) to review our current understandings of the mechanisms involved; iii) to highlight gaps in current knowledge in this area; and iv) to consider ways in which grassland management could be modified to benefit grassland birds.
In Britain, the management of grassland has changed substantially in the second half of the 20th century. A high proportion of lowland grassland is managed intensively. The major changes include a doubling in the use of inorganic nitrogen, a switch from hay to silage, and increased stocking densities, particularly of sheep. Structurally diverse and species-rich swards have been largely replaced by relatively dense, fast-growing and structurally uniform swards, dominated by competitive species.
Most of these changes have reduced the suitability of grassland as feeding and breeding habitat for birds. The most important direct effects have been deterioration of the sward as nesting and wintering habitat, and loss of seed resources as food. Short uniform swards afford poor shelter and camouflage from predators, whereas increased mowing intensities and trampling by stock will destroy nests and young. Increased frequency of sward defoliation reduces flowering and seed set, and hence food availability for seed-eating birds.
The indirect effects of intensification of management on birds relate largely to changes in the abundance and availability of invertebrate prey. The effects of management vary with its type, timing and intensity, and with invertebrate ecology and phenology, but, in general, the abundance and diversity of invertebrates declines with reductions in sward diversity and structural complexity.
Low input livestock systems are likely to be central to any future management strategies designed to maintain and restore the ecological diversity of semi-natural lowland grasslands. Low additions of organic fertilizer benefit some invertebrate prey species, and moderate levels of grazing encourage sward heterogeneity.
There is now a need to improve understanding of how grassland management affects bird population dynamics. Particularly important areas of research include: (i) the interaction between changes in food abundance, due to changes in fertilizer inputs, and food accessibility, due to changes in sward structure; (ii) the interaction between predation rates and management-related changes in habitat; and (iii) the impact of alternative anti-helminthic treatments for livestock on invertebrates and birds.

Recent Publications

Handbook for the Field Assessment of Land Degradation
Michael A Stocking and Niamh Murnaghan
Earthscan Publications Ltd, London ISBN 1-85383-831-4
For an ecologist the topic of land degradation is significant and this is a comprehensive and accessible approach to the subject. Its focus however is very much towards the degradation of agricultural land and the subsequent losses in crop production capability. There are 40 illustrations, mostly taken in areas of tropical agriculture. There are also some well laid out appendices to lead people through the process of assessment. The final chapter on conservation focuses on techniques for conserving land rather than the conservation of species. This seems a good treatment of the subject but will probably only be of appeal to those with a direct interest in the subject and particularly from an agricultural viewpoint. At £25.00 it is good value for money.

Political Theory and the Environment - a Reassessment
Mathew Humphrey (ed)
Frank Cass, 47 Chase Side, London N14 5BP
ISBN: 07146 8187 3 (paper)
As we move towards the earth summit 10 years on from Rio we need to be giving serious thought to the interaction between politics at a global level and conservation issues. Sadly this book is unlikely to help. I think I would be much more likely to turn to the New Renaissance Group and their publication last year - Where Next? or indeed their specially prepared discussion document for the Rio+ 10 Meeting - Beyond Sustainable Development . One chapter - The Urban Blind Spot in Environmental Ethics champions the cause of ecological restoration almost as if it were a new idea. For a book published in 2001 it is hard to justify the omission of ecological restoration work in Europe - in Berlin and other German cities following war damage and numerous examples in London and other British cities or indeed the lake restoration in Central Park, New York and with well chronicled accounts of community involvement. I came across a new word - ecologism but I am not sure what it meant. It was placed in an intriguing chapter - what's wrong with ecofeminism by Lucy Sargesson from Nottingham University. Here I would like to have seen some reference to the work at University College London by Caroline Harrison *et al.* which did address issues of perception of the countryside by women together with access issues. Finally, there are Ten Commandments of how to fail in a political campaign. As IEEM is not a campaigning body itself but members may have participated in campaigns individually, this might be of interest. At £17.50 it could be worth buying for its distinctive approach.

Watersheds - a Practical Handbook for Healthy Water
Clive Dobson and Gregor Gilpin Beck
Firefly Books Ltd, 3, Fleets Lane, Poole BH15 3AJ
ISBN 1-55209-330-1
As an introduction to the overall subject of water management this is a thoroughly readable book with a great deal of information on a host of general environmental issues. But it is really too basic for the professional in the field. It is completely set in North America and all the examples are American. I liked its style both in content and the way it was illustrated and a version set in the European context would be excellent. Even so at £13.95 it is excellent value.

Living Waterways - a showcase of waterside rejuvenation projects
This is clearly a celebration of a number of recent successes incorporating a range of environmental improvements and it makes encouraging reading. The projects are : the Gainsborough flood defences, Denver lock, London's Waterway Partnership, the Harbour of Rye, Salford Quays and Lydney Docks.
Available from: the Environment Agency, Rio house, Aztec west, Almondsbury, Bristol, BS32 4UD. Tel: 01454 624 400
Website: www.environment-agency.gov.uk:

Ecology, Uncertainty and Policy
Managing Ecosystems for Sustainability
Edited by J.W. Handmer, T.W. Norton and S.R. Dovers
Prentice Hall, Pearson Education Ltd, Edinburgh Gate, Harlow, Essex CM20 2JE ISBN 0 130 16121' 7
This is a useful book and consists of a series of ecological case studies in a political framework These are arranged in 13 chapters drawing on the expertise of authors particularly in Australia. These are :
Ignorance, uncertainty and ecology: key themes;
Challenges to ecosystem management and some implications for science and policy;
Bioregional approach to conservation; local strategies to deal with uncertainty;
Sentimental ecology, science and sustainable ecosystem management;
Limitless lands and limited knowledge: coping with uncertainty and ignorance in northern Australia;
Global warming: science as a legitimator of politics and trade?;
Sustainability, uncertainty and global fisheries;
Sustainability, uncertainty and environmental policy; lessons from New Zealand's pastoral high country;
Fire and biodiversity: understanding and managing the impacts of fire on forest diversity in south eastern Australia;
Wetlands: policy ahead of knowledge?;
Acid rain and critical loads: science policy processes in the UK;
Uncertainty, epistemic communities and public policy;
Managing ecosystems for sustainability: challenges and opportunities.
At a price of £24.99 it is a good buy and is the sort of material that should be read in the build-up to Johannesburg. The cover sets the scene by stating that scientists must understand the local context of environmental management and build closer links with policy networks and with other disciplines if they are to make useful contributions to policy formulation and management.

Wildlife Management and Habitat Creation on Landfill Sites
This is a new publication prepared by Ecoscope Applied ecologists with its production managed by the Tees Valley Wildlfe Trust. The first section of the Report covers non-fatal methods of controlling the number of pest species on landfill sites, while the second section of the manual addresses restoration opportunities on closed landfill sites including the creation of valuable wildlife habitats. Case studies highlight the variety of defining habitats that can be created, including lowland heathland and wildflower meadows.

CLA Policy Statement on Climate Change
The CLA have recently produced a statement on climate change with 102 policy recommendations and it makes for interesting reading within the overall context of the interests of the CLA. Some of the key policy recommendations are:
- support for soil management practices that store carbon and improve biodiversity
- Develop accounting systems for farmers to increase awareness of emissions
- Grow products such as elephant grass and willows to replace fossil fuels
- Support foresters to sequester more carbon
- Develop incentives for managed realignment of the coast and managed re-creation of floodplains as tools to control flooding
- Increase the land area under conservation agreements

Available from: CLA, 16 Belgrave Square, London SW1X 8PQ

Froglife : Great Crested Newt Conservation Handbook
This is a full-colour 60 page publication giving information on how the tasks outlined in the Species Action Plan can be achieved on the ground. In particular it focuses on survey and habitat management for great crested newts, with supporting information on ecology, legal protection and licensing, and site protection.
Available by: sending an 87p SAE to Great Crested Newt Conservation Handbook, Froglife, Mansion House, 27-28 Market Place, Halesworth, Suffolk IP19 8AY

Recent Publications (Continued)

Sustainable Local Foods
This is a useful publication in the context of the considerations of the aftermath of the Foot and Mouth Disease outbreak It states that decisions have to be made in relation to FMD but also about methods to revitalise farming and rural communities, the management of the countryside and restoring the quality of the rural environment, improving access to fresh food and restoring consumer confidence in local produce
Available from: CPRE , 25 Buckingham Palace Road, London SW1W 0PP.

Crops on Trial - a Report by the Agriculture and Environment Biotechnology Commission
This is the report by the AEBC on the GM crop trials. The advice to ministers is that although the GM crop trials will provide valuable ecological data, more information will need to be considered and there must be wider public consultation before any decision to commercialise can be taken. GM Farm Scale evaluations should continue but only under certain conditions:
Government confirms that no commercial cultivation of GM crops in the UK will take place until the trials are complete and the results have been evaluated alongside other factors and evidence;
adequate separation distances are set for the remaining trials to ensure that the interests of all parties including organic farmers, are accommodated;
the objectives and limitations of the trials must be clearly stated and communicated to the public;
There must be effective local consultation around crop trial sites, taking into account in particular the interests of local stakeholders.
In addition to the results from the FSE's, the Government must take into account scientific information from other sources, ethical concerns, strategic and economic issues raised by the forthcoming Policy Commission on Food and Farming and the concerns expressed by the public before any decision to commercialise is taken.
Available from: AEBC Press Office Tel: 0207 836 4886
Email: aebc@ westminster.com

English Nature Annual report April 2000- March 2001
ISBN 1 85716 567 5
A wealth of highly useful information is presented under its key themes: Designated Sites, Biodiversity and the Wider Countryside, People and Policies, Modernising and Managing English Nature, and Science. The section on the SSSIs gives an interesting breakdown of the main habitat types and the percentage area in favourable or recovering condition. The fact that only 38% of lowland calcareous grassland, 33% of upland calcareous grassland and 27% of upland heath is in these categories remains cause for considerable concern. There is mention in this section of the UK Marine SACs project which has been established for 5 years and has made considerable progress. This will be of interest at Torquay There are useful maps of the SPA's and Ramsar Sites the SAC's and the NNR - and there is also a glossary to help with some of the more unfamiliar terms! Each section lists some key highlights. Within the designated sites there is the new SSSI legislation - the CROW Act, The assessment of the condition of 66% of SSSI's and the submission to Europe of 212 SAC's .
Under Biodiversity 93% of Species Recovery Programme species are showing progress, there are four lifescape pilot projects and a success story in the re-creation of heathland in Cornwall.
Under people and policies - and it is good to see the emphasis on people, the successful Wild Day Outs on the NNR's, the new Grants for LNR's, the Upland Challenge - management issues in the uplands are addressed. The section on science records the climate change project, the three year project on the decline of turtle doves and the first co-ordinated UK breeding survey of the red Kite.
Available from: English Nature, Northminster House, Peterborough, PEI 1UA .

IEEM GUIDELINES ON ECOLOGICAL IMPACT ASSESSMENT - Report on Progress

Karen Regini, MIEEM

Our steering group is supported in its labours by continued interest from IEEM members and other ecologists. The wider working party (which is sent updates of the working draft and notes of steering group meetings) is constantly growing, currently numbering eighty. Input from the wide spectrum of our industry represented by this working party is vital if the guidance is to meet the needs of as many professional ecologists as possible. Please let me know if you would like to join.

The steering group has also recently acquired new members, representing the Environment Agency, English Nature and the Greater London Authority Biodiversity Group. The Scottish, Welsh and Northern Irish agencies are represented on the working party and together with other bodies such as DEFRA, and DETR, will be consulted on the pilot guidance.

The original timetable for the production of the pilot has slipped slightly, due to a decision to review the developing working draft. This has resulted in a more coherent document, which forms a better basis on which to build. The second draft (which is now on IEEM's web page) represents our work on scoping and the valuation of ecological receptors. We have done further work on the assessment of the impact of the development for these receptors, which will be included in the third version, to be published on the web before the end of October. On 31 October the group will be meeting to discuss the significance of these impacts. Please send any comments on this subject in advance to Helen Byron (helen.byron@rspb.org.uk) and/or Mick Hall (mjhall@ctrl.co.uk).

I will present the 4th draft of the working draft, incorporating the outcome of our October discussions, to the IEEM Conference on 29th November at 1.30 pm. The document will be incomplete, as we will not have undertaken the work for the final chapter entitled 'Implications'. However, I intend to explain the thinking behind the working draft and hand out copies, for IEEM members to consider and possibly begin to try out.

After the Conference, the steering group will complete the final chapter and issue the pilot guidance in the New Year, for widescale consultation. All members of the working party and relevant agencies and organisations, will be included in this consultation process. The steering group still hopes to launch the approved guidance in early Summer 2002.

We would like to thank CPM for its continued administrative support for this process. In particular, Sandra Brown deserves our gratitude, who manages to squeeze the collection and distribution of our numerous e-mails into an already busy working schedule.

Please contact me on info@cpm-uk.co.uk if you would like any further information on the above.

News in Brief

Bananas

The banana trade has some interesting and significant issues for both consumers and ecologists. There seem to be five key issues: 1. Banana production is often in tropical rainforests or is a pressure for the clearance of tropical rainforests;
2. It is an important source of income and employment and the social conditions have aroused concern;
3. The environmental standards during production are not always very high;
4. Bananas are growing in popularity and the most popular UK fruit.
5. Following the recent GATT discussions there is now increased access into European markets from areas previously excluded.
The Rainforest Alliance is an international non-profit organization whose mission is to develop and promote economically viable and socially desirable alternatives to the destruction of the world's endangered, biologically diverse tropical forests. The Reybancorp company was the first banana company to achieve total compliance with standards set under the better Banana Programme introduced by the Rainforest Alliance. Favorita Fruit, a subsidiary of Reybancorp Company recently held a reception at Kew Gardens to illustrate the environmentally benign methods of fruit production that are currently employed as part of a campaign to penetrate European markets by being environmentally more friendly than their competitors. Perhaps it is time to give more thought to the production methods of bananas.

Expert Witnesses

The UK Register of Expert Witnesses is always pleased to hear from suitably qualified specialists in any field who wish to promote their availability as expert witnesses to a wider circle of solicitors, barristers, trading standards officers and insurance companies. Preparations for the 15th edition (to be published May 2002) are underway, so apply now for a listing in this specialist resource.
To find out how to become listed, contact Terri Kavanagh at J S Publications, PO Box 505, Newmarket, Suffolk, CB8 7TF Tel:01638 561590; 01638 560924 www.jspubs.com; Email terri@jspubs.com .

Webcam Technology on the Huddersfield Canal

One of the problems with the often well intentioned restoration of derelict canals is that in the period that they have been dormant, wildlife may often have flourished and to the point that it is not uncommon for little used stretches of canals to be delared as SSSI's. Obtaining accurate figures on boat movements and the disturbance they cause has usually been difficult but, with the installation of the Webcam on the Huddersfield Canal they now not only have more accurate boating figures but also are able to collect new information on vital questions such as boat direction, type speed, wash and channel position and their effects on the aquatic plant life of the canal.

Johannesburg 2002

There are now all sorts of activities in the buildup to the Summit, 10 years on from Rio.Try looking up www.earthsummit2002.org for further information. Also the publication by the **New Renaissance Group - Beyond Sustainable Development** is well worth reading - www.conservationfoundation.co.uk.

Engineering Council Environmental Awards for Engineers

The finals ceremony of this annual event took place on 10th October at the Institution of Civil Engineers. The overall winner was the **glowstar lantern** developed by Intermediate technology Consultants of Rugby. This is a solar rechargeable lantern which, once charged, is capable of producing at least 4 hours of light rather similar in quality to that of a mini fluorescent tube. This has significant advantages in areas of the world without electricity supply and where paraffin is normally used together with significant amounts of dry cell batteries for torches and radios.
Slightly closer to home, the Rolls Royce trophy for Engineering in the Natural Environment went to British Waterways in Devizes for the reconstruction of the Kennet and Avon Canal. The project whilst certainly impressive from an engineering viewpoint and a very fine example of the use of lottery funds, encompassed a number of imaginative habitat creation schemes and ways by which the hard engineering was located so as to enhance the value for wildlife.

Staffordshire University Nature Reserve

It is good to learn of university students getting some first hand experience of practical conservation. The Staffordshire University's Nature Reserve is a 10 acre site which lies on the University Campus. It includes the banks of the River Trent, reed marsh, woodland and ponds fed by a natural stream together with an area of grassland. This is a valuable resource for students on biology and environment courses and particularly the MSc in Habitat Creation and management and is maintained by members of the University Conservation Society.

The Crown Estate

The Crown Estate includes over 120,000 hectares of Agricultural land in England, Scotland and Wales, substantial blocks of urban property and owns, in this context, almost half the foreshore together with the sea-bed out to the 12 mile territorial limit. The Estate has now appointed a Crown Estate Marine Environment and Policy Manager - Dr Carolyn Heeps with an opportunity to play a leading role in the future development, strategic and sustainable management of the marine estate. She was formerly head of Education at the National Museums and Galleries of Wales.

The Countryside Council for Wales

CCW has announced that it is committed to ensure that by 2010, Wales has:

- Landscapes of more distinctive character
- More wildlife on land and in the sea
- Economic Development that respects the natural environment and its historical and cultural heritage
- Greater access to the Countryside and Coast for all its people and its visitors, increasing their well being and enjoyment.

Under Landscape CCW 's targets include:

- the National Parks and AONB's to become exemplars of sustainable management of the countryside and its communities
- Expanding broadleaved woodlands, heather moors, flower meadows and wetlands to give the Countryside more colour
- Planting more diverse arable crops to enhance the landscapes's texture and appearance
- restructuring conifer plantations so that they fit more naturally into the landscape
- Creating more Local Nature reserves.

Wildlife on land

- Improving the survival prospects of species under threat
- Changing farming practices through the Tir Gofal scheme
- Improving air Quality and the quality of lakes, rivers and streams
- aiming for developments which minimise impacts on habitats and wildlife

In the sea:

- Monitoring the threat posed by invasive marine species so that appropriate action can be taken
- Creating 'safe 'areas to conserve stocks of inshore fish
- setting up immediate response systems to minimise pollution arising from accidents at sea
- Siting offshore developments to safeguard important wildlife areas and to avoid unacceptable visual intrusion from the land.

All in all this is an ambitious programme which will require resources and dedication if it is to succeed.

10th Anniversary of Water Ecology Centre

Not only is it the 10th Anniversary of the Institute, it is also the 10th Anniversary of the Northumbrian Water Ecology Centre at the University of Sunderland. The centre has a reputation for first class facilities for ecology teaching, research and holding international seminars and conferences.

10th Anniversary Celebration

Sue Bell , MIEEM

On 26th September 1991 around 150 people met in the Royal Geographical Society (RGS) to discuss the formation of a new Professional Institute. On the same date this year around 100 members of this "new" Institute reconvened at the RGS to celebrate ten years of the Institute of Ecology and Environmental Management.

Some of the Founder Members, 10 years on

As a relative newcomer to the Institute it was interesting to hear why people had felt that a Professional Institute for ecologists and environmental managers was required. Professor Tony Bradshaw, IEEM's first President recalled the first edition of "In Practice". This ran the headline "Yet another Professional Institute!" He then when on to explain that it was a wish to provide an accreditation system for the quality of environmental advice being offered; and the payment of fair fees for this advice which helped to prompt the formation of the Institute. IEEM has been fortunate in attracting support from a range of respected organisations and Societies, and Tony paid particular tribute to the British Ecological Society who have been supportive in word and deed over the past ten years.

Tony Bradshaw in good form setting the proceedings going

The level of support which the Institute has attracted was demonstrated by the attendance of a number of our Patrons including Baroness Young. In a positive and supportive speech she reminded us that the significance of environmental issues on the political agenda has increased significantly over the last ten years. As an illustration she noted that the Treasury has asked all Government Departments to provide copies of their Sustainable Development plans when submitting their funding requests for the next financial year. She also expressed support for co-operative working between different environmental professionals.

Barbara Young sets the scene and poses a few questions

The formal element of the evening was concluded by a forward-looking speech by IEEM's current President: David Hill. David looked to the future and highlighted the key goals of the Institute's Strategic Development Plan. In particular he noted IEEM's aspirations for growth in membership, development of geographic regional groups, a continued commitment to raising standards, providing appropriate training, recognition of experience through Chartered status, providing advice to Government and others, and establishing improved links with other like-minded professionals. David also paid tribute to all those who have, and continue, to be involved in managing the Institute. In particular he highlighted the work of Jim Thompson who keeps the IEEM running.

David Hill outlines some of the priorities for IEEM for the next 10 years

The President and three Past Presidents of IEEM - David Hill, Tony Bradshaw, David Goode and David Parker

Particular tribute was paid to the support of the Patrons through the early years of the Institute - Lord Cranbrook. Norman Moore, Babara Young and Tony Bradshaw were all present. The retiring Patrons, Lord Cranbrook, Sir Martin Holdgate, Dr Norman Moore, Sir Richard Southwood, Professor Robert Swan were given particular recognition and the two retiring Patrons present were given a small token of appreciation by the Institute.

The Four Patrons present on the occasion - Barbara Young, Norman Moore, Lord Cranbrook and Tony Bradshaw

David was also delighted to announce that IEEM has made it's first honorary award for services to ecology to Sir David Attenborough:

SIR DAVID ATTENBOROUGH, CB, FRS

THE IEEM MEDAL
FOR
OUTSTANDING CONTRIBUTION TO THE PUBLIC APPRECIATION OF ECOLOGY
IEEM 10th ANNIVERSARY, 2001

Unfortunately David Attenborough was unable to attend the celebration as he was away filming in Madagascar but he has indicated that he is pleased to accept the award and a formal presentation will be arranged at a later date.

Norman Moore and Lord Cranbrook respond

With the formal speeches over it was time for the socialising to begin! Well-known ecologists familiar from the pages of the scientific journals mingled with those starting to make their name. Fellow consultants swapped stories about the vagaries of clients; statutory agencies and local authorities swapped stories about the vagaries of consultants, academics swapped stories about funding constraints and everyone swapped stories about the pressure of work, the impact of foot and mouth, and how difficult it was to make time for field work!! However, the unifying threads throughout the evening were the strong commitment to excellence, and the enjoyment people gain from working in ecology and environmental management.

The evening was unashamedly full of feel-good factor. IEEM has done much to help raise the profile of the Profession in the last ten years, and as members we should all feel proud of our involvement in this. Here's to the next ten years!

Institute News

Discussions with other Institutions
There have been regular references in this section to the discussions with other Institutions to encourage closer working practices and to agree a means by which the smaller Institutions could obtain chartered status for their members through the formation of an umbrella body. Good progress was at last being made and a number of Institutions were signed up to this process including IEEM. Much now depends on clarification of the intentions of CIWEM both in relation to the other Institutions and the messages being relayed to the CIWEM membership. Ultimately the intention of IEEM is to obtain chartered status for its members and should the current approach fail, there may well be other avenues open.

The 2002 Professional Development Programme
Members of the Training, Education and Career Development Committee and the Secretariat are now starting work on the programme for next year and this is expected to be available shortly. The disruption to the 2001 programme caused by the Foot and Mouth Disease has really been considerable. Several courses had to be rescheduled and some did not run at all or others had to be held not at the ideal time of year. The supervisors did their utmost to accommodate the changes in dates and the participants seem to have born the inconvenience with good spirit. Hopefully next year will see a programme free of such problems.

CPD - It's on its way
There has been a delay in the introduction of the new system for CPD but it is definitely on its way and should be in full operation at the start of the next calendar year - from January 2002.

Committee Matters
There is still time for nominations to the Committees and to Council so if you were considering volunteering do get your nomination forms signed and sent into the office.
Some people indicated in their responses in the 10th Anniversary questionnaires that they would like to become more involved in the affairs of the Institute but then did not sign the form! If you think you might be one of these do please contact the Secretariat.

Patrons
The 10th Anniversary saw the retirement of five Patrons, some of whom had been in that position since the start of the Institute. Those retiring were: The Earl of Cranbrook, Sir Martin Holdgate, Dr Norman Moore, Professor Richard Southwood and Professor Robert Swan. The Institute would like to extend its sincere thanks to all those Patrons who have given their support during the formative years. Council will now be considering some further appointments as Patrons.

Foot and Mouth Disease
There are beginning to be signs that the disease is past us at last but it certainly has been a disruption for a number of members. In the survey 31.5% reported that they had been affected significantly.

Ecological Surveys
The Professional Affairs Committee has recently considered some concerns expressed about surveys. In a year when it may not have been possible to have conducted a survey at the ideal time, it is particularly important to inform clients about their limitations and is a requirement of the Code of Professional Conduct.

Membership Subscriptions
Membership renewals were due on the 1st October and the response has so far been very positive. Usually, however the pattern is reminiscent of the daily outbreaks of Foot and Mouth Disease - a sharp peak at first and a very long tail. So if everyone could make a real effort to shorten the tail it would be most appreciated.

Are you about to or have changed your address?
There have been several cases recently where members have either failed to notify the Institute of a change of address or where the notification has gone astray. Mailouts are now relatively frequent so if a member has not heard from IEEM for some months there is probably something wrong. Do please check with the Secretariat if you find yourself in that position.

The 10th Anniversary Questionnaire
Many thanks to all those who took the trouble to complete the questionnaire. The response was very positive in that we had about 400 returns and the initial results are reported elsewhere in this edition. On the whole the views about the Institute were quite positive and certainly progress has been made in the last year or so in meeting some of the expectations of members With about 30 questions and some detailed aspects to a number of them there is quite a bit to consider. Also a number of members made specific comments or offers of help which will all be looked at in due course. Analysis of the results is at an advanced stage so it is probably not worthwhile sending in any further responses.

IEEM Membership Regulations
The secretariat produces updates versions of the membership regulations from time to time and one has been produced recently. These are sent out in response to all enquiries but it might just be that you know someone who is doubtful about applying and who may have a copy of the old regulations. In the last year or so there have been several minor changes to the regulations which may help some people.

IEEM Members honoured
Congratulations to two members on being awarded an MBE - Dr Christopher Spray, of Northumbrian Water for services to environmental improvement and conservation in the water industry and Paul Harding, Head of the Biological Records Centre at CEH for services to biological recording.

Conference Proceedings
All members should now have received their copies of the Proceedings of the Conference in Birmingham on Exotic and Invasive Species - should we be concerned and the Conference in Ayr on Ecologists and the Rural economy. Our thanks go to the authors for providing the material and to the editors - Paul Bradley and Penny Legg for bringing the material together so ably. Further copies are for sale - just the thing for the library!

Torquay, 2001
The programmes for the Conference have now been sent out. Thanks go to Peter Beale in particular for his efforts in drawing together what looks like a most interesting, and wide ranging programme. Eirene Williams and Andy Nisbet have also helped with the arrangements and I do hope that as many members as possible will be able to attend.
Apologies: There is unfortunately an error on the booking form in that the two dinners are on the 27th & 28th November and not on the 29th. The actual programme is correct.

Conferences for 2002
The next 1-day Conference will be held in Birmingham on 11th April 2002 with the likely theme of Aspects of Urban Ecology but consideration is being given to making this theme into a full 2-day Conference in the Autumn of 2002.

Obituary
The Institute has heard with regret of the recent deaths of Dr Andrew Malloch a retired member from Lancaster University, well known lecturer and member of the British Ecological Society and Ms Dinah Browne, OBE, of Dinah Browne Associates and Chairman of the Council for Nature Conservation and the Countryside of Northern Ireland.

Prospective members of IEEM

The following people have applied for membership of IEEM. If any existing member has any good reason to object to someone being admitted to the Institute, especially if this relates to compliance with the Code of Professional Conduct, they must inform the Executive Director by telephone or letter before 26th November 2001.

Any communications will be handled discretely. The decision on admission is usually taken by the Membership Admissions Committee under delegated authority from Council but may be taken by Council itself.

F=Full A=Associate

Name			Category applied for
Mr	James R.	Adkins	F
Dr	Philip	Bacon	F
Mr	Donald R.	Baker	F
Dr	David M.	Balbi	F
Mrs	George	Bemment	F
Miss	Sian L.	Bishop	F
Miss	Kathryn	Charles	F
Prof	Philip S.	Corbet	F
Mr	Jonathan R.	Cox	F
Mrs	Karen R.	Edwards	F
Dr	Clare D.	Fitzgibbon	F
Miss	Alison C.	Green	A
Mr	Neil J.	Guthrie	F
Miss	Rachel A.	Hayward	F
Ms	Viki	Hirst	F
Mr	David C.	Jackson	A
Miss	Georgina L.	Kearsley	F
Ms	Helen F.	Lancaster	A
Mrs	Anne L.	Law	A
Mr	Ben	Leyshon	F
Miss	Rebecca J.	Longfield	A
Dr	Jemma	Macdonald	F
Miss	Fiona	Mackenzie	A
Miss	Caroline	Malcolm	F
Mr	Fraser	Maxwell	A
Ms	Louise M.	McAlavey	A
Ms	Lindsay J.	McCulloch	F
Mr	James F.	McDougall	F
Mr	Guy	Miller	F
Mrs	Morag A.	Milne	F
Miss	Sally C.	Monks	A
Miss	Katy A.	Morris	A
Miss	Michelle	Nolan	A
Ms	Emma V.	Parkes	F
Ms	Susan M.	Parsons	F
Miss	Deborah A.	Petterson	A
Miss	Sharon	Pilkington	A
Mr	John P.	Poland	A
Mr	John B.	Ratcliffe	F
Mr	Glenn D.	Richards	F
Mr	Malcolm J.	Robertson	F
Dr	Sarah Y.	Ross	F
Ms	Gillie	Sargent	F
Mr	Benjamin	Scotting	A
Mr	Philip A.	Smart	F
Mr	Pascal G.	Sweeney	F
Miss	Sarah L.	Thompson	F
Dr	Matthew M.	Watts	A
Dr	Belinda R.	Wheeler	F
Mr	David	Whiting	F
Mr	Adrian R.	Yallop	F

New Admissions to IEEM

IEEM is pleased to welcome the individuals listed below who have now been admitted as new members.

Name			Grade admitted
Ms	Ione R.	Bareau	A
Miss	Diane J.	Barker	F
Mr	Alistair	Baxter	F
Prof	Nigel	Bell	F
Miss	Alison C.	Bennett	F
Ms	Julie N.	Brownbridge	F
Mr	Peter J	Carpenter	F
Mr	Feliciano	Cirimele	A
Miss	Rachel	Cook	A
Ms	Oda	Dijksterhuis	F
Mr	Peter A.	Edwards	A
Ms	Tammy	Edwards	A
Mr	James	Farrell	F
Mr	Roger M.	Featherstone	A
Mr	Frank	Fortune	F
Mr	Terry	Franklin	F
Mr	Peter	Gondris	F
Dr	David J.	Hackett	F
Miss	Dawn E.	Hardy	A
Dr	Rachel A.	Hirst	F
Dr	Miles G.	Hoskin	F
Mr	Peter	Hoy	A
Mr	Kieron R.	Huston	F
Mr	John R.	Jones	A
Mr	Alan J.	Lawrence	A
Mr	Andrew	McNaught	F
Mr	Mark C.	Mifsud	A
Mr	Kevin	Morgan	F
Mr	Robert I.	Mungovan	F
Dr	Stephen E.	Mustow	F
Mr	Graham	Myers	A
Dr	Albert S.	Nottage	F
Mr	Tristan L.	Owen	F
Miss	Esther C.	Pawley	A
Mr	Matthew	Pickard	F
Mr	Jonathan	Price	A
Ms	Anna V.	Prichard	F
Mr	David A.	Revill	A
Miss	Phillipa	Reynolds	F
Ms	Elaine	Richmond	F
Dr	Glen	Robson	F
Miss	Victoria A.	Smith	A
Mr	David J.	Stanton	A
Mr	Anthony J.	Stones	F
Ms	Gillian L.	Thompson	F
Miss	Claire A.	Vetori	F
Miss	Karen E.	Vowles	F
Miss	Kirsten A.	Walker	F
Mr	William R.	Watson	A
Mr	Christopher	Wedge	F
Mr	Barry P.	Whittle	A
Mr	Michael J.	Woods	A
Mr	Stephen R.	Woolnough	A
Mr	Ian M.	Yarham	F
Mr	Timothy C.	Youngs	F

The following have successfully upgraded their membership from Associate to Full

Mr	Alan	Holmes
Mr	Michael A.	Jennings
Ms	Isabelle	Moriera
Miss	Emma	Pitcher
Mr	Colin	Shawyer
Mr	Patrick	Waring

The Course programmes for 2002 for the Centre for Alternative Technology, The Field Studies Council, Losehill Hall, Plas Tan- y- Bwlch and BTCV are all now available or in preparation . Each offers a wide range of courses that might be of interest to IEEM members. Information from:
Centre for Alternative Technology: Further details about each course can be obtained from Joan Randle,
Tel: 01654 703743, Fax: 01654 703605, E-mail: joan@cateducation.demon.co.uk.

Field Studies Council: For a copy of the FSC Courses 2002 brochure, contact FSC head Office, Preston Montford, Montford bridge, Shrewsbury, Shropshire, SY4 1HW. Tel: 01743 850 674, Fax: 01743 850 178, E-mail fsc.headoffice@ukonline.co.uk.

Losehill Hall: Details from Losehill Hall, Peak District National Park Centre, Castleton, Hope Valley , Derbyshire S33 8WB
Tel: 01433 620373, Fax: 01433 620346, E-mail: training @ losehill.u-net.com.

Plas Tan-y-Bwlch: Details from: Plas Tan-y-Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd LL41 3YU. Tel: 01766 590324,
Fax: 01766 590274, E-mail: Plastanybwlch@compuserve.com.

BTCV Courses: - practically based. Details from: BTCV Training Programmes Unit, Red House, Hill Lane, Great Barr, Birmingham B43 6LZ.
Tel: 0121 358 2155, Fax: 0121 358 2194, E-mail: ETN@ukgateway.net

1 & 15 November. Environmental Information on the Internet.
Details from: Green Door Services, PO Box 60 Clitheroe, BB7 1GS.
Tel: 0870 321 7029 Email: training@greendoorservices.co.uk.

31 October. Running Projects effectively, RICS, London.
Details from RICS Email courses@mid-career-college.ac.uk.

7 November. IEEM Northeast Section. The impact of the new ACCESS legislation in the Region Robert Mayhew, MIEEM
Northumberland Wildlife Trust, The Garden House, St Nicholas Park, Jubilee Road, Newcastle upon Tyne NE3 3XT. 7.30pm
Details from: Steve Pullan, MIEEM, 20 Holystone Drive, Holystone, Newcastle upon Tyne NE27 0DH.
Tel: 0191 2661769, Email: steve.pullan@virgin.net

8 November. A tree centred approach - the balance between the need of trees and woodlands and the need for new developments, Edinburgh.
Details from the Arboricultural Association Tel: 0131 469 3642

9 November. What is the future for the Community Woodland movement in Scotland? , Galloway, Dalbeattie.
Details from: Reforesting Scotland, 62-66 Newhaven Road, Edinburgh, EH6 5QB. Tel: 0131 544 4321, Fax: 0131 554 0088
E-mail: info@reforestingscotland.org.

15 November. Research Update, Institute of Chartered Foresters, The Marston Vale Forest Centre, Nr J13, M1
Details from: Alan Riley, 4 Rathbone Close,Crownhill,Milton Keynes, MK8 0DT. Tel: 01908 307148, Email: alanrileymicfor@aol.com

28 November. Lecture: Science, the natural world and public opinion: are we in crisis? Lord May of Oxford, Central Hall, The Natural History Museum, 19.30. Tickets from Natural History Museum Box Office.
Tel: 020 7942 5555.

29 November. Living with Protected Species-Obligations and Opportunities, Belgrave Square, London - CIWEM Conference.
Details from: Terrence Dalton Ltd, 47 Water Street, Lavenham, Suffolk CO10 9RN. Tel: 01787 249290, Fax 01787 248267
Email: barney@lavenhamgroup.co.uk

28 & 29 November. IEEM Annual Conference and AGM - Getting Wet! Ecological challenges in marine, estuarine and river environments.
Location: Torquay
Details and Booking Forms available from IEEM Office.

4-5 December. Atlantic Frontier Environment Network - Managing the Resources of the Atlantic Margin - A sustainable Future?
Details from Bob Earll Tel/ Fax ; 01531 890415,
Email: bob.earll@dial.pipex.com

18-20 December. Annual BES Winter Meeting, University of Warwick.
Details from: BES, 26 Blades Court, Deodar Road, Putney, London SW15 2NU . Tel: 020 8871 9797, Fax 0208871 9779
Email general@ecology.demon.co.uk http://www.demon.co.uk/bes

9 January 2002. IEEM NorthEast Section, Ecological Assessment - Dr David Hill, President, IEEM
Durham Wildlife Trust, Rainton Meadows, Chilton Moor, Houghton-le-Spring Durham DH4 6PU 7.30pm.
Details from: Steve Pullan, MIEEM 20 Holystone Drive, Holystone, Newcastle upon Tyne NE27 0DH.
Tel: 0191 2661769 Email: steve.pullan@virgin.net

22nd January 2002 Restoration of Limestone Quarries by Landform Simulation and Restoration Blasting, The University of Sheffield
Details from: ECUS, 343 Fulwood Road, Sheffield S10 3BQ
Tel: 0114 2669292
Email: ecus@sheffield.ac.uk Web:http://www.ECUSLtd.co.uk

6 March 2002 IEEM NorthEast Section, Regeneration of industrial sites: 30 years on, what lessons can be learnt
- Dr David Mitchell, MIEEM
The Rising Sun Countryside Centre, North Tyneside 2.00pm
Details from: Steve Pullan, MIEEM, 20 Holystone Drive, Holystone, Newcastle upon Tyne NE27 0DH.
Tel: 0191 2661769, Email: steve.pullan@virgin.net

11 April 2002, Aspects of Urban Ecology (Provisional topic)
Location: Birmingham Botanical Gardens
Details and Booking Forms available later from IEEM Office.