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IEEM Fellows Lecture
MITIGATING CIRCUMSTANCES:
What will we leave behind?

Dr David Hill, FIEEM

Introduction

As professional ecologists, many of us spend a considerable amount of time advising on and designing mitigation for development related impacts and indeed, the theme of this conference is about three facets of mitigation – Restoration, Re-introduction and Translocation. But are we succeeding? Are our mitigation schemes providing a long-term future for wildlife? Or are we simply plastering over cracks and adding to a continual decline in the biodiversity resource? We focus on each project at each site at the particular moment in time. How often do we take a broader view – aiming to provide something of lasting value, taking account of how landscapes and ecological resources have changed over the years, even centuries? If we did, could we refocus mitigation to deliver more worthwhile solutions for future generations. Is it not true that as we grow older we appreciate the value of leaving behind something of lasting value? Perhaps we can learn something from our historical past which can inform how we plan for the future.

The main thrust of this paper is about 'thinking big', looking for an alternative approach to mitigation and compensation delivery – one which is successful. I shall firstly give a brief historical perspective (simply because it interests me and will hopefully interest others), followed by a review of the basic status of the ecological resource in the UK. I then describe the term mitigation as it applies to the planning and development control process with which many of us are involved. Finally, I consider one alternative approach which could, with some creative thought, help to substantially improve how we accommodate biodiversity within development so as to make a lasting contribution across the wider countryside.

Products of change

Landscapes and biodiversity have changed much over the centuries. From the time of the receding ice sheets over 8000 years ago, biodiversity has been modified by man and has generally declined to its present, relatively impoverished state today as a result of factors such as forest clearance, hunting persecution, urbanisation, industrialisation, farming intensification and the resultant pollution of an expanding human population. In 1166 Henry II wrote the following words…

'Everywhere outside the houses…are the spacious and beautiful gardens of the citizens. On the north side there are pastures and pleasant meadow lands through which flow streams wherein the turning of millwheels makes a cheerful sound. Very near lies a great forest in which there are the lairs of stags, fallow deer, wild boars and bulls. There on the north side are excellent wells with sweet, wholesome water … among these are Holywell, Clerkenwell and St Clement's well'.

I find it both extraordinary and shocking that he was of course talking about London. The place he described then is unrecognisable now and of course our values and perceptions have changed considerably since that time. It is difficult to appreciate the richness of wildlife that almost certainly inhabited Britain at that time. Through the intervening years, many factors have taken their toll on wildlife. The industrial revolution, which created sprawling towns choked with smoke (Figure 1) contrasted with farmland where high densities of farmland birds existed until the mid 20th century advent of herbicides, insecticides, fungicides and industrial farming methods. Landscapes can change slowly. An 1897 photograph of the land around the village where I live, Muker in Swaledale, reveals a landscape scoured by lead mining and the clearance of trees for fuel (Figure 2). Today, however, despite substantial overgrazing on the hillsides and moor, the valley is richer in vegetation diversity. Even so, Corncrakes have disappeared as a result of changed farming methods.

Figure 1. Towns grown from the industrial revolution portray a Britain where mitigation for wildlife impacts would not have been a consideration.

The changes which took place between the 1930's and the present have probably seen the greatest man-induced impacts on biodiversity for centuries. The scene is aptly portrayed by two drawings by Roger McPhail. In one, the young man surveys a rich farming landscape of copses, hedges, ponds, partridge coveys, mixed farming, small fields – the idyllic pastoral scene. As an old man, the hedges have gone, the fields are large, the crops monoculture, the trees have died and the only birds are corvids! (Figure 3). It is this landscape with which most of us are now familiar and which typifies many sites on which impact assessments are carried out. My point is this – the context in which

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Editorial

As I begin my period in office as the new President, there's a chance for me to briefly look back, and then forward to what I am convinced will be an increasingly important period in both the profession's and the Institute's progress. Looking back then, this is an opportunity to thank our outgoing president, Sue Bell for all her hard work in taking IEEM forward. As I was able to reflect at our AGM dinner, she had impressed all who worked with her by her quiet efficiency and enthusiasm, while at the same time presiding over a period that has seen huge gains for the Institute, both in membership and influence.

Critical to our ongoing drive to get ecology and environmental management seen by all as a serious profession in its own right, has been the successful establishment of the Society for the Environment, in which IEEM, and particularly Alex Tait and Jim Thompson and now Tim Bines as Chief Executive have played such an important role. We look forward to helping it grow and I encourage all IEEM members to take the opportunity to join.

The recent conference in Southport was a great success, not least I think because it focussed on a topical issue of relevance to all areas of our membership. Indeed that, I believe is one of IEEM's strengths; that we appeal to and encompass folk from a wide spectrum - local authorities, statutory agencies, consultancies, NGOs, etc. There are huge opportunities for learning from each other at such conferences, as I also witnessed recently at a site meeting of the IEEM Northeast branch looking at practical issues with great crested newts. As with my experience of attending the IEEM visit to the coastal managed retreat project at Nigg Bay (incorporated alongside the Scottish branch's AGM), there is huge value to be gained from exchanging experiences on the ground. This is undoubtedly one of the major strengths of the branches, and I will be in Ireland in January discussing possible formation of a branch there as well.

Finally, I was interested to see the results of the recent MORI poll on who the public trust to tell the truth. Scientists were only trusted by 65% of those interviewed. Perhaps more encouragingly, top of the poll were doctors (91%) and teachers (87%), with professors at 74%. Further down came civil servants (46%) with government ministers on 20% and politicians generally bringing up the list at only18%! Trust of course is something that has to be earned, but is closely linked to professionalism. At a time when the role of science is under critical attention from the media, the public and politicians, following the debacles around Foot and Mouth, BSE, GMOs , MMR and others issues, we need to re-establish this trust with our profession. There is an urgent need for clear, sound science to be placed at the centre of decision making, something in which we in IEEM have a key role to play.

Dr. Chris. J. Spray MBE

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 2004/2005

British Ecological Society
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a site is investigated in respect of impacts, and hence the mitigation which is considered necessary, fundamentally determines our view and our ability to think creatively. If a landscape is poor and impoverished to start with, mitigation is rarely used to improve what is currently there. As a result we never succeed in raising the stakes, in providing improvements. The small pond within a housing development might create excellent habitat for shopping trolleys and old tyres but does very little to improve biodiversity at a landscape scale. We should surely be aiming higher than this.

Figure 2. The village of Muker, Swaledale taken in 1897 (top) and 2004 showing the slow change from a denuded landscape ravaged by lead mining to one that is now an AONB and the moorland tops a Special Protection Area for birds.

The legacy of the failure to mitigate for the land use changes of the past are evident from statistics on the biodiversity resource. Since the second world war Britain has lost 50% of its ancient lowland woodland, 150,000 miles of hedgerows, 95% of traditional hay meadows, 80% of chalk downland and 80% of wetland fens and mires. Five species of wildflower are lost per county every 10 years, five species of butterfly have become extinct since the 19th century, 500 species of invertebrate are classed as endangered, most species of amphibians are in decline, eight of the 16 bat species in the UK are now endangered or rare, and since the 1970's some 52% of Song Thrushes, 54% of Skylarks, 94% of Tree Sparrows, 87% of Starlings and 89% of Corn Buntings have been lost (Hill et al in press; Eaton 2004). Alongside these declines, 42% of the 1 million or so hectares of SSSI's are considered to be in Unfavourable Condition, as are 69% of rivers and streams, 65% of upland grassland and heaths, 35% of fen, marsh and swamp, and 33% of lowland broadleaved woodland (Everett 2004). If we ran a business as we run biodiversity conservation, we would have been bankrupt years ago.

Scope for mitigation

Essentially, three scales of biodiversity impacts can be defined. First, climatic impacts such as occur during ice ages affect biodiversity at a global scale. Below this, wider land-use/man-induced impacts operate at a country or regional scale. Below this still, are the development-related impacts, the type with which we are most familiar and where we spend most of our fee-earning time. These scales are diagrammatically illustrated in Figure 4. We have different scales of policies to attempt to mitigate for each of these impacts – global policies such as Kyoto etc., agri-environment, structure fund, and regulations to tackle wider land-use impacts such as agricultural, forestry and water resources, and finally local and structure plans through the development and planning control process to deal with development-related impacts. It is sometimes surprising to realise that most of the UK is rural (see Figure 5) and urbanisation hasn't made massive inroads into the 'greenscape'. However, this hides the pervasive impacts of the Common Agricultural Policy and the intensification of farming across the land as evidenced by the decline in farmland birds described earlier. Nonetheless, it is clear that there is a lot of scope for country-wide mitigation and compensation (these terms are often used interchangeably) in the UK through the restoration of degraded habitats, the reversing of unfavourable condition, the creation of new habitats within the greenscape, and linking with countryside-scale policies aiming to improve biodiversity in the wider environment.

Figure 3. These drawings by Roger McPhail aptly portray the dramatic change in a farming landscape as experienced by one man in his lifetime from the 1930's to 1990's.

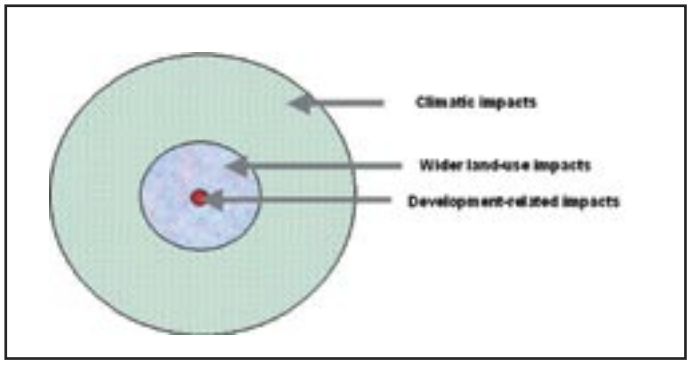

Figure 4. Schematic representation of three scales of biodiversity impact.

Ecological mitigation is defined as 'any deliberate action taken to alleviate adverse effects, whether by controlling the sources of impacts, or the exposure of ecological receptors to them'. Under UK legislation, proponents of development are required only to recommend suitable mitigation measures, not to demonstrate that they can and will be undertaken. Government guidance currently does little other than to suggest that 'where significant adverse effects are identified, a description of the measures taken to avoid, reduce or remedy those effects should be produced'. However, there are major failings in the system – resources for enforcement are inadequate or non-existent and insufficient detail is produced to enable proper judgement to be made as to the likelihood of success. Full detailed mitigation schemes should be submitted at the time of planning application submission.

Figure 5. Satellite derived image showing the relatively small area of land covered by urbanisation in the UK.

These ongoing inadequacies in the planning system have produced a catalogue of failure. Treweek & Thompson (1997) reviewed 194 Environmental Statements during the period 1988-93. In 20% ecology was not mentioned and 66% referred only to 'habitat loss'. Only 11% recommended mitigation but only 3% actually suggested the moving of the development away from the important ecological resource. Screening and landscaping were most often cited as the means of mitigation and only 3% of schemes referred to a mitigation management plan. Treweek (2000) reviewed the position again and found that there continued to be a failure to analyse impacts beyond the site boundary, to quantify ecological impacts at all, to identify and measure cumulative effects and to mitigate important impacts. By and large schemes were considered inadequate because no monitoring was proposed or undertaken, there was no follow up once the development started and there was a serious lack of enforcement by the planning authorities and statutory agencies. Scope for improving the way mitigation is identified, planned and executed is therefore enormous. In terms of the wider countryside however, the task of stitching back its fabric is massive. Under present Countryside Stewardship grants for example, 30,000 farmers received £150 million with a further £150 million or thereabouts being available under the new rules. But, whilst it has provided some welcome gains, each farmer can do little with £5,000 when the cost of restoring the above habitats alone would fall into billions of pounds.

Mitigation types and issues

There is a range of mitigation measures that are seen as solutions, many examples of which are given in these proceedings. They include avoidance of the site of ecological interest through sensitive design, siting of the scheme, avoiding key areas and key periods (e.g. bird breeding season), reduction, moderation, minimisation using for example noise barriers, oil interceptors, screens, controlled access during construction/operation, wildlife bridges, tunnels, 'ecoducts', fences, rescue (relocation and translocation), repair (reinstatement, restoration) and finally compensation.

Taking three of these areas, avoidance, translocation and compensation, the work of Treweek & Thompson (1997) found that the designation of a site did not deter development proposals nor did it trigger avoidance measures. If scoped early, however, a project can avoid impacts on sites of nature conservation interest/importance (as is undertaken in the Netherlands). Attention to siting and design needs to occur at the very being of the planning stage of a development since the ecologist can advise on these factors early on. However, in practice any such modifications to a scheme usually occur after the design stage when major changes are then too expensive to implement. The ecologist is then only paying lip service to ecological value. Translocation is rarely shown to be 100% effective and in general the relative condition and siting of the donor and recipient site is crucial to success, soils, hydrology, management commitment and continuity being the most vital components, with wetter communities being more difficult to translocate than drier communities. Finally, compensation measures are generally considered where mitigation has a significant risk of failing to produce insignificant residual impacts. Under the Article 6 assessment process of the Habitats Directive (92/43/EEC) for example, compensation is a measure of last resort if there are no alternatives to the plan or project and if there are demonstrable imperative reasons of overriding public interest. The problem with compensation is that it may not provide like-for-like (witness the provision of inland wetland on the Gwent Levels as compensation for the loss of intertidal habitat at Cardiff Bay), it can be difficult to deliver because of a lack of knowledge of the structure and function of habitats/species, compensation sites may be ecologically dysfunctional compared to natural sites and the time taken to mature can influence their ecological value in the long-term.

Within ES's however, there is often a mismatch between the identified impacts and the proposed mitigation – e.g. the promotion of landscaping and tree planting rather than avoidance in the first place. A development often starts with the presumption that the development will go ahead at the location identified without considering ecological impacts first. Proposed mitigation measures are often cosmetic using untried untested methods and approaches. The adverse impacts usually remain and there is too much emphasis on providing an engineering solution without first understanding the ecology. There is almost never a controlled experiment to test ideas, there is always insufficient time provided for mitigation to get up to speed and changes in personnel – developer or consultant – can jeopardise the scheme being delivered.

As a bare minimum mitigation assessments should state which impacts, their magnitude and significance, are to be mitigated. Detail

and more rigour in the analytical approach should be provided where protected species or designated sites are potentially affected. The mitigation solution should incorporate tried and tested methods and the residual impact, ie. that impact remaining after mitigation has been implemented, should be estimated and tested for significance. There should be contingency measures in place should the mitigation fail and there should be a proper route of enforcement, monitoring, feedback and restorative action. The above should be incorporated into a Mitigation Plan, comprising a statement of objectives, assessment of features lost compared to those that will be replaced, a detailed description of actions such as timing of construction, methods, erection and type of screening and planting, and a monitoring and maintenance plan. The Mitigation Plan should be submitted as part of the planning application otherwise there is no means by which to assess the likelihood of success of the mitigation on which a planning permission depends. Similarly, if the compensation route has to be followed, success will depend on a narrow range of objectives, substrate condition, hydrology, long-term and flexible guaranteed finance, a management plan and management commitment, and a feedback mechanism to ensure restorative action is undertaken if problems arise.

A Different Approach – Mitigation Banking

In my view we spend a substantial amount of money in the UK on poorly designed mitigation schemes, on too small a scale, in the wrong places, with untried and untested methods, on insecure sites, based on inadequate research, without an appreciation of historical context and potential, with insufficient funds and no management commitment. The results are therefore hardly surprising. Of course there are exceptions and it isn't all doom and gloom, but when I asked a number of ecologists to point me to successful mitigation schemes of a reasonable scale, none came forward. After 20 or so years of work in this area, this is more than disappointing. An alternative could be to investigate the nation-wide application of Mitigation Banking (MB) as a means of delivering mitigation and compensation schemes at a scale appropriate to improving the biodiversity benefits and under a more regulated and consistent framework which developers can understand.

The term arose in the United States in relation to wetlands (Treweek 1999) defined as 'the restoration, creation, enhancement and (in exceptional circumstances) preservation of wetlands and/or other aquatic resources, expressly for the purpose of providing compensatory mitigation in advance of authorised impacts to similar resources'. A Mitigation Bank is not really a bank but an entity that restores, creates, enhances or preserves a wetland habitat. The entity sells tangible units of wetland termed credits, to a developer for compensation for equivalent units that a developer has destroyed, termed debits. The advantages of MB are that large, ecologically superior and robust wetlands can be and have been created; there are economies of scale through structured and efficient habitat regulation which encourages watershed-based wetland planning; and other habitats such as woodlands, forests, heaths, moors and grasslands can also be provided, managed or restored by MB. In the US Mitigation Banking is a thriving industry and the early problems of poor design, bad engineering and hydrology have now been largely resolved. In the UK there is no industry as yet since such mitigation is not yet required by law. The key conservation laws in the UK are implemented on a piecemeal basis through seeking to inhibit development. However, there are signs that English Nature may look more favourably on such an innovative approach particularly where a proponent has demonstrated that the development has no alternatives and that there are imperative reasons of overriding public interest.

Most recently, a number of port schemes have come to the fore involving the loss of intertidal mud or saltmarsh habitat. At the same time there is concern over the long-term provision of sea defences, especially along the east and south-east coasts of Britain, and the terms managed realignment or managed coastal retreat have become common. One example has been the requirement for channel deepening of 2m to accommodate larger ships at Felixstowe docks which would alter tidal propagation and reduce tidal range with the acceleration of erosion of the intertidal area as a result of additional maintenance dredging (Figure 6). The solution has been to retain 10% of the silt in the system by sediment feeding and the creation of 16.5ha of intertidal habitat on farmland at Trimley through managed realignment of the seawall, to replace the same area lost. Monitoring has shown that sediment recycling is in place and the Trimley realignment has been almost immediately successful.

Similarly, at Bathside Bay, proposals have been put forward for the provision of replacement habitat for 70ha of intertidal mud which would be lost through a port development. A ratio of 1:1.7 has been achieved (ie. for every ha lost, 1.7ha will be provided) at Little Oakley some 5km from Bathside Bay but adjacent to the next door SPA at Hamford Water.

Both of these schemes and many more besides would lend themselves well to the concept of Mitigation Banking particularly if we can overcome the political boundary issues associated with potentially locating the mitigation/ compensation habitat some distance from the site of impact. We can draw two conclusions from the port scheme examples – (1) mitigation/ compensation can be shown to work where the habitat affected or to be replaced is a relatively simple wetland such as an intertidal area or estuary, (2) systems based on a high biomass of relatively species poor prey (for waterfowl on which estuary SPA's are largely based) are capable of easier replication since their response time is relatively short compared to many other ecosystems.

The key issues for MB in respect of providing compensation habitats involve no net loss, being consistent about what is being created and what is being replaced, accepting it as a last resort measure when all feasible mitigation has been undertaken on site, the appropriate compensation ratio (which should be greater for more complex habitats or when adopting the precautionary principle), the habitat should be created and provided before that which it replaces is lost, being realistic about habitat creation and understanding the problems of scientific uncertainty.

Figure 6. Felixstowe docks

Mitigation Banking could also be used in association with multiple schemes where developers club together to contribute towards a fund. We might envisage, for example, the creation of major large-scale great crested newt reserves in different regions of the country which would make a greater contribution to newt conservation than is currently capable under present legislation. Further, Defra has identified that 200ha per year of habitat creation is needed in order to maintain the coherence of the Natura 2000 network as a result of sea-level rise. Within

Figure 6a. Provision of compensation habitat at Trimley (courtesy of C Gibson, English Nature)

100 years the sea defences along the north Norfolk coast are likely to be unsustainable, providing the potential to create approximately 6500 ha of freshwater, brackish and saline habitat through major realignment of the defences and remnant dune system, forming a new tidal delta. Mitigation Banking could in future contribute to such schemes.

New environmental stewardship schemes could also link into Mitigation Banks, enabling greater biodiversity gains. Companies could establish their own stewardship arrangements with local communities to help stitch back the fabric of the countryside that has become so eroded.

Finally, one of the most important aspects for a developer is being able to know the bottom line cost. He is far happier with a known cost predicted for the term of a mitigation project, because he can roll this cost in as capital at the beginning of a scheme. By contrast he dislikes uncertainty which can lead to escalating costs and no exit strategy. Controversially, such a fund might best be provided through a 'development tax' tailored to the scheme and related to the full mitigation costs. Mitigation Banking offers greater fixed certainty to developers and the funds established could simply take on the job of delivering the mitigation using contracted professionals, leaving the developer to do what he does best. This would give more security to the environment, would provide bigger and better schemes, and could be linked into other funding mechanisms thereby giving greater value for money. Without doubt many schemes would not warrant such an approach – the small urban scheme where delivery to local people is important. But it is surely not beyond our capability to devise a process whereby Mitigation Banking could be made to work, particularly for large developments where on-site mitigation will almost certainly fail, if history is anything to go by. Lets try and think big.

Summary

This paper has reviewed mitigation provision in the context of continual changes in landscape and biodiversity. Mitigation is defined. Successes to date are few as a result of a variety of factors notably poor design, ecological inputs being made too late and after the design stage, lack of tried and tested methods, lack of resources and management commitment by the developer, lack of monitoring and feedback and lack of enforcement by planning authorities and statutory agencies.

Some solutions are provided. These include early design input, putting ecology before the engineering solution, demonstrating that measures can and will be achieved by producing a detailed Mitigation Plan at the time of submission of the planning application rather than leaving it until post-permission. Proper enforcement linked to monitoring and feedback is essential as is a better scientific basis for decisions. Government should fund an analysis of ES's with follow up in the field to measure successes and failures, identifying reasons for both. Government should also require results of monitoring to be available on an Ecology and Developments website so that everyone has access to information. Finally, the process and mechanism of Mitigation Banking should be explored as a way of dealing with often intractable and undeliverable mitigation issues so as to vastly improve success and provide a more creative way of contributing to biodiversity conservation beyond simply the boundary of the site. The controversial but attractive option of a 'development tax' which would provide the funds to a Mitigation Bank as well as certainty and overall lower cost to the developer, is briefly described. The new planning rules make this an even more attractive option.

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Professional Ecologists in Ireland

Richard Nairn, MIEEM and Karl Partridge, MIEEM

As in the UK, ecology is a young profession in the Republic of Ireland and there are still relatively few who would call themselves professional ecologists. They are mostly employed in the third level education sector, in government agencies, voluntary organisations and in consultancy. The main central government employer is the National Parks & Wildlife Service (NPWS), which is now part of the Department of the Environment, Heritage and Local Government. There are both research and management sections of the NPWS. The management section has at least one professional ecologist attached to each of the four regional divisions, in addition to Conservation Rangers and other regional management staff, many of whom are ecologists. The regional fisheries boards, the state forestry organisation Coillte, Marine Institute, Bord na Mona and the Heritage Council also employ ecologists and environmental managers. Several of the voluntary organisations have professional ecologists on their staffs. The largest of these is Bird Watch Ireland (a Birdlife International partner), which has a permanent staff of about ten, in addition to seasonal staff. A new breed of professional ecologist has evolved recently in the form of some of the Heritage Officers in the local authorities.

In Northern Ireland, the number of consultant ecologists is also growing but the majority of professional ecologists still work for Environment and Heritage Service (EHS) with smaller numbers in the conservation bodies (RSPB/Ulster Wildlife Trust/National Trust), the Ulster Museum and in academia. There is obviously great potential to recruit many of these to IEEM membership.

Over recent years, opportunities for consultant ecologists have expanded considerably in response to legal obligations to comply with EU directives and to the demand for professional advice and input to environmental impact assessments and other aspects of the planning system. In the Republic, the National Development Plan 2000-2006, with its emphasis on improving the infrastructure in Ireland, has brought a new wave of ecological activity to ensure that all the new developments avoid or minimise ecological impacts and are designed in an environmentally sensitive manner. Some of the more experienced ecologists have moved on from ecological planning and design to supervising the construction work on the ground and ensuring that ecological mitigation is carried through during project implementation.

There is also a demand for ecologists to interpret EIS reports. Some of the state agencies, such as the National Roads Authority, have commissioned best practice guidelines on ecological assessment and on various aspects such as the treatment of bats, badgers, trees and watercourses in road schemes.

In Northern Ireland, there is a growing amount of ecological work generated by EU Directives (EIA, Habitats, Birds Directives), biodiversity initiatives, and the increasing scrutiny required of development schemes. Economic growth following from the 'peace process' and developing infrastructural needs have created a strong demand for specialist ecological expertise, although the status of ecologists is still lagging behind that of other professionals such as landscape architects, planners or engineers. While this has provided a steady stream of work for ecological consultants, ecologists working in the statutory agencies and conservation organisations have found themselves under increasing pressure and there is clearly a need here for increased human resources. The inadequacies of the current structures, under which Northern Ireland's environment is protected, was highlighted recently by the Macrory Report*. A follow-up consultation exercise showed that there was a clear preference amongst environmental NGOs and others for the creation of an independent Environmental Authority to take over the role of EHS.

Some of the topics mentioned above will be discussed at a seminar on "Roads and Ecology: Towards Best Practice", to be held on 20th January 2005 in the Burlington Hotel, Dublin 4. Organised jointly by the IEEM and the Institution of Engineers in Ireland, the seminar is open to all interested professionals and further details can be found on the websites www.iei.ie or www.ieem.org.uk. On the same day, 20th January, from 4.30pm to 5.30pm, an open meeting for all IEEM members will be held at the Burlington Hotel, to discuss the possibility of starting an Irish section of the Institute. It is hoped that this meeting will involve ecologists and environmental managers from both the Republic and from Northern Ireland. The Institute's commitment to expanding the membership in Ireland is reflected in the attendance at this meeting, which will include Dr Chris Spray, IEEM President; Dr Jim Thompson, Executive Director; Kathy Dale, Convenor of the Scottish Section; and Dr Jenny Neff, from Ireland, who was recently elected to the Council of IEEM. Together they will help by answering any questions, which members have about the functions of a regional section of the Institute. If an Irish Section does become a reality, it will have a primary objective (as does the parent IEEM) in raising the standards and profile of the profession of ecology and environmental management. It will also help professional ecologists to keep in touch with each other and with their counterparts in the UK and further afield.

Reference

* Professor Richard Macrory (2004). Transparency and Trust: Reshaping Environmental Governance in Northern Ireland. Centre for Law and the Environment, University College, London).

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IEEM Scottish Section Open Day: Integrated Coastal Zone Management in Scotland Thursday 7th October 2004

Sally Monks, MIEEM

This year's Scottish Section conference was held on 7th October at Nigg Village Hall, Nigg. Where, you ask? Nigg is a small village on the east coast of Sutherland just west of Nigg Bay, within the beautiful Cromarty Firth. This isolated location set the scene perfectly for the day's topic and attracted an impressive 35 delegates.

Aerial view of Nigg Managed Realignment Site
Photo: RSPB Scotland

Once settled into the village hall, we were welcomed by Dr Chris Spray, then President Elect of IEEM and Director of Environmental Science at SEPA. Chris was delighted with the attendance and the increasing strength of the Scottish Section, it having hosted a number of successful events and training courses over the years. He introduced the day's topic of Integrated Coastal Zone Management in Scotland and the benefits that it can bring. An impressive line up of speakers was introduced by Kathy Dale, Convenor of the Scottish Section.

The first talk was presented by George Lees, SNH Maritime Group Manager, who provided an overview of sea level rise in Scotland and how managed realignment can help tackle the problems associated with it. George explained the history of Scotland's coastal management, with a third of the country's saltmarsh having been reclaimed as farmland, and how this has necessitated hard sea defences. This interference with natural coastal processes has caused problems such as impacts on the functions of the estuary further upstream and coastal squeeze, which erodes the saltmarsh habitat. One way to combat this erosion is by managed realignment of reclaimed land, where the existing sea wall is breached, letting the land behind it flood, and a new sea wall constructed further inland. Not only can this restore the natural processes, but also the valuable saltmarsh habitat. George finally described the challenges faced with putting this into practice, such as at Skinflats in the Forth Estuary. There are many issues to consider, including loss of farmland and flood risk against the benefits of sea defence and wildlife habitat gain.

Stephen Midgeley, Scottish Coastal Forum Project Officer, then introduced us to the Scottish Coastal Strategy. This was developed by several member organisations to create a national strategy for the sustainable use of Scotland's coast and inshore waters. The aims are to take stock of the resources and key management issues and then look beyond the short term to develop an influential vision based on a 25-year forward view. There has been wide consultation including all the key stakeholder groups, culminating in the production of the strategy in July 2004. There are three accompanying practical implementation plans, 'Strategic Framework for the Marine Environment', 'Inshore Fisheries Strategy' and the 'Strategic Framework for Scottish Aquaculture'. For more information, log on to http://www.scotland.gov.uk/library5/environment/ssciw-00.asp

The next talk was on the local strategy for the Moray Firth, presented by Peter Tilbrook of the Moray Firth Partnership (http://www.morayfirth-partnership.org). The Partnership was established in 1996 to provide a forum to share information, discuss, plan and implement integrated ways of addressing issues arising from the many competing demands on the Moray Firth. It is a voluntary coalition of a wide range of organisations and individuals with over 620 members, a limited company and a Scottish charity. The aim of the strategy is to establish integrated management for the area, encompassing the environment, economy, cultural and social aspects. It is a forum for communication to achieve integrated management of the Moray Firth, a Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR) and candidate Special Area of Conservation (cSAC). The area includes 800km of coastline within three council areas, Highland, Moray and Aberdeenshire, with a population of 226,000. It supports a rich and diverse wildlife, and was designated a cSAC for its famous dolphins! It also has numerous opportunities in the fisheries, oil and renewable energy industries. The Partnership has undertaken a Cromarty Firth data project, which aims to make the existing information more available to the public by pulling Cromarty Firth related information together and providing details on where to get hold of the data. Information is given on a wide range of datasets and environmental reports from statutory monitoring data collated to comply with various European Directives and nature conservation designations, to research reports on marine mammals and wetland bird surveys.

The main reason for holding the conference in Nigg was to learn about and visit the local coastal realignment project, on which Kenna Chisholm of RSPB Scotland gave an enthusiastic and informative talk. Nigg Bay is managed by the RSPB for its wildfowl and waders as part of the Cromarty Firth SPA/Ramsar site. This is Scotland's first coastal realignment project and it aims to demonstrate and develop techniques to combat the effects of sea level rise and the consequent effects on flood defence, wildlife habitat, farmland and the coastal community. The existing sea wall was breached in two places in 2003 to allow previously reclaimed and drained farmland to be flooded. It has been a great success, even in its first year, and is well on the way to becoming new mudflat and saltmarsh habitat. We were able to experience the project on the ground (at low tide!) in our afternoon excursion (see below).

There then followed an interesting discussion on the topics covered by the morning's talks. This was hosted by Scot Mathieson, SEPA's Conservation Advisor. Issues raised included the economics associated with this type of scheme and the need to work with farmers, landowners and local communities to develop a satisfactory solution. Education will be the key to implementing these re-alignment schemes in Scotland. Other areas should be identified where this type of coastal management could be successful and research is required on what other benefits can

be gained from such a scheme. The Scottish Executive has a budget set aside for flood defences and opportunities should be sought as to how to capture some of this for soft engineering options.

As delegates finished off their warming lunch in the hall, the sixth Scottish Section Annual General Meeting was convened. All the usual business was covered including the election of Committee Positions. Most notably, Christine Welsh has done a fantastic job as Secretary for the past three years and graciously passes this responsibility on to Karen Wright. Chris Spray gave a report on the activities of IEEM in the UK and announced the launch of the Irish Section in January 2005. He is pleased that the Institute now has recognised Chartered status through the Society for the Environment, and encouraged members to apply. Kathy Dale reflected on the Scottish Committee's activities over the past year and outlined plans for the coming year.

Following the AGM, we set out on our excursion to Nigg Bay. The weather had been rather mixed that day, but we were lucky and it stayed dry in the afternoon. The bay is very impressive and it would have been nice to stay longer and explore its wildlife. We walked along the sea wall and saw the two areas that the wall had breached. It was fascinating to see how this worked and how the new area of mudflats and saltmarsh (*Salicornia spp.*) was forming behind. The early signs of its development are encouraging and it will hopefully become a successful test case for others to learn from. More information on the Nigg Bay Coastal Realignment Project can be found on http://www.rspb.org.uk

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'Restoration, Translocation and Re-introduction' IEEM Conference and AGM, Royal Clifton, Southport 9 – 11 November 2004

Pam Nolan, MIEEM and Paul Rooney, MIEEM

The subject matter and coastal location proved to be popular with delegates, if the numbers attending the Institute's 20th Conference at Southport in Merseyside, were anything to go by. Over 250 delegates and 18 speakers participated, making it the most successful Conference to date for the Institute. This year's theme stretched across the ecological and environmental management aspects of "Restoration, Re-Introduction and Translocation".

Events started on the Tuesday evening with a meeting to establish a north west section of the Institute. This was well attended by members from the region, along with a representative of the soon to be Irish section and Sue Bell as the outgoing IEEM President (did anyone else notice her smile when she announced herself as the 'outgoing President'?). Steve Pullen shared his experience of establishing a successful regional section in the north east. On the basis of his wise words a programme of field visits was agreed for the new north west section. Paul Rooney offered his services as section convenor. For more details of the NW section contact Paul at rooneyp@hope.ac.uk .

Sue Bell thanks David Hill

The Fellows Lecture was delivered by David Hill, FIEEM. David provided a reflective and thought provoking lecture called 'Mitigating Circumstances: what will we leave behind?' It took a landscape approach and included some beautiful images of his home ground in the Yorkshire Dales. The lecture was moving and well rounded, firmly based in personal and professional experience with a wide application for our profession. It set the scene for the whole event.

Wednesday began with a series of high level strategic presentations, covering first principles. Professor Tony Bradshaw gave an excellent start to the morning's presentations with his overview of the scientific principles of restoration, giving us all a welcome reminder of just why he has been a respected leader and champion of Restoration Ecology for so long. Penny Anderson, who organised last year's successful conference on Upland ecology, followed with an equally excellent, informative and practical overview of the principles of habitat translocation; a talk enhanced by her extensive knowledge and experience in this field of expertise. Patrick Osborne from Stirling University completed the trio of first-rate scene setters with his eloquent overview of the principles of re-introduction. Already there was a positive buzz from delegates and it was only the first coffee break of the first day!

Professor Tony Bradshaw – the opening talk

The next session provided insights into the world of economics and political instruments available to support IEEM professionals in our bid for sustainable restoration and management. The speakers in this session highlighted the importance of looking forward, adopting a visionary approach and thinking laterally for new approaches for securing a sustainable and ecologically sound future – a theme that was picked up in detail by some of the speakers and examples the following day.

Our Vice-President, Will Manley from the Royal Agricultural College, began the session by bringing some much needed clarity to the complexities, challenges and opportunities provided by CAP reform and the impact of the Haskins Review. A message and opportunity here for the IEEM in the future, was that there will be a need for more in-depth training and development of skills of the advisers charged with the forthcoming Rural Delivery.

Who would have thought that a talk entitled 'Landfill Tax and Aggregates Levy' could have been so exciting on the day, but it was thanks to Andy Tasker's lively and stimulating insight. The Wildlife Trusts (including Warwickshire where Andy is Chief Executive), have been very good at securing money from this source to benefit natural and local communities. When John Gummer, then Environment Secretary, first announced details of the Landfill Tax Credit Scheme in late 1995, little could he have known that in less than 10 years the scheme would deliver over £737M of funding available to support thousands of projects many benefiting biodiversity directly and indirectly.

However, the monetary success of the credit scheme has not been matched by corresponding increases in meeting the government's recycling targets and ENTRUST, (the Environmental Trust Scheme Regulatory Body) the body charged with approving and regulating the projects, appears to have been poor in promotion of the scheme (and its logo!!). Modified by the government in 2003, the scheme is under threat and the message from Andy is that it is vital that we continue to promote its uptake and use in our professional work. The Aggregates Levy Sustainability Fund, set up in April 2002, is an attempt to reduce our unsustainable demand for primary aggregates. It appears to have been to date a missed opportunity for habitat restoration and it needs our support and uptake.

David Collins, from Defra, took the theme of flood and coastal

management strategies and showed us how government policy can be successfully changed to a more sustainable approach. "Making Space for Water", Defra's recent strategy and consultation for flood and coastal management, pushes for sustainable solutions including protection of internationally important wildlife sites, managed realignment and the creation of replacement habitats where protection is unsustainable. However, as his talk illustrated, this is often a difficult and complex matter on the ground, not least because of the legal complexities of the EC Habitats Directive and its UK Regulations. David's clear message was that in this arena we must be bold for the future, have national vision, adopt a strategic approach and accept that designated sites will be different in the future

In the afternoon there were 6 contrasting field visits to local sites in the surrounding areas. As the local organisers of the conference we would like to give particular thanks to the leaders of the local trips for their professional contributions to an excellent conference. The visits and themes explored were:

1. Ainsdale Sand Dunes National Nature Reserve (English Nature) led by Lynne Collins. Ainsdale Sand Dunes National Nature Reserve totals 508 ha and forms part of the internationally important Sefton Coast dune system. The NNR is within a Ramsar site, a Special Protection Area (SPA), and the Sefton Coast candidate Special Area of Conservation (cSAC). Management activities on the site address three broad areas –
a) extending the area of open dune habitat through the removal of pine plantation from the seaward edge of the NNR;
b) maintaining and extending the area of fixed open dune by grazing with domestic stock;
c) progressively creating a more diverse structure within the remaining 115 ha pine plantation with associated benefits for wildlife.
This visit focused on the first two activities aiming to restore dune habitats. It also considered the particular challenge of the 'people element', a crucial aspect with restoration management on a high profile sites.

2. Woodvale Heath (Wildlife Trust for Lancashire, Manchester and North Merseyside) led by Fiona Robertson. Woodvale Heath was purchased from the Ministry of Defence by the Trust early in 2004. This is a significant achievement after more than 20 years of efforts by conservationists to secure the future of site as the largest single block of dune heath on the Sefton Coast dune system. Dune heath on the Sefton Coast contributes around 25% of the national total. The site is part of the Sefton Coast SSSI and is a cSAC. The visit addressed the particular challenges faced by the Trust, not only to restore the dune heath habitat but also to involve the local residents and ensure appropriate public use of a site that was until recently a closed military training area.

3. Martin Mere (The Wildfowl and Wetlands Trust) led by Pat Wisniewski. Martin Mere is internationally important for its numbers of ducks, geese and swans. These gather to form spectacular feeding flocks on seasonally flooded wetlands which enjoy SSSI/SPA and Ramsar status. Martin Mere was once part of an extensive mossland system on the south west Lancashire plain that is now pump drained and used for intensive agriculture. Delegates visited a former farm adjacent to Martin Mere and recently purchased by the Wildfowl and Wetlands Trust. The visit was concerned with the conversion of this area from potato and carrot fields to reedbeds and wet grassland. This project alone is expected to meet the requirements of the County LBAP for the recreation of c.30 ha of reedbed. Delegates discussed the main groundwork phase of the project completed to date.

4. National Wildflower Centre (Landlife) led by Richard Scott and Grant Luscombe. The Centre was established to promote the creation of new wildflower landscapes for people to enjoy and where wildlife can flourish and develop. With the emphasis on creative conservation and putting wildflowers back into Britain, the centre has seasonal wildflower demonstration areas, a working garden nursery, childrens' play area, exhibitions and interactive information about wildflowers. Although not in 'high season' for the spectacular and colourful wildflower displays, delegates enjoyed challenging discussions on the conference themes from a unique Landlife perspective. Come back again was the message!

5. Sustainable Flood management on the River Alt led by Phil Hunter, from Atkins on behalf of the Environment Agency. Before departing for site, Phil provided delegates with an informative presentation on the proposed scheme. The River Alt catchment covers part of urban Liverpool and rural West Lancashire. The lower reaches incorporate large areas of arable land, created from tidal marshland over the last 700 years, and are drained by a network of ditches and pumping stations. The whole area is defended from tidal and fluvial inundation by river and coastal embankments and a main pumping station capable of discharging the Alt at all stages of the tide. A catchment flood management and feasibility study have identified the key problems and a number of options for future sustainable flood management of the river and its catchment. The scheme is still at options appraisal stage, but one of the options under consideration is managed realignment, including creation of semi-natural wetland storage. The visit gave delegates the chance to see the nature of the river and its catchment . Most importantly, it provided an opportunity for informed debate and some new ideas, questions and comments on the day. The comments have been fed back to the Environment Agency's Project Manager, who has been very receptive and welcomed the opportunity to have this 'free' if brief professional input from 50 plus ecologists at this early stage. This outcome exemplifies the 'real world' connections of the conference and how the Institute influences practice in the profession.

6. Beach management on the Sefton Coast led by Stephen Birch and Graham Lymbery. This visit started with a presentation by Graham in the newly opened 'Eco-Centre', a striking building close to the beach complete with its own wind turbine. The presentation considered the topic of coastal change and appropriate management responses. Delegates were then treated to a guided tour of the new sea front promenade and the pier with its modern glass pavilion. Views across the wide expanses of beach were stunning, matched by a very pleasant and informative stroll around an impressive Southport seafront.

In search of the sea – Southport pier

Back at the warm Hotel, the AGM took place at the end of the afternoon and once again the messages from Sue Bell (with an ever widening smile present as the end of her term of office loomed large), Jim Thompson and Alex Tait were positive and welcoming. Membership numbers continue to rise and the increase in income has meant that IEEM can now recruit a Deputy Director to support Jim, Nick, Joel,

Anna and all the members. Chris Spray was welcomed in as the new President by Sue Bell, retiring President, who could now sit back and relax – her smile increased as the night wore on!

The President's reception and conference dinner followed the AGM and special guests included representatives from other professional institutes within the umbrella organisation of the Society for the Environment, the Association of Local Government Ecologists, local Universities, local government, the Environment Agency and the local Wildlife Trusts. The event had the curious feel of a large society wedding with the 'top table' layout, welcoming party line at the entrance, presents and speeches. The Ceilidh made a welcome return and it was great to see the positive recognition for all Sue's hard work over the past 2 years as President. Also for those retiring Council and Committee members, who have done so much over their past 10 years to help IEEM achieve and exceed its goals.

Hilary Ludlow thanked for PAC work

The second day moved from the principles and strategic level to the practical examples of restoration, translocation and re-introductions of species and habitats in the aquatic and terrestrial environments.

Martin Perrow, began the day with an overview of restoration work on the Norfolk Broads. He started by showing some romantic photographs of the Broads of yesteryear taken by Emerson in 1900. He then described how this once beautiful system was now mostly degraded, and in need of urgent action. Martin went on to describe his work to restore Barton Broad outlining both the successes and remaining challenges. His work showed practice firmly based in established ecological theory, and how this was a key to successful restoration. It was interesting to note how the achievement of the ideal was limited by practical considerations.

Stephen Worrall from the Environment Agency continued themes begun by David Collins on the previous day. At a previous IEEM Conference in Torquay, he had explained the rationale behind the EU LIFE-funded project he was then managing on Coastal Habitat Management Plans (CHaMPS); now 2 years on it was time to reflect on some of the post-project actions as a result of the project. Stephen's theme was very much on the need and role of Conservation, Communities and Common Sense if we are to succeed in the complex world of Coastal Restoration. Again the challenges of complying with the complexities of the relevant Regulations were highlighted.

Rounding up the session on aquatic habitats and moving the focus back to the north west region, Dermot Smith again from the Environment Agency (EA), gave an 'inspirational tourists' insight into marketing Biodiversity projects and the opportunities for securing Regional Development Agencies as partners for Flagship Projects. In this example, the NW Wetlands Project is a partnership project involving the EA, Northwest Development Agency, 3 Wildlife Trusts, RSPB, WWT and Groundwork Wigan. Its aim is to develop a network of wetlands within the NW Region. Each area will have new and/or restored sites that are ecologically viable and are linked to sustainable tourism and recreation networks and will provide additional jobs within the Region. Dermot's interesting take on the use of holiday slides from a safari to inspire the RDA to provide £200K worth of financial support was another example of using the ability to think laterally and have a Vision.

After coffee we were back on 'dry land' and Dante Munns from the RSPB provided an excellent overview of the decline and rise of the Dorset Heathlands, through the Project on these critical habitats. His "talk about it, then do it" approach was one that echoed through many of the talks of this Conference and in their case the Project has restored over 1200ha of heathland over the last 15 years. In this talk, the need to find more commercial interest and /or uses for some of the 'by products' of our proactive conservation and management work, was clear.

All of the speakers' presentations were good and as individual as they were, but the next speaker Nick Haycock brought a whole new dimension and technology to the event! Speaking about the grip blocking work he was advising the National Trust on, in the moorlands of their High Peak Estate in Derbyshire, he demonstrated the applications of state-of-the-art technology like LIDAR images, digital mapping techniques and modelling techniques to the complexities of management of this huge estate. This highlighted again the value of a cross-discipline approach to ecological problems and management solutions and the benefits of a new pair of eyes being brought to the table – in Nick's case those of a hydrologist and soil scientist.

From technological images to the harsh reality of working as a professional ecologist in the desert-like environment of Azerbaijan. Janet Swan demonstrated the practical challenges of working as an ecological consultant on habitat restoration on pipeline schemes. These included having your fence posts burnt and sand bags pinched by poor locals. In addition to providing an overview of some of the ecological considerations of pipeline work, Janet also provided an international twist to the thinking and challenged some of our cultural assumptions in ecological practice.

The final session of the morning continued the visionary theme, as David Stubbs gave us an early insight into the Restoration Plans associated with the 2012 London Olympic Bid. He made it clear that environmental sustainability was a compulsory part of the process and the fact that there was huge potential for regeneration on a huge scale on this scheme. The linking of sport to sustainable living is an interesting opportunity for IEEM to consider in the future. (PS – don't forget to vote London …. thanks for reminding us David)

After lunch, the theme then moved to Translocation and the strong links between man and his environment, wherever that environment might be or mean to him or her, were eloquently illustrated by Grant Luscombe of Landlife. His description of a creative conservation journey from Kirkby to Cornwall was inspirational and again the strong link between health and well-being and the environment were made clear. As a result of the wildflower planting in the hinterland of a Kirkby tower-block estate, 67% of respondents in a post-project survey stated that they went out more to that site – a powerful message indeed.

Next it was time for the charismatic water vole and its equally charismatic supporter, Derek Gow. Derek has over 10 years experience breeding, releasing and working with others to try to build up sustainable communities of these animals. His knowledge and insights into the ecology and habits of these animals was extensive and the development of sustainable water vole breeding stations fascinating!

Normally after the final coffee break, there is a marked reduction in the number of delegates but the promise of talks on re-introductions

of sand lizards, red kites and the proposed trial to bring back beavers to Scotland helped retain a good audience. We weren't disappointed as Chris Gleed-Owen, Ian Carter and Martin Gaywood took us on a journey from southern England to north Scotland and their presentations highlighted both the application of scientific principles to practical issues and also the need to trial and learn from the experience.

Ian Carter, for example, highlighted the importance of a good scientific knowledge and understanding to the success of re-introduction programmes – with the problems associated with the release of Barn Owls, for many years given as an example of what happens when this rigorous approach is not followed. As an example of tenacity in the face of adversity, Martin Gaywood's report back on SNH's long journey to trial the re-introduction of beaver into Scotland was as inspirational as it was frustrating for the individual and the enigmatic beaver waiting in the wings. The result of all the years of scientific research, evidence gathering and consultation culminated in an application for a licence in January 2002 to the Scottish Executive – nearly 3 years on, a decision is still awaited. Interestingly, when the public were consulted over 86% of them were in favour of the trial re-introduction. Hang in there, Martin!

In retrospect, it was a successful conference and clearly demonstrated the sustained interest and respect for the work of the IEEM and its members. The local press billed the conference as a "Mersey Nature Showcase" (Liverpool Echo and the Daily Post) and described us as some of the country's most respected environmentalists forming part of a huge national conference on ecology. Recognition indeed! No room for complacency though, as suggested in the closing words of the conference by Chris Spray our new President, quoting the immortal words of Kermit the Frog – " It's not easy being green".

Paul Rooney is a Senior Lecturer at Liverpool Hope University College. Pam Nolan is the National Ecoogy Manager for the Environment Agency.

EFAEP UPDATE

EFAEP held a General Assembly (GA) on the 1st December at Lafarge in Lyon which proved to be very successful. IEEM has developed a very important driving role within this organisation. At the moment it is the only member that has biodiversity at its core, and this is something that quickly needs to be remedied. Mike Barker, MIEEM, and Tim Bines, MIEEM, were members of a small task force, which addressed many burning issues from broadening the membership of EFAEP through to new products and services. Joerg Niehoff presented their findings and guided the GA towards some valuable decisions. IEEM would like to thank Mike Barker and Tim Bines for their hard work on the task force and Nicola French for attending the meeting at somewhat short notice.

Third IUCN World Conservation Congress, Bangkok.

Jim Thompson, MIEEM

This is the third occasion on which I have acted as delegate for IEEM at a major IUCN Meeting. The first was 4 years ago in Amman, Jordan. Last year the World Parks Congress took place in Durban.

Created in 1948, IUCN - The World Conservation Union brings together 81 States, 114 government agencies, 800 plus NGOs, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. IUCN's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

IEEM has been a member of IUCN since 1995 and participates regularly in the meetings of the UK section. Apart from many smaller meetings throughout the world, IUCN has a congress every 4 years. This is not to be confused with the World Parks Congress which occurs every 10 years and which is also organised by IUCN. Its remit is limited to issues surrounding protected areas. There were various recommendations from Durban which required ratification at an IUCN congress, this time at Bangkok.

The third IUCN World Conservation Congress was held in Bangkok on the themes of 'People and Nature – Only One World'. This is a huge city with a population of about 14 million people. It is dominated by high-rise buildings in the centre of the city, an enormous amount of traffic and, a good supply of polluted air. But it is certainly not without its attractions – the people, the food, the river and the many canals or khlongs and the temples are all to be savoured. As far as the meeting was concerned, there were about 5000 delegates which makes it in itself a truly impressive and massive gathering. There are so many strands to a meeting such as this that it is almost impossible for a single individual to get more than an overview and some opt to limit attention to one or two key issues. Fresh from our successful conference in Southport, I did wonder if there would ever be a day when IEEM would operate on this scale and what organising a conference of this size would be like!

Bangkok Skyline

I noticed towards the end of my stay that Bangkok is about to host the 6th congress on sustainable cities. It is hard to imagine that much more could have been added to the IUCN Congress but here perhaps was a missed opportunity not to link the two themes. The theme of the Congress – Many Voices, One Earth certainly encompassed the wider aspects of sustainability.

The IUCN is divided into various regions which have a worldwide basis and this time the European network was much more focussed. This was helped by the fact that the European Office of IUCN (ROFE) is now well established in Brussels with Tamas Marghescu as Director.

The European programme has 5 objectives with identified key result areas:

- Supporting IUCN in Europe and the EU
- Understanding the main drivers of biodiversity change
- Financing nature conservation
- Linking education, science policy and practice
- Managing our natural heritage

The British delegation was headed by Dr Andy Brown of English Nature and comprised about 20 individuals. Not necessarily high profile as a group, there are nonetheless several individuals who have made over the years and continue to make a very positive contribution to IUCN. The UK government is a significant donor to the tune of about 2.5 million Swiss Francs but the Netherlands tops the list with support of over 16 million Swiss Francs.

The protected areas system in Thailand is quite extensive and you can soon be in a National Park. There are in fact 103 of them with 45 to be designated in the near future. This will amount to about 14% of the total land area. The famed River Kwai and its railway go into one, the Erawan - 550 sq km - extensive bamboo thickets with a good sprinkling of high forest trees and some formidable creepers. The rainy season this year has been shorter than normal and I was quite surprised to see numerous forest fires. At the edge of the park, although much of the original high forest has been felled and replaced by secondary forest there are still areas with sufficient original trees to make quite an impression.

Bamboo Forest

Prior to the start of the congress proper, there was a European excursion to the Khao Yai National Park – 2165 sq km. This was a very useful day and an opportunity to meet with a number of colleagues and keep up to date. For most Europeans it was seen as an opportunity to get out of the City and walk in the high rainforest of this enormous park. Overseas delegates are expected to be transported in an air-conditioned bus rather than exposed to the rigours of the forest on foot so the promised 2 hour hike was somewhat shortened! There was a short ceremony to start at which there was a moment of silence for the rangers who had lost their lives in defending the park against wildlife poachers and illegal logging activities. I know that there are many rangers in the UK who can recount an encounter with a tricky customer but this is another dimension and emphasises just how important it is that trade in these

products should be controlled. Many of the rangers are routinely armed and the scene, though well intentioned and probably essential, had by European standards, a distinctly military feel.

The park has gone quite some way to cater for recreation with cabins, camping, hiking trails, canoeing and mountain biking trails. The park also supports populations of deer, monkeys, elephants and tigers although there was a distinct vagueness about the numbers in the last case. A number of us were able to see several hornbills in flight. A charge was made for the excursion which included a donation to be made to the National Park to help with the visitor centre.

The start of the Congress was marked by a visit of Her Majesty, Queen Sirikit of Thailand with a great deal of ceremony. After receiving an address from the Prime Minister, her Majesty responded with a Royal address, which highlighted the values of the congress and a number of conservation measures being taken in Thailand. Her Imperial Highness Princess Takamado of Japan, Honorary President of BirdLife International then presented an IUCN gold medal to Her Majesty for her continued efforts in conservation. She implored humankind to deal with the underlying causes of species loss and "think about the state of the world in the same way that we consider our own health".

Queen Sirikit accepts medal

Ceremony over, work started in earnest with three days of the World Conservation Forum. The themes of the Forum were:

- Ecosystem management – bridging sustainability and productivity;
- Health poverty and conservation – responding to the challenge of human well-being;
- Biodiversity and species extinction – managing risk in a changing world;
- Markets, business and the environment – strengthening corporate social responsibility, law and policy.

There were a series of plenary sessions coupled with, and sometimes overlapping with, a bewildering number of workshops, discussion groups, regional meetings, special interest groups etc with sometimes over 30 sessions running in parallel. It is tempting to try and visit as many sessions as possible but if you pick and mix too much you can loose the thread of the whole thing.

One of the many parallel meetings was a network composed of a series of universities, linked worldwide who are able to rise to the important challenges of capacity building worldwide. Distance learning is definitely part of the scene. This is high-powered stuff and could even help to improve identification skills – on line keys etc. So far so good but perhaps not so useful for someone charged with doing an on site survey or for a protected area manager in a distant part where the Internet is simply not available. The network was formally launched as the World Conservation Learning Network.

Another useful session was a European meeting devoted to the Countdown 2010. In this, European Governments have signed up to halting the loss of biodiversity by 2010. Some progress has been made but much remains to be done. Countdown 2010 aims to co-ordinate, facilitate, encourage and monitor activity of the various partners by providing a strong, yet flexible network. There is a possibility that this could be extended to other regions in the world. Much was made of the lack of a political ring of the term Biodiversity and this was also the subject of a previous article In Practice. But no one in the meeting offered an alternative.

There was a session on organic farming lead by some clear devotees to the subject. Organic farming undoubtedly has its place and can contribute to enhancing biodiversity but how much should there be and what would the effects be on world food supply if all agriculture were to become organic? Was it better to increase the area of organic farming or to take land out of agricultural production – unanswered questions, I am afraid.

There was a clear message from a number of senior IUCN figures on the need for dialogue with the private sector. A session on Business and Biodiversity partnerships fitted into this very well. This comprised a panel discussion with representatives from Birdlife International, WWF, Rio Tinto, Shell, Earthwatch, the Nature Conservancy and others moderated by a representative from KPMG. All speakers spoke with some enthusiasm of the success of various partnership schemes and the benefits which had accrued to both sides. There must be some that have failed but the mood of the meeting was very much to emphasis the positive and the opportunities. The partnerships were not necessarily finance based – training schemes had often proved successful. It seemed that the partnerships more likely to succeed were between the larger companies and the larger NGO's each with flexibility associated with size. These partnerships clearly need careful handling, often take quite a while to develop and can be quite long lasting. There was obviously the sensitive issue of branding both for companies and the NGOs.

Another interesting session was on One Planet Living and the launch of an international sustainable development and conservation initiative. This is a global joint initiative of WWF and BioRegional, a British NGO which pioneered the BedZed community in London, a housing and work development powered and heated by renewable energy. This concept could become a major factor in the proposed Thames Gateway development.

Once the world Conservation Congress was out of the way the conference changed character and dealt with the business of IUCN the Members Business Assembly. The Congress is the governing body of IUCN – The World Conservation Union. It is held every four years and represents the world's largest democratic environmental forum where governments and non-governmental organizations (NGOs) jointly establish conservation priorities, guide the Union's policy and approve its Programme. There was approval for changes in statutes, the budget, the elections and finally the resolutions and recommendations.

Many hours were devoted to consideration of the motions (resolutions and recommendations) of which there were a total of 127 received prior to the Assembly. A resolution is an adopted motion which is directed at IUCN (e.g. it might call on IUCN to take some particular action in the CBD (convention on Biodiversity)). A recommendation is an adopted motion that is directed at third Parties (e.g. it might call upon states to address climate change). Sometimes there are changes in debate or they are referred to a 'contact group' for merging with other resolutions

or refining and clarifying their purpose. The idea is that most resolutions will then be approved but it is not always the case. Right at the end there was a heated debate between China, Laos and Cambodia over conservation issues on the Mekong River.

Voting is done on a 2-part system – the governments and the NGOs and each motion has to have the majority in both sections before it can be approved. IEEM has one vote so it might technically be possible for a motion supported by major governments not to be carried because of a counter vote by IEEM and a few more! Dealing with such numerous issues and appreciating their significance is not easy and there were serious doubts expressed as to how it was really possible to understand everything on which we were asked to vote. The other thing is that the IUCN budget is limited and heavily dependent on about 14 major donors with many items of ongoing expenditure. It was not always clear that what the resource implications of agreed resolutions were and still less the recommendations. Priorities will need to be set and this, in fairness, was clearly recognised.

Resolutions:
Items on IUCN procedures:
- Various items were agreed

General environmental resolutions included:
- Protecting the Earth's waters for public and ecological benefit
- A moratorium on the further release of genetically modified organisms (GMOs)
- Policy on control of animal populations for the purpose of biodiversity conservation
- HIV/AIDS pandemic and conservation
- Education and communication in the IUCN programme
- Policy on capacity building and technology transfer
- Capacity building of Young Professionals
- Capacity building in applied and demand-driven taxonomy
- Cherishing volunteers
- Establishment of the World Conservation Learning Network
- Conservation and sustainable development of mountain regions
- Durban Action Plan and CBD Programme of Work on Protected Areas
- IUCN Guidelines for protected areas management categories
- Integrating protected area systems into the wider landscape
- Freshwater protected areas
- Threats from Olympic Games and other major sport events to protected areas
- Adapting to climate change: a framework for conservation action
- Military activities and the production, stockpiling and use of weapons that are of detriment to the environment
- IUCN's interaction with the private sector
- Cities and conservation
- Conserving nature and reducing poverty by linking human rights and the environment
- On the role of conservation organizations in poverty alleviation and development
- Indigenous Peoples, Protected Areas and the CBD Programme of Work
- Establishing gender equity as a mandate in the strategic activities and themes of IUCN
- A landscape/seascape approach to conservation
- The uses of the IUCN Red List of Threatened Species
- Conservation of medicinal plants
- Genetically Modified Organisms (GMOs) and Biodiversity

Specific points applying to particular countries or regions
- Strengthening the action of the IUCN Centre for Mediterranean Cooperation
- The Aral Sea Basin as the hot spot for Biodiversity Conservation
- Biodiversity in Southern Sudan
- Resource-based conflicts in Darfur, Sudan
- Sturgeon conservation within the Caspian Basin
- Conservation of Gyps species of vultures in South and Southeast Asia
- Illegal and unsustainable international trade in wildlife in the Asean and Mekong River riparian states

Recommendations:
The 100 or so recommendations which were approved, sometimes following revision, included:

General Issues:
- Removal of perverse incentives for conservation and sustainable use
- The Precautionary Principle in environmental governance
- Education for Sustainable Development
- Coordination of sustainable development programmes for energy
- Support for Amendment to Basel Convention Restricting Transboundary Shipment of Hazardous Wastes
- Financial institutions and the World Commission on Dams recommendations
- Shark finning

Issues specific to certain countries or regions:
- Protected Areas in the Mediterranean
- Conservation of Dugong, Okinawa Woodpecker, and Okinawa Rail in Japan
- Protection of the Great Indian Bustard
- Implementation of the "European Strategy on Invasive Alien Species"
- Threats to the Danube Biosphere Reserve
- Promoting responsible management of water resources in the Greater Mekong Basin

Much discussion was generated by the elections. The representatives are elected for a 4 year period and may serve a second term. As the President of IUCN, Yolande Kakabadse, had reached the end of her second term, there was much interest in the successor. There were two choices – Parvez Hassan from Pakistan with 20 years of IUCN experience or Mohammed Valli Moosa, the flamboyant ex Minister for Environmental Affairs and Tourism from South Africa who had been very much to the fore at the World Parks Congress in Durban and in Johannesburg. Valli Moosa was the clear winner, perhaps aided by enthusiasm for the new directions in which IUCN is developing - the engagement with society at large, how conservation impinges on gender issues, the rights of indigenous, native, peoples, engagement with the private sector etc. These are complex issues for IUCN and the new President will have the formidable task of finding a way of addressing some of these issues but without abandoning its scientific base.

The ballot for Regional Councillors for West Europe was not contested: Manfred Niekisch from Germany, Maria Purifacio Canals from Spain and Alistair Gammel for the UK, all three continuing in office.

As the Assembly drew to a close there was more ceremonial – a celebration of the contribution made by the outgoing President, Yolanda Kakabadse which was warmly applauded. It was pleasing to see Adrian Phillips recognised with an award of Honorary Member. Adrian is a former Director General of the Countryside Commission with a formidable list of contributions to IUCN, mostly through the World Commission on Protected Areas.

This was also the first Congress and Members Assembly of the relatively new Director, Achim Steiner. IUCN members seemed genuinely appreciative of the work that he has done so far and his deft handling of this most complex of organisations. He commented: "The decisions taken in Bangkok have demonstrated the role of conservation in peace building, poverty eradication, food and water security, health and spirituality, and economic development. The global environmental agenda in 2004 is more than just a manifesto; it is a concern of global relevance and collective responsibility."

In his closing remarks, IUCN's newly-elected President, Mr Valli Moosa, said: "We need to engage, involve and reach out to more people: young, old, rich, poor, urban, rural, scientist and layperson. It is from diversity that we gain our strength and political niche, and our unique moral authority."

It will be up to the IUCN regions and in some cases the National sections to consider how to implement the resolutions emerging from Bangkok and the IUCN UK section will be considering this at a meeting in Cardiff on 16th December.

Five Star accommodation!

Those who have visited Thailand will know of the stunning beaches and the myriad of islands such as featured in the film, the Beach. A post congress tour to the very north of the Country was very different in character. The conference brochure indicated 4 or 5 star accommodation was on offer but then, opinions can vary!

Orchid Tissue Culture

Here issues of balancing economic standards with sustainable tourism are to the fore - how to replace opium poppy growing with something that can produce a livelihood. The Royal family have been to the fore in helping here, an example being the Mae Fah Luang Garden created by the Princess Mother. This was created in a stunning setting and expertly designed. There was significant work in progress on orchid hybridization. Once a hybrid has set seed and germinated, propagation is by tissue culture. A successful hybrid can be big business indeed. Otherwise in the north of the country there is now much evidence of tree planting, especially teak, in former opium poppy growing areas. Lowland areas are usually given over to food production – rice paddies, bananas, pineapples, lychees, paw-paws and many excellent vegetables.

The Hill Tribes have many activities related to traditional crafts such as weaving and jewellery making. Ecotourism is certainly developing with trekking, rafting and elephant rides featured. Oh and another thing – what to you do with a large number of elephants made redundant because of the cessation of the logging trade. So successful has the tourism been with elephants, that more have had to imported from Myanmar (Burma).

Sustainable Tourism

In this area there are complex issues of history, different communities, different traditions – long necks and huge ear lobes for example and even one town with the remnants of Chiang Kai-shek's army following defeat in the Chinese civil war by the communists. The lifeline of the area is the Mekong River, which is navigable by quite large boats and serves to distribute significant amounts of goods from China. The famed Golden Triangle is where Thailand, Myanmar and Laos all meet on the Mekong; the first thing you see in Burma is a large Casino; in Laos, bottled snake whiskey containing a cobra is on offer!

Overall I was left from this brief glimpse with the impression that wildlife conservation in Thailand is a growing issue, which is heartening in view of its considerable biodiversity. It would be surprising if there is sufficient finance to effectively manage the large number of national parks but there is certainly an awareness of the need for conservation and this awareness is firmly embedded in the activities of the Royal family for which the Thais have enormous respect. There are clearly contentious issues and a Thai NGO produced a pamphlet calling on the Prime Minister to reconsider a number – a cable car initiative to bring mass tourism into the heart of Doi Chiangdao Wildlife Sanctuary, a road across the Umpang Wildlife Sanctuary and an expressway across a wetland of international importance. The Thailand environment monitor 2004 identified the following challenges:

- Mainstreaming biodiversity
- Tourism
- Learning for protected area management
- Making enforcement more effective
- Making effective use of research
- Broadening conservation financing
- Harnessing markets and the private sector in biodiversity conservation and sustainable use.

The very fact that IUCN held only its third World Conservation Congress there is a sign of the importance attached to Thailand and hopefully, this will in itself produce some positive results.

Continuing Professional Development (CPD)

Nick Jackson, AIEEM

CPD is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives.

One of IEEM's objectives is "to advance the science, practice and understanding of ecology and environmental management for the public benefit in the United Kingdom and Internationally". It is in the public's interest that the Institute's members maintain and develop their professional knowledge and skills throughout the life of their membership. CPD helps to ensure this maintenance and improvement of competence.

Under Clause 4.2.8 of the Code of Professional Conduct, members of the Institute are required to undertake CPD and to provide the Institute with their CPD record once a year. The regulation requires that all Fellows, Full and Associate members undertake at least 20 hours of CPD every year. There is no CPD requirement for Retired, Student or Affiliate members. A random 10% sample of members is taken every year. There will be a 10% sample taken soon for the returns for the 2003-2004 period - you have been warned!

Ecology is a rapidly advancing subject – make sure that you can show you are up to date. Keeping up your CPD record on a regular basis is really the answer. It is not too onerous – think about it and you will be amazed at how easy it is. Ask yourself – did you attend an IEEM or other relevant conference? Did you attend an IEEM workshop or other appropriate sessions? Did you read articles in "In Practice" or other publications? These all count towards the minimum requirements. The example form printed below shows just how easy it is to meet these requirements.

It is also worth mentioning that as well as being a requirement for the IEEM, a full CPD record will be needed if you intend to apply for Chartered Status through the Society for the Environment.

Institute of Ecology and Environmental Management
Example CPD RECORD SHEET 2003 (Oct 02 - Sept 03)

Name:	Email:
Employer:	Tel:

CPD activity and name of provider for structured CPD	S/US	Skill developed	Date	
Material & Briefings on Habitats Directive for different MEPs.	US	Influencing and communication skills associated with Habitats Directive, political dimension & own work.	10 Oct, 6 Dec	7 x 2rs = 14hrs
IEEM Annual conference on urban ecology and nature conservation December 2003 - started new role in organisation	S	Raising knowledge & awareness of Urban Ecology issues	28 Nov	7hrs
Attendance & participation in internal "Development of Policy"	S	Raising knowledge & awareness of how to develop policy as part of skill development for new role	18 Dec	5 hrs
SeminarOn-line Library & Information Services Demonstration	S	Knowledge of search methods and tools available	17 Jan	2 hrs
Consolidation course on "Positive Power & Influencing skills" (Shepherd Moscow)	S	Consolidation of training begun in 2002 & competency development in these areas	21,30, 31 Jan	16 hrs
IEEM TECD Committees	US	Participation in committees & contributing to work of IEEM	6 Feb; 19 Jun	6hrs
Management of Workplace stress workshop (internal course as part of H & S training)	S & US	Participation in seminar – H & S awareness raising and follow-up work with team on risk assessment (led session)	6 & 18 Mar	7 hrs
River Restoration conference 2003 (River Restoration Centre)	S	Technical knowledge raising on river restoration specialism.	28 & 29 Apr	12 hrs
IEEM short course on "Using Bryophytes as Habitat Indicators"	S	Development of technical knowledge in aspect of Ecology and its application.	15 May	6 hrsf

In the Journals

Compiled by Jim Thompson

British Ecological Society

S.Jennings and J. L. Blanchard.
Fish abundance with no fishing: predictions based on macroecological theory.
Journal of Animal Ecology 2004, **73**: 632-642.
Fishing changes the structure of fish communities but the structure of unexploited communities cannot always be predicted from historical data because fisheries exploitation usually precedes scientific investigation and non-fisheries impacts, such as climate change, modify ecosystems over time.

Using a model applied to the North Sea, the authors suggest that the current biomass of large fishes weighing 4–16kg and 16–66kg, respectively, is 97·4% and 99·2% lower than in the absence of fisheries exploitation. The results suggest that depletion of large fishes due to fisheries exploitation exceeds that described in many short-term studies.

Biomass of the contemporary North Sea fish community (defined as all fishes with body mass 64g–66kg) is 38% lower than predicted in the absence of exploitation, while the mean turnover time is almost twice as fast (falls from 3·5 to 1·9 years) and 70% less primary production is required to sustain it.

The increased turnover time of the fish community will lead to greater interannual instability in biomass and production, complicating management action and increasing the sensitivity of populations to environmental change.

This size-based method may provide a powerful new tool for setting ecosystem indicator reference levels, comparing fishing impacts in different ecosystems and for assessing the relative impacts of fishing and climate change.
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R. A. Robinson, R. E. Green, S. R. Baillie, W. J. Peach and D. L. Thomson.
Demographic mechanisms of the population decline of the song thrush *Turdus philomelos* in Britain.
Journal of Animal Ecology 2004, **73**: 670-682.
In Britain, the song thrush *Turdus philomelos* is categorized as a species of high national conservation concern because of a large population decline during the last three decades. The authors calculated a series of annual national population estimates for woodland and farmland habitats combined for the period 1964-2000.

They used recoveries of song thrushes ringed as nestlings, juveniles and adults during April-September to estimate survival rates separately for the post-fledging period, the remainder of the first year and for adults. Daily survival probability was lower during the post-fledging period than during the remainder of the first year or for older birds.
Survival of first-year birds was correlated negatively with the duration of the longest run of frost days and the survival of adults was correlated negatively with the duration of the longest summer drought.

Changes in survival in the first winter, and perhaps also the post-fledging period, are sufficient to have caused the song thrush population decline. The environmental causes of these changes are not known, but changes in farming practices, land drainage, pesticides and predators are all candidates. Adverse weather conditions contributed to the decline, but were not the primary driver.
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A. Stampli and M. Zeiter.
Plant regeneration directs changes in grassland composition after extreme drought: a 13-year study in southern Switzerland.
Journal of Ecology 2004, **92**: 568-576.
The cover of plant species was recorded annually from 1988 to 2000 in nine spatially replicated plots in a species-rich, semi-natural meadow at Negrentino (southern Alps). This period showed large climatic variation and included the centennial maximum and minimum frequency of days with 10 mm of rain.

Changes in species composition were compared between three 4 year intervals characterized by increasingly dry weather (1988-91), a preceding extreme drought (1992-95), and increasingly wet weather (1997-2000).

Recruitment capacity, the potential for fast clonal growth and seasonal expansion rate were determined for abundant taxa and tested in general linear models as predictors for rates of change in relative cover of species across the climatically defined 4-year intervals.

Relative cover of the major growth forms present, graminoids and forbs, changed more in the period following extreme drought than at other times. Recruitment capacity was the only predictor of species' rates of change.

Following perturbation, re-colonization was the primary driver of vegetation dynamics. The dominant grasses, which lacked high recruitment from seed, therefore decreased in relative abundance. This effect persisted until the end of the study and may represent a lasting response to an extreme climatic event.
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R.J. Tofts.
Biological Flora of the British Isles. *Geranium purpureum* Vill.
Journal of Ecology 2004, **92**: 720-731.
This plant, Little- Robin, has limited distribution in the UK, mostly near the south coast and Devon and Cornwall. It is however, extensive in Southern Europe and around all shores of the Mediterranean. Although perhaps of limited interest as a species in the maybe worthwhile monitoring any changes in its future distribution that might be attributable to global warming global warming. Tofts states that recently its distribution appears to be in decline.
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W.A. Ozinga, R.M. Bekker, J.H.J. Schaminee and J.M. Van Groenendael.
Dispersal potential in plant communities depends on environmental conditions.
Journal of Ecology 2004, **92**: 767-777.
Local plant communities can only function within a metacommunity context if they are connected by appropriate dispersal vectors, accommodating the transport of propagules between sites. The capacity for long-distance dispersal may be a key factor in the survival of local populations, especially in fragmented landscapes, and hence may have a large impact on local species composition. Dispersal vectors with a large efficiency for long-distance dispersal included in this study are: water, wind, large mammals and birds.

The authors tested the hypothesis that variation in dispersal traits

across plant communities is related to the position of the communities along major environmental gradients. This hypothesis was tested for (i) separate long-distance dispersal vectors and (ii) multiple dispersal vectors (the number of potential long-distance dispersal vectors per species).

For each dispersal vector, the proportions of species that have access to this vector per community (weighted trait scores) were projected along three major environmental gradients: soil moisture, nutrient availability and light availability.

The potential importance of individual dispersal vectors showed clear differences along the three environmental gradients, with the greatest differences being in light availability. The differences in dispersal traits probably reflect environmental constraints on the availability or efficiency of individual dispersal vectors.

The ability to be dispersed by multiple dispersal vectors is a common phenomenon in most plant communities (an average of 2.15 vectors per species). The mean number of potential long-distance dispersal vectors per species increases with light availability. This probably implies that plant communities differ in their response to both habitat fragmentation and habitat restoration.

The results emphasize the need for dispersal models based upon multiple dispersal vectors that explicitly include parameters for habitat characteristics.
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K. Takahashi and T. Kamitani,
Effect of dispersal capacity on forest plant migration at a landscape scale.
Journal of Ecology 2004, **92**, 778-785.
The authors studied the effects of seed dispersal mode and seed mass on the migration patterns of woody and herbaceous forest species in a planted pine forest growing on a former sand dune. Seven sites in the planted forest, at least 44 years old, were selected at different distances from an adjacent natural forest.

Both the species richness and the abundance of forest species decreased with increasing distance from the natural forest, indicating that the migration of forest species is limited by seed dispersal. Plants using different seed dispersal modes showed differences in migration rate.

Ingested and adhesive species migrated into the artificial forest with the most success. In contrast, almost all the species utilizing other dispersal mechanisms (wind, hoarding or no dispersal mechanism) migrated only into sites near to the natural forest. This is likely to be due to low dispersal capacities. Migration distances were calculated for 43 species based on the occurrence of the individual of each species furthest from the natural forest, and on the maximum abundance of that species in the artificial forest. The migration distances of the species did not correlate with their seed mass.

The dispersal efficiency is an important factor in migration of forest species on a landscape scale, and the migration ability is affected by dispersal mode rather than seed mass.
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P. Manning, P. D. Putwain and N. R. Webb.
Identifying and modelling the determinants of woody plant invasion of lowland heath.
Journal of Ecology 2004, **92**: 868-881.
The invasion of *Betula* spp. is a transition between European lowland heath and scrub ecosystems. The hypothesis was that *Betula* invasion was controlled by a multivariate threshold, comprising factors that may be subdivided into seed and safe-site limitations, and that phosphorus availability was a key determinant of the Betula safe-site.

A multifactorial field experiment was carried out in which seed rain, P-availability and disturbance were manipulated. All treatments had significant effects on *Betula* seedling densities, with seed availability proving the single greatest limitation. P addition emerged as having highly significant effects 4 and 12 months after germination. Disturbance had an initially large positive effect that dwindled across time.
Seed availability remained the most important factor, but as the seedlings matured, recruitment became more limited. Statistical modelling allowed for the subdivision of disturbance effects into those associated with a reduction in vegetation densities and the remaining 'direct' effects, e.g. soil disturbance, which shifted over time from being positive to negative. The results also support the hypothesis that soil phosphorus sorption capacity (PSC) determines heathscrub transition as many of the identified determinants are controlled, either directly or indirectly, by PSC.

The study demonstrates that a combination of experimental and statistical modelling approaches can provide a detailed description of the factors controlling early stage invasion and may therefore have considerable utility in ecosystem management.
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Birch Invading Heathland

L. T. Bennett and M. A. Adams.
Assessment of ecological effects due to forest harvesting: approaches and statistical issues.
Journal of Applied Ecology 2004, **41**: 585-598.
Timber harvesting exemplifies many aspects of experimental manipulation in applied ecology. Evaluation of the research approaches used to assess ecological effects of harvesting thus has relevance to a diverse range of ecological questions that address large-scale and human impacts on the environment.

The authors measured the frequency of approaches, and also design and statistical issues, in assessments of harvesting effects on three response variables (tree regeneration, vertebrates and water) in two major native forests of south-east Australia. The evaluation was based on 124 documents.

Statistical issues such as poor reporting of experimental designs and of sample statistics were common. Lack of treatment replication was widespread in between-stand contrasts and less frequent in within-stand contrasts. Inappropriate interpretation of results from non-replicated experimental designs remains an ongoing issue.

The amount of information obtainable from stand-level manipulations of forest would substantially increase through greater attention to data quality and experimental protocols. The evaluation suggests the alternative is a perpetuation of short-term, isolated studies that repeat errors and have limited potential to refine knowledge on the ecological effects of timber harvesting and other similarly scaled disturbances - some possible lessons here for those involved in these large scale forestry experiments.
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R. P. Freckleton.
The problems of prediction and scale in applied ecology: the example of fire as a management tool.
Journal of Applied Ecology 2004, **41**: 599 – 603.
Predicting the large-scale consequences of management practices requires an ability to accurately predict how such management will affect ecological landscapes based on short-term datasets. Ecological interactions are key to understanding the effects of fires. Species respond differentially to processes such as competition and herbivory, as well as to fires. This means that community composition may change substantially with changing frequency of fires.

The studies highlighted the role of fire in modulating the frequency of invasion of alien species in a range of ecosystem types. In two of the studies, alien species were superior competitors to native ones in the absence of fires, but unable to regenerate following fires.
In addition to measuring the effects of such management using experiments, it is necessary to understand in detail the effects of fire on the underlying interactions between species, and feedbacks between different components of ecosystems.
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T. Amano, K. Ushiyama, G. Fujita and H. Higuchi.
Alleviating grazing damage by white-fronted geese: an optimal foraging approach.
Journal of Applied Ecology 2004, **41**: 675 – 688.
Agricultural damage by wildlife is a serious constraint on the coexistence of humans and wildlife. In this study, a model based on optimal foraging theory was used to formulate management strategies designed to reduce wheat damage caused by white-fronted geese *Anser albifrons* around Lake Miyajimanuma in Japan.

Geese feed on rice grains or wheat leaves. Their choice of food is constrained by their daily energy requirement, daily nitrogen requirement, digestive capacity and daily maximum foraging time. Comparing the results of the model with actual observations, it appeared that nitrogen constraints drove the geese to forage on wheat in autumn, but energy considerations drove the geese to forage on wheat plus rice in late spring.

Increasing the harvest remains of rice by 30%, a large reduction in wheat damage could be achieved both in autumn and in spring. Damage could be reduced further by supplying protein-rich food, such as grass on fallow fields and on ridges of rice fields in autumn, and by leaving geese foraging in rice fields undisturbed.
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A. Béchet, J-F. Giroux and G. Gauthier
The effects of disturbance on behaviour, habitat use and energy of spring staging snow geese.
Journal of Applied Ecology 2004, **41**: 689 – 700.
For many species, human-induced disturbances can be severe. However, energy-cost variations from different disturbance types have rarely been reported.

The authors evaluated the dynamic behavioural responses of greater snow geese *Anser caerulescens atlanticus* to different types of disturbance in southern Quebec, Canada, between 1997 and 2000 and specifically the impact of a spring conservation hunt implemented in agricultural habitats in 1999.

They tracked 237 radio-tagged females for 2764 h and recorded 697 take-offs following fortuitous disturbance, scaring and hunting in three regions characterized by different habitats. Geese used cornfields in south-western Quebec, *Scirpus* marshes and hayfields in the upper St Lawrence estuary, and *Spartina* marshes and hayfields in the lower estuary.

Overall, disturbance levels increased in the upper and lower estuary during years with hunting, mostly through an increase in hunting and scaring activities.

The probability of geese returning to a refuge after disturbance in agricultural habitats increased in years with hunting except in the corn-growing region. The short-term energy gain of geese resuming feeding after disturbance was less than before disturbance, and this difference was greater in years with hunting. Distances flown after disturbance decreased with flock size and were longer after scaring and hunting than after fortuitous disturbances in the *Scirpus* region.

Overall, habitat use varied among years and associated estimated energy gain decreased markedly in both years with hunting in the *Spartina* and corn-growing region, but did not change in the *Scirpus* region. Changes in behaviour due to disturbance, and especially those associated with hunting, probably contributed to the reduced body condition of greater snow geese during years with hunting.

The importance of tracking the behaviour of individual animals after disturbance to properly evaluate its impact was emphasised. From a conservation perspective it was argued that the hunting of breeding waterfowl during their prenuptial migration should be limited in order to facilitate their fattening and forthcoming reproduction. A side-effect of disturbance induced by spring hunting to control overabundant populations may be reduced fattening and breeding output among birds that survive. The importance of measuring the direct and indirect effects of disturbance was stressed rather than assuming effects from the incidence of the disturbance alone.
Correspondence: e-mail bechet@tourduvalat.org

J. E. Malo, F. Suárez and A. Díez.
Can we mitigate animal-vehicle accidents using predictive models?
Journal of Applied Ecology 2004, **41**: 701-710.
Vehicle collisions with wild animals are a serious problem that justifies the widespread application of mitigation measures such as road fencing and provision of crossing structures. Models that predict the best location for mitigation measures can improve wildlife survival and road safety.

A database of 2067 records of animal-vehicle collisions was used to create two data sets at different spatial scales. The first comprised records of road sections of 1 km length with high rates of collision in combination with road sections with a low number of collisions. The second comprised records of collision and no collision incidence at points on the road system at a 0·1-km scale.

Road sections with high collision rates were associated with areas having high forest cover, low crop cover, low numbers of buildings and high habitat diversity. Specific collision points typically had no guard-rails or lateral embankments, were not near underpasses, crossroads or buildings, and featured hedges or woodland near the road. Predictive models of animal-vehicle collision locations should be used at both a landscape level and a local scale during the process of road design and implementation of mitigation measures. Modelling of collision risk could inform decisions on road alignment and on the exact location of crossing structures for mammals, to improve wildlife survival and road safety.
Correspondence: e-mail je.malo@uam.es

S. Kramer-Schadt, E. Revilla, T. Wiegand and U. Breitenmoser
Fragmented landscapes, road mortality and patch connectivity: modelling influences on the dispersal of Eurasian lynx.
Journal of Applied Ecology 2004, **41**: 711-723.
Although many reintroduction schemes for the Eurasian lynx *Lynx lynx* in Germany have been discussed, the implications of connectivity between suitable patches have not been assessed.

The authors developed a model to assess the probability of a dispersing animal reaching another suitable patch in the complex heterogeneous German landscape, with its dense transport system.

Most suitable patches could be interconnected by movements of dispersing lynx within 10 years of reintroduction. However, when realistic levels of mortality risks on roads were applied, most patches become isolated except along the German-Czech border. Consequently, patch connectivity is limited not so much by the distribution of dispersal habitat but by the high mortality of dispersing lynx. Accordingly, rather than solely investing in habitat restoration, management efforts should try to reduce road mortality.

Clear limits imposed by substantial road mortality will affect dispersing lynx as well as other large carnivores, unless offset by careful road-crossing management or by the careful selection of release points in reintroduction programmes.
Correspondence: e-mail Stephanie.Kramer@ufz.de

S. Garthe and O. Hüppop.
Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index.
Journal of Applied Ecology 2004, **41**: 724 – 734.
Due to political pressure to complete construction soon, assessments of possible wind farm locations, for example in the German sectors of the North Sea and Baltic Sea, have had to be based on existing knowledge.

In this study, the authors developed a wind farm sensitivity index (WSI) for seabirds. They chose nine factors, derived from species' attributes, to be included in the WSI: flight manoeuvrability; flight altitude; percentage of time flying; nocturnal flight activity; sensitivity towards disturbance by ship and helicopter traffic; flexibility in habitat use; biogeographical population size; adult survival rate; and European threat and conservation status.

Species differed greatly in their sensitivity index (SSI). Black-throated diver *Gavia arctica* and red-throated diver *Gavia stellata* ranked highest (= most sensitive), followed by velvet scoter *Melanitta fusca*, sandwich tern *Sterna sandvicensis* and great cormorant *Phalacrocorax carbo*. The lowest values were recorded for black-legged kittiwake *Rissa tridactyla*, black-headed gull *Larus ridibundus* and northern fulmar *Fulmarus glacialis*.

A WSI score for areas of the North Sea and Baltic Sea was calculated from the species-specific sensitivity index values. Coastal waters in the south-eastern North Sea had values indicating greater vulnerability than waters further offshore throughout the whole year.

The wind farm sensitivity index might be useful in strategic environmental impact assessments. Results of small-scale EIA from wind installations should be considered within a more global perspective, provided, for example, by large mapping projects and detailed behavioural studies.
Correspondence: e-mail garthe@ftz-west.uni-kiel.de

J. O. Hampton, P. B. S. Spencer, D. L. Alpers, L. E. Twigg, A.P. Woolnough, J. Doust, T. Higgs and J. Pluske.
Molecular techniques, wildlife management and the importance of genetic population structure and dispersal: a case study with feral pigs.
Journal of Applied Ecology 2004, **41**: 735 - 743.
Understanding the spatial structure of populations is important in developing effective management strategies for feral and invasive species, such as feral pigs *Sus scrofa*. World-wide, feral pigs can act as 'triple threat' pests, impacting upon biodiversity, agricultural production and public health; in Australia they are a significant vertebrate pest.

The authors utilized a molecular approach to investigate the structure of populations of feral pigs in south-western Australia. This identified feral pig groups that appeared to be acting as a source for reinvasion following control operations. It also identified populations where current control measures were less successful in reducing population size'.

The potential for the spread of directly transmitted wildlife diseases between the pig populations studied was low. However, under some circumstances, such as within major river catchments, the role of feral pigs in the transmission of endemic or exotic diseases is likely to be high.

The results indicated that the feral pig populations studied were unlikely to be acting as closed populations and, importantly, it identified where movement between groups was likely to occur. This should lead to more informed decisions for managing the potential risk posed by feral species, such as pigs, in the transmission of wildlife diseases. This technique could help in understanding the dynamics of many other free-ranging pest animal populations.
Correspondence: e-mail P.Spencer@murdoch.edu.au

C. C. Webbon, P. J. Baker and S. Harris.
Faecal density counts for monitoring changes in red fox numbers in rural Britain.
Journal of Applied Ecology 2004, **41**: 768 –779.
Quantifying animal density is a fundamental requirement for the successful management of canid species. Faecal transects along linear features represent a cost-effective means of quantifying relative density. However, it is unclear whether such counts can be utilized to estimate absolute density.

The authors counted fox faeces in 444 1-km squares throughout mainland Britain to construct a baseline index of fox density against which future changes could be measured. By incorporating estimates of the defecation rate and the proportion of scats associated with linear features, absolute density was estimated in seven landscapes. These estimates were compared with existing data on fox density.

On average, captive foxes consumed 0·85 kg food day1. Defecation rate (8 scats fox^{-1} day^{-1}) was not affected by the type of food consumed.The proportion of scats associated with linear features was determined by feeding individual free-living foxes a known amount of food containing an indigestible marker. On average, 5·7% of scats were deposited along linear features.

Mean fox density in landscapes ranged from 0·21 to 2·23 foxes km^{-2}. These estimates agreed closely with the limited data available on fox density in Britain. The total rural fox population was estimated to be 225000 foxes and, including foxes in urban areas, an overall population ated to be approximately 258000 individuals.

The results suggest that faecal density counts have the potential to be used to estimate fox density over large spatial scales.
Correspondence: e-mail s.harris@bristol.ac.uk

News in Brief

Suspected Case of Bat Rabies in Staines
This news will be of interest to all bat workers. If you had not heard already, initial tests carried out on a juvenile female Daubenton's bat have shown positive results for a strain of rabies.

The bat was found by a member of the public in an alley off Thames Street, Staines, Surrey. The bat was observed to be acting abnormally and was moved under cover where it remained for several days between 17 and 21 September. It was then taken into the care of experienced bat conservation group volunteers. The bat died on 23 September.

Three individuals who are known to have cared for and handled the bat took precautions and wore gloves. They received appropriate medical treatment.

If you have any concerns please contact Defra on 08459 335577

Ratty's revenge…
A developer recently pleaded guilty to recklessly destroying habitat for endangered water voles in Pewsey, near Marlborough in Wiltshire. This is the second successful prosecution for damage to water vole habitat using the recently amended Wildlife and Countryside Act. Devizes magistrates fined the developer £3,000 for offences.

The developer admitted that he had instructed his employees to undertake dredging work on the watercourse next to Southcott Road, Pewsey, thus destroying the existing water vole habitat. He had previously been made aware of the presence of water voles and the protection afforded to their habitat when his planning application for an adjacent development site was considered.

For more information contact English Nature on 01733 455190

Scottish Power
The seas around Scotland have the potential to meet a sizeable proportion of Scotland's energy needs. Although it is too early to fully understand the impact of any marine energy generation on Scotland's natural world, the least damaging are thought to be offshore wave power and tidal stream. These compare favourably with existing renewable sources such as onshore wind and hydro power. These technologies were discussed as part of the Energy and the Natural Heritage conference held on the 10-11th November. The conference looked at the impacts on wildlife and landscape of all forms of energy use and generation – including fossil fuels, nuclear power, and all types of renewable energy including wind and hydro.

A Little Bit of North America Comes To Lewis
Bird enthusiasts flocked to the lighthouse at the Butt of Lewis, Outer Hebrides , recently to catch a rare glimpse of an American purple martin. The purple martin, a thrush sized bird, was thought to have been blown off course by the recent hurricanes that ripped through the Caribbean and US. This is a rare event and is one of several first UK sightings of birds this year including: the taiga flycatcher and the black lark.

Rescue 100,000 fish
Hundreds of thousands of fish have been rescued from Thrapston Dyke after oxygen levels in the water were too low to keep them alive. The bream, perch and ruffe have been moved to the River Nene after some died and others became distressed in the stream.
The theory is that the fish were washed into the dyke during flooding when they were young and very much smaller. Now they are unable to get back into the River Nene and there are hundreds of thousands living in a small area which cannot sustain them.

Shifting Sand for River Fowey Salmon
One of the west country's most important and beautiful rivers, the Fowey, is benefiting from a special project that is helping to remove potentially harmful sediment from its waters.The Fowey is widely regarded as one of the region's cleanest rivers, but in recent years has suffered from a build up of sand and sediment washed down from its headwaters. Excessive sediment poses a serious threat to the river by clogging clean gravel beds on which fish spawn, filling in pools where fish rest and smothering plants and riverside habitats.

The build up has been caused by inappropriate ditching and drainage works on Bodmin Moor that released many tonnes of fine sand into the river. Overgrazing and cattle eroding the riverbanks can also add to the problem.

The Environment Agency is tackling the problem through a European-funded Cycleau project in partnership with local landowners and river users. More than 400 tonnes of sand has been removed from three salmon and sea trout resting pools in the Draynes Valley.

Local Authorities to 'think rural'
The research and some practical guidance was published at a one day working seminar exploring solutions to the challenge of 'thinking rural' when setting LPSAs. The research – carried out in partnership with the LGA, Defra, and IDeA3 – shows that although a number of local authorities did tackle rural issues within the first round of LPSA targets, in general rural targets did not feature strongly. However, the research made clear that there is great potential to deliver benefits for rural people through the next round.

The practical guidance, Thinking Rural within Local Public Service Agreements (CAX 165 – free of charge) and associated research report, Researching the Rural Dimension of Local Public Service Agreements carried out by Cardiff University (CAX 166 – price £2) are both available from Countryside Agency Publications www.countryside.gov.uk/ruralproofing

New Chairman for Countryside Agency
The Countryside Agency welcomed the appointment of the Rev Dr Stuart Burgess, a senior Methodist minister, as chairman of the Countryside Agency.

Dr Burgess's role will be to ensure that real benefits are achieved for rural communities and the English countryside, as the Agency refocuses its socio-economic work into the 'new countryside agency', works closely with other partners to bring together its landscape, access and recreation work together with that of English Nature and most of the Rural Development Service, and hands over its successful programmes.

Public's Voice On Clean Air
People are to be given a greater say on how air pollution is tackled under moves to strengthen public participation in environmental decision-making.

The government must put into practice a new European law which requires the UK and other EU countries to ensure that the public is consulted on plans and programmes to deal with issues such as air pollution. Several existing environmental regulations need to be amended, including the Air Quality Limit Values Regulations 2003, to take account of the new European law.

Major Scientific Conference On Climate Change
Defra have put out a call for papers to international scientists for its major three day conference, to be held in Exeter in 2005, on the scientific aspects of the stabilisation of climate change. It follows the Prime Minister's announcement to business leaders in London in September that a key science conference on climate change would be taking place at the beginning of the UK's Presidency of the G8.

The conference, which will take place at the Hadley Centre for Climate Research and Prediction (Met Office), from February 1-3, 2005, aims to encourage an international scientific debate on the long-term implications of climate change. A dedicated website, which has been set up by the Hadley Centre, will provide updated details about the conference. It can be accessed at http://www.stabilisation2005.com

Big Whale Tale
A huge fin whale, the second largest animal on earth has been washed

up in Cornwall. The whale, a young adult female, was reported to the Cornwall Wildlife Trust Strandings Network. The Network records all stranded cetaceans in Cornwall for the Institute of Zoology and the Natural History Museum. The carcass was found near Land's End and, as it weighed somewhere between 35 and 45 tonnes and measured just over 50 feet (15m), it was almost certainly blown onto the rocks by the recent strong winds, although it is likely that is was dead before it beached.
More Information available from Dr Nick Tregenza, Cornwall Wildlife Trust: 01736 711783

Britain May Lose More Birds
Using data collected under the Nest Record Scheme (NRS), The British Trust for Ornithology (BTO) has discovered that another four species (house sparrow, barn owl, pied wagtail and wheatear) are finding it increasingly hard to raise their young. Poor breeding performance has already been blamed for population declines of UK bird species such as linnet. This latest information may help to explain current declines for some species and may give warning of problems to come for others.

Nature Conservation and Community Development
A collaborative forest management project, initiated in the year 2000 by IUCN Moscow Office, Canadian International Development Agency (CIDA) and Russian partner organizations, is breaking new grounds in the forest management of Russia. The project titled "Building Partnerships for Forest Conservation and Management in Russia" brings together hundreds of local organizations, including Russian and Canadian federal agencies, NGOs, native communities, protected areas administrations, regional and local authorities. The Russian State Duma, research and educational organizations and businesses are also involved in the project design and implementation.

The Project has a threefold structure, with the overarching component devoted to foster public involvement into the forest management of Russia. The local level component is focused more on empowering communities in the Kamchatka Peninsula and Sakhalin Island.
For more information please contact:
IUCN Russia – tel + 7 (095) 190 70 77 or www.iucn.ru

Conservation Goes Spaceage
NASA and IUCN signed a joint declaration in Bangkok, to use NASA satellite data to help in worldwide conservation efforts. The purpose of the joint declaration is to improve access to, and incorporate NASA data and remote sensing products into the work of IUCN. NASA's satellite data, images and technical expertise will be used by IUCN members and commissions to help improve the quality and effectiveness of environmental decision making, and ultimately to improve conservation outcomes.
Advances in technology mean that NASA's remote sensing data and images are now accessible and affordable by most organizations worldwide.

For more information contact NASA http://www.nasa.gov/home/index.html

IUCN Red List 2004
Since the release of the 2003 Red List, more than 15,633 new entries have been added and 3,579 species reassessed. There are now 7,266 threatened animal species and 8,323 threatened plant and lichen species. A total of 784 plant and animal species are now recorded as Extinct with a further 60 known only in cultivation or captivity.

Since 2003, there have been some notable changes to the List, including some marked deteriorations, like the St Helena olive (from Extinct in the Wild to Extinct), the Hawaiian crow (from Critically Endangered to Extinct in the Wild), the Balearic shearwater (From Near Threatened to Critically Endangered), the giant Hispaniolan galliwasp lizard (from Near Threatened to Critically Endangered), and an African begonia, Begonia oxyanthera (from Near Threatened to Vulnerable).

But there have also been some improvements, such as the European otter (from Vulnerable to Near Threatened) and the Christmas Island Imperial pigeon (from Critically Endangered to Vulnerable).

More of Europe's birds in trouble
The number of bird species in trouble across Europe is rising, warns BirdLife International. The latest assessment, published in BirdLife's new in-depth study, Birds in Europe, reveals that 226 species of birds 43% of all those occurring regularly in Europe are facing an uncertain future. Many are declining, rare or localised, whilst populations of others remain heavily depleted following huge declines suffered during the 1970s and '80s. Some are now so threatened that they may disappear from parts of Europe in the very near future.

'Birds in Europe' was launched in the Netherlands at a conference celebrating the 25th anniversary of the European Union's Birds Directive, along with its sister publication, Birds in the European Union, which looks specifically at how well the EU has done in bird conservation. The publications, which span the whole of Europe from Greenland to Georgia and from the Canary Islands to Russia, assess population sizes and trends for all of Europe's wild birds from 52 European countries or territories. Birds in the EU deals solely with the 25 Member States of the European Union.

For more information please visit http://www.birdlife.net/

NCEAS Data-sharing survey
The National Center for Ecological Analysis and Synthesis (NCEAS) and its partners have already begun to address some of the more technical aspects of data-sharing, including data discovery, distribution and integration, through the development of the Knowledge Network for Biocomplexity. Such an assessment is one of the objectives of theNCEAS working group. The NCEAS has a short survey online. The information from the survey will be used by the working group to develop a strategy for enhancing data sharing among researchers.

If you have any questions or concerns, contact Scott Findlay (sfindlay@science.uottawa.ca) or Jeff Houlahan (jeffhoul@unbsj.ca)

To take part in the survey please go to http://www.surveymonkey.com/s.asp?u=20315501517

World Wetlands Day

2 February each year is World Wetlands Day. It marks the date of the signing of the Convention on Wetlands on 2 February 1971, in the Iranian city of Ramsar on the shores of the Caspian Sea. Each year, government agencies, non-governmental organizations, and groups of citizens at all levels of the community have taken advantage of the opportunity to undertake actions aimed at raising public awareness of wetland values and benefits in general and the Ramsar Convention in particular. From 1997 to 2004, the Convention's Web site http://ramsar.org has posted reports from more than 80 countries of WWD activities of all sizes and shapes, from lectures and seminars, nature walks, children's art contests, sampan races, and community clean-up days, to radio and television interviews and letters to newspapers, to the launch of new wetland policies, new Ramsar sites, and new programmes at the national level.

The theme for this year is "Cultural and Biological Diversity of Wetlands." Ramsar have produced a series of stickers and posters for use in disseminating information and advertising your events on WWD.

For more information on WWD please visit http://ramsar.org

Institute News

Southport Conference and the AGM

The conference report appears elsewhere but there were some significant results from the AGM. Firstly the new Code of Professional Conduct has been approved – this was circulated to all members as part of the AGM agenda. A printed version will be sent to all members shortly.

The elections saw Chris Spray taking over as the new President and the retirement of Sue Bell. Chris takes over at a time when the Institute has never been stronger and Sue returns to work and family in the secure knowledge that she made a real contribution as President as we moved from survival as being the first priority to charting the way forward for the Institute and identifying some of the priorities. Otherwise the Directors remain the same - Will Manley as Vice-President, Robin Buxton as Secretary and Alex Tait as Treasurer. The AGM saw the retirement of several members of Council, Hilary Ludlow, David Jamieson and Peter Beale all having served their full term of 6 years. Hilary Ludlow had in fact served a double term of 6 years with a 1 year break in the middle. Mike Barker also retired as Council members and Chairman of the External Affairs Committee – to concentrate on the challenges of his new job. The Institute is grateful to all those who have retired for the contribution that they have made to the development of IEEM.
Three new members of Council were elected: Nicola French, Jenny Neff and Pam Nolan.

The Northwest – a new Geographic Section

Following a meeting the early evening of the 9th November, it was agreed to start a new section in the Northwest. This will chaired by Paul Rooney until a formal election is held in a years time. There was strong enthusiasm for the section from those at the meeting and there were 4 events planned for 2005 – all of a field nature and thoroughly informal – but real opportunity to get some practical insights. The hope is that the section will really manage to get itself established during the course of the year – so if you are in the Northwest, keep an eye out for the diary of events and any news on the website.

Future Conferences

Planning is now starting on the Spring Conference for 2005 as well as the 2-day residential conference – more details to follow but keep an eye on the website for an early announcement on the Spring Conference. Hamilton House in London has been booked for the event on 19th May. A theme to be explored this year is how ecology can contribute to the programme of new housing and how this housing can be made sustainable. Dr Peter Beale has kindly agreed to chair the new conference Committee and is looking for further recruits and for further ideas for future conferences. Again please let the Secretariat know know by email if you have any ideas and can identify any key speakers.

The 2005 Professional Development Programme

Nick Jackson has managed to put together an excellent programme for 2005 and is included with this edition. Yet again this is the largest programme ever. Our thanks go to all the tutors who have agreed to contribute to this years programme and also to those who contributed so successfully to last year's programme. As I said last time the idea of the courses is that these are informal occasions where practitioners impart their experiences in particular topics to others in the field who are willing to learn. They are not formal training courses but they certainly count towards CPD for members.

New Fellows

At its meeting on 14th October, Council unanimously approved two new Fellows. These are Professor Alan Baker, at the University of Melbourne and Dr Martyn Kelly of the Bowburn Consultancy.

Alan Baker is Professor of Botany and his main interests have been in the evolution of metal tolerance and the uptake of toxic metals by plants. Before moving to Australia, he had worked for many years at the University of Sheffield and in the ECUS unit. He has over 250 publications in refereed journals, conference proceedings, abstracts and books. He is a member of several environmental organisations worldwide and the recipient of many research grants and commissions from industry and elsewhere. He is also a founder member of IEEM.

Martyn Kelly who runs the Bowburn consultancy has been responsible for the pioneering development of the use of diatoms in water quality monitoring. The Trophic Diatom Index was his brainchild and is a quantitative means of summarising the water quality tolerances of individual diatom taxa. It is a central feature of river quality monitoring in the UK and will be taken up in the EU water framework Directive. He has written over 40 research papers, made numerous presentations including several at IEEM conferences, been a committee member of CEN and the British standards Institute and has been a member of the IEEM Professional Affairs Committee since 2001.

Society for the Environment

Applications to become Chartered Environmentalists through the Society for the Environment continue to be received at a steady rate in the Office. We now have about 200 applications with about 70 processed so far. Do please bear in mind that the review of the applications is being carried out by members who have now become Chartered Environmentalists but there are pressures on their time and on the office in preparing the information. However progress in being made but it may be over two months before some members receive their certificates. Do please remember that unless you have at least 4 years experience, your application will not succeed and also you must be able to produce evidence of having undertaken CPD since the IEEM scheme was introduced. Some applications have had to be returned or rejected on one or more of these counts and is some cases where the repsonses to the 3 questions have been inadequate - do please consider the questions very carefully.

Newly Awarded Chartered Environmentalists

Mr Robert Bearne, Mrs Elizabeth Anderson, Miss Karen Buckley, Mr Peter Bullard, Mr Paul Burgess, Mr Robert Carr, Mr Maxwell Carstairs, Mr Muk Kwai Cheng, Dr Catherine Chisham, Professor Susan Christie, Mr Adrian Colston, Mr Jonathan Davies, Mr Martin Fox, Ms Alison Fure, Mr Justin Gillett, Mr Graham Goodall, Ms Jacqui Green, Mr Richard Green, Mr Richard Grogan, Dr David Hackett, Mr Alan Harpley, Mr David Harpley, Ms Marie Louise Heffernan, Dr David Hill, Mr Alan Hopkins, Mr Richard Howell, Mr Benjamin James, Mr Jeremy James, Mr Christopher John, Mr James Johnston, Dr Joanne Kirwin, Mr Nicholas Kite, Mr Jason Leach, Mr Paul Lee, Dr Shing Yip Lee, Mr Giles Manners, Mr Trevor Mansfield, Professor Robert Marrs, Mr Andrew McCarthy, Dr Evelyn Moorkens, Dr Catharine Mordaunt, Miss Jo-Ann Mosley, Mr Duncan Murray, Mr David Park, Dr Jo Parmenter, Ms Stephanie Peay, Dr Elise Percifull, Mr Stuart Pudney, Miss Gail Quartly-Bishop, Dr Roland Randall, Ms Paola Reason, Ms Elaine Richmond, Mr Andrew Shaw, Ms Ann Skinner, Dr Fred Slater, Dr Peter Smith, Miss Emma Stevens, Ms Caroline Tero, Mr Steven Thomas, Dr John Underhill-Day, Mr Simon Walsh, Mrs Claire Wansbury, Dr Robert Widdicombe, Dr Stephanie Wray.

Seminar in Ireland and Proposed Section – 20th January

Please note that there has had to be a change of venue for the Seminar. This is now to be held in the Burlington Hotel, Upper Leeson Street, Dublin 4. The meeting of members who would like to consider setting up a section in Ireland will be taking place as planned at the end of the seminar at about 4.30.

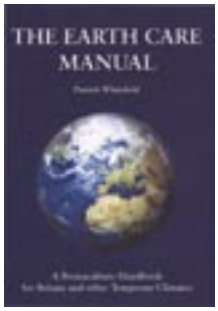
New Services online

Members may be interested to hear that the IEEM website has been revamped yet again. There are a whole host of new services available to members, from digital back issues of In Practice to professional guidance and even an online forum. Please visit www.ieem.org.uk for further details.

Christmas and New Year

Members of Council, the Directors and Secretariat would like to wish all members a Happy Christmas and a productive and ecologically active year in 2005.

Recent Publications



The Earth Care Manual
Author Patrick Whitefield
Available from Permanent Publications
www.permiculture.co.uk
ISBN 185623021X
Cost £34.95

The Earth Care Manual is a practical examination of permaculture. Permaculture at its root means taking natural systems as a model for our own human habits. Natural ecosystems have a habit of being sustainable and if we can understand the way they work we can use that to make our own lives more sustainable.

Permaculture was formulated in the '70s by two Australians Bill Mollison and David Holmgren. Permaculture has developed over time and continues to change and develop.

This book provides a guide to all who wish to have a good stab at permaculture. It discusses all the key topics that one might need to know: from the principles of permaculture to climate, water energy, food buildings woodland and information on designing the whole process. This really is the complete beginners guide.

If you are interested in the theory behind permaculture or would very much like to incorporate it into your lifestyle this book is for you.

Oaks, Dragonflies and People
Author Norman W. Moore
Available from Harley books
ISBN 0946589712
Cost £15.95

Norman Moore's book is a highly personal account of his own experience in the field of nature conservation. The book is spilt into two main areas. The first is his personal account of how he took an arable field adjacent to his house and converted it into a haven for wildlife. Moore describes how some 40 years ago he acquired a bare field adjacent to his home in Cambridgeshire and transformed part of it into a private nature reserve with a wood, a large pond and rough grassland. He details his successes in trying to attract the wildlife, which has subsequently colonized it as well as his failures. In his words: 'many people wish to encourage wildlife on their land but do not know exactly what to do or what they can expect to achieve'.

The second is his view of nature conservation in general and he relates his own local experiences to the wider conservation scene. The author's aim was to encourage farmers and owners of large gardens to create nature reserves by describing the pleasures which flow from such a project.

This is a highly entertaining book, which highlights that a haven for nature can be made even in your own back garden, albeit his was rather large. I recommend this book to anyone with a conservation interest.

Freshwater Fishes in Britain - the species and their distribution
Edited by Cynthia Davies (CEH), Jonathan Shelley (EA), Paul Harding (Biological Records Centre, CEH), Ian McLean (JNCC), Ross Gardiner (Fisheries Research Services) and Graeme Peirson (EA).
Available from Harley Books
ISBN 0946589763
Cost £25.00

This book is a joint project of the Environment Agency, the Centre for Ecology and Hydrology and the Joint Nature Conservation Committee. It is an account of the results of this project, which ran from 1998-2002. They are published in the form of 10km square dot-distribution maps for the 54 species inhabiting England, Scotland, Wales, the Channel Islands and the Isle of Man. These indicate the vulnerability of several of our native British species.

Following a wide-ranging introductory chapter, and further chapters on distribution and the history of the project, Chapter 4 comprises the individual species accounts under the headings: Description; Biology and behaviour; Habitat; Distribution in Britain; World distribution; Status; Hybrids and related species; and a final section of the relationship of each species with Man. Chapter 5 covers 'Conservation and Management of Freshwater Fishes'.

This book is informative and contains in the appendices Publications; Legislation; and Selected websites relating to environmental protection, biodiversity information and fish conservation.

Going With The Flow
Authors Billy Langley and Dan Curtis
Available from the Centre for Alternative Technology
ISBN 1 89804 918 1
Cost £12.00

Going with the Flow may not be considered as an ecological book. However, it is a comprehensive guide to generating electricity using small-scale waterpower. It is complete with technical illustrations and case studies and is ideal for anyone living near a watercourse and thinking about a micro-hydro system.

This book will act as a catalyst for the layperson interested in setting up their own water powered energy system. It is a step-by-step guide to the whole process – from the principles of micro-hydro power and the first thoughts of a scheme, through site evaluation, technical design and construction to the legal, environmental and economic aspects of small-scale energy generation. Ideal even for absolute beginners, Going with the Flow shows how individuals and communities can benefit from tapping Britain's water resource.

The book will help answer the majority of the burning questions that any beginner to hydro technology would come up with from "Have I got the right site?" to "which turbine should I buy?"

Along with The Earth Care Manual mentioned above with this book you really could lead the 'Good Life'. If you live on a watercourse and have thought about leading a sustainable life style I would give this book a look.

Prospective members of IEEM

IEEM is pleased to welcome applications for membership from the following:
If any exi
with the Code of Professional Conduct, they must inform the Executive Director by telephone or letter before 24th November, 2005. Any communications will be handled discreetly. The decision on admission is usually taken by the Membership Admissions Committee under delegated authority from Council but may be taken diectly by Council itself.

Full Membership Applications

Dr Martin C. Bailey, Ms Ione Bareau, Mrs Judith E. Bennett, Mr John A. Booth, Miss Rachel L. Cartledge, Mr Michael R. Davis, Mr Michael L. Downey, Ms Michelle Edwards, Mr Nicholas J. Ellis, Mr Ian J. Fairclough, Mr Dominic C. Farmer, Mr Richard J. Farmer, Mr James C. Frith, Mr Andrew Gardner, Dr Jacqueline M. Hay, Dr Gabriel Hemery, Miss Sarah Hoddinott, Dr Graham W. Hopkins, Dr Philip James, Miss Megan J. Klaar, Dr Edward S. Lawrence, Dr Lesley J. Lewis, Dr Durwyn C. Liley, Miss Erika R. Luukas, Mrs Carole A. Mander, Miss Elizabeth Manley, Mr Christopher P. Matcham, Dr Peter M. McEvoy, Dr Christopher McMullon, Dr Kathryn A. Medcalf, Mr Alexander M. Newman, Mr Ian J. Nesbitt, Mr John C.R. O'Sullivan, Mrs Helen Pengelly, Miss Clare E. Rawcliffe, Mr James N. Richards, Mr Gary S. Rushworth, Mr Jonathan M. Russ, Drs Jorgen R. Schouten, Mr Ryan Stead, Mr Neal Topham, Mr Jonathan D. Vaughan, Ms Amanda L. Vivian-Crowder, Mr Andrew Virtue, Mr Robin I. Webb, Mrs Karen Wright

Associate Applications

Mr Derek W. Allen, Mr Adrian G. Bliss, Miss Carole A. Brind, Miss Caoimhe Cawley, Miss Diana Clark, Ms Fay Collier, Mr Arthur J. Davis, Miss Harriet H. Dennison, Mr Pat Doherty, Miss Laura Donnelly, Miss Nicola E. Evans, Mr Timothy G. Field, Mr Barnaby J. Forrest, Mr Neil D. Graham, Miss Sarah E. Henshall, Miss Jessica M. Holliday, Miss Susan M. Jones, Mr Stuart J. Kato, Mr Richard A. Kingston, Miss Wendy J. Larcombe, Mrs Anne L. Law, Miss Rhian J. Leigh, Miss Fiona A. Luckhurst, Mr Timothy Marlow, Miss Jill McCormick, Mr James A. McCrory, Dr Tessa J. McGarry, Mr Peter J. McKeon, Mr Sean P. McNulty, Miss Caroline M. Mellor, Miss Sarah J. Mellor, Miss Fiona Montague, Mr David Orchard, Mr Philip Pearch, Miss Tamara A. Percy, Miss Julie Powell, Miss Alison Z. Reid, Mr Michael P. Shewring, Miss Jessy Simmance, Miss Rowena L. Staff, Miss Sarah J. Tunstall, Miss Hannah R. Walker

Admissions

Full Members
Mr Julian C. Balson, Mr David A. Bennett, Mr Geoffrey M. Carr, Ms Morwenna J. Christian, Mr Robin B. Cox, Mrs Joanne Cullis, Mr Neil J. Davidson, Professor Alan W. Davison, Mrs Nicola J. Davison, Ms Diane J.T. Dobson, Dr Michael K. Dobson, Dr Paul L. Duvergé, Ms Denise Exton, Miss Jemma L. Gaskin, Miss Rebecca Holder, Mr Stuart N. Ireland, Mr Andrew M. Jukes, Dr Adam V.A. Kwolek, Miss Abigail R. Lee, Mrs Linda A. lockhart, Dr Paul H. Lunt, Mr Lee Morgan, Miss Deirdre T. Murphy, Mr Christopher Needham, Miss Sarah L. Peaty, Mr Robert G. Raynor, Mr William H. Robinson, Mr Andrew J. Russell, Mr David A. Scranney, Mr Christian Smillie, Miss Jane E. Walsh

Associate Members
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Affiliates
Mr Graeme J. Ashton, Mrs Maralyn Pickup

Students
Mr Charles S. Bradshaw, Ms Stephanie I. Coates, Miss Jennifer Cunniff, Miss Sarah De Vos, Miss Joanna L. Edney, Mr Alistair Farquharson, Mr Christopher Farmer, Miss Anna L. McGrath, Miss Maral Miri, Mr Anthony C. Rogerson

Upgrades – Associate to Full
Miss Sarah Cane, Ms Stephanie V.L. Carr, Miss Clare Cheeseman, Mr Stuart Colgate, Mr Sean P. Flynn, Mr David S. Long, Mrs Helen J. Markwell, Miss Mieke Muyllaert, Mr Andrew McIlwraith, Mr Mark Mifsud, Ms Sharon Pilkington, Miss Hannah Price, Miss Alison

The Course programmes for 2005 for the Centre for Alternative Technology, Field Studies Council, Losehill Hall, Plas Tan- y- Bwlch and BTCV are all now available. 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 70590, Fax: 01654 702782, http://www.cat.org.uk

Field Studies Council: For a copy of the FSC Courses 2005 brochure, contact FSC head Office, Preston Montford, Montford Bridge, Shrewsbury, Shropshire, SY4 1HW. Tel: 0845 345 4071, Fax: 01743 850 101, e-mail: enquiries@field-studiescouncil.org, www.fieldstudiescouncil.org

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@peakdistrict-npa.gov.uk, http://www.losehill-training.org.uk

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: info@btcv.org.uk, http://www.btcv.org

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12 January. Update on BAP process. Billingham Beck Ecology Park, Billingham, Cleveland (just off the A19). Time 7.00pm. The BAP officer for Durham & Tees Valley will bring us up to date on where the process has got to and is the next step a regional BAP? This is an IEEM North East Section Meeting.
Details from Steve Pullan steve.pullan@virgin.net

26 January. EU Water Framework Directive – River Characterisation and Planning. Exeter. CIWEM Local Event
Details from Jim Street 01872 270283 jim@jimstreet.wanadoio.co.uk

27 January, 10 and 24 February. CIRIA - Working with Wildlife Training and Resource. Various Locations. Designed for those managing or working on development sites. Will provide guidance on the actions to be taken to manage constructions impact on wildlife.
Details from www.ciria.org/events.htm

28 January Regulation for Environmental Protection. National Museum of Wales, Cardiff. This one day conference, with an optional field trip to the Cardiff Bay Barrage on the previous day) seeks to bring regulators and regulated sectors together to share experiences, explain difficulties and set out ideas for better practices, in the context of their respective businesses and concerns for the environment.
Details from http://www.iwoweb.plus.com/images/IWA Cardiff.doc

31 January -1 February. 'Focus on delivery' World Wetlands Day Conference 2005. The aim of this conference is to bring together all the key organisations in the UK involved in wetlands issues to share knowledge, discuss innovative techniques, network, consider good practice case studies and promote multiple use and wetland biodiversity.
Details, email Justin Taberham: Justin@ciwem.org

23 February. Surveying for Bats and Development – The Consultants Approach. Beckenham, Kent. This workshop will include an overview of bat ecology and the law, appropriate survey techniques, the survey effort required, methods of data analysis, how to deal with that missed bat and how to meet the client's requirements. IEEM Workshop.

24 February. Geology, Hydrogeology, Hydrology and Landfill.
Aimed at those professionals involved in the development, management, or regulation of landfills, this course provides delegates with an understanding of the essential elements of geology, hydrogeology and hydrology required for the proper design and operation of such facilities.
Details from 0 1604 620426 or e-mail training@ciwm.co.uk

9 March. IAgrE Annual Conference - Sustainability in Engineering Design. Harper Adams University College, Shropshire
Details from e-mail gwakeham@harper-adams.ac.uk or www.iagre.org/index1.htm#anconf

9 March. The Conservation of the Large Heath Butterfly. Durham Wildlife Trust, Rainton Meadows, Chilton Moor, Houghton-le-Spring. Time 7.00pm. He will look at the habitat requirements and site management for large heath butterflies This is an IEEM North East Section Meeting.
Details from Steve Pullan steve.pullan@virgin.net

9 & 10 March. Aerial Photo Interpretation and Habitat Mapping. Wellington, Somerset. The day will primarily deal with use of digital aerial photos but will also cover use of paper aerial photos and stereoscopes, as well as sources of aerial photo imagery. IEEM Workshop.

16 March Roads and Wildlife. Cardiff, Wales. Participants will explore interactions between issues within the context of the Highways Act 1980, rather than the Town and Country Planning Act 1990. IEEM Workshop.

17 March. Professional Practice: Tendering Guidelines. Grantham, Lincolnshire. Covers costing, liabilities, sub-contractors, sole traders, specifications, schedules of quantities and responsibilities towards the client over the administration of tenders. IEEM Workshop.

17 March. Using Bryophytes as Habitat Indicators. Orpington, Kent. This is an introduction to the more widespread or distinctive heathland, woodland and grassland species, their ecology and identification in both field and laboratory. IEEM Workshop.

17 & 24 March. Ecological Evaluation and Impact Assessment. Scottish central belt – probably Perth or Stirling. It will concentrate on current areas of difficulty, such as habitat and species evaluation, and the assessment of impact significance, with the use of case studies. IEEM Workshop.

17 March. Habitat Management Conference. Manchester Metropolitan University. One day conference to showcase current best practice. The conference will be divided into three sessions: two oral sessions with invited experts, and a poster session. Offers of posters are welcome.
Details form e.price@mmu.ac.uk.

31 March - 2 April. Major international event: 'Crisis and Continuum in the Shaping of Landscapes'. Sheffield Hallam University. Includes a major review with English Nature of the work of Dr Frans Vera on impacts of large grazing herbivores.
For more details, contact Diane Harrison info@hallamec.plus.com or telephone 0114 2724227

24 May. GIS in Conservation. Developing new ideas and good practice. Cranfield University.
Details from a.r.yallop@cranfield.ac.uk or 01525 863008

For Details of all IEEM Workshops contact Nick Jackson Tel: 01962 868626; Email: nickjackson@ieem.demon.co.uk
or Website: www.ieem.org.uk