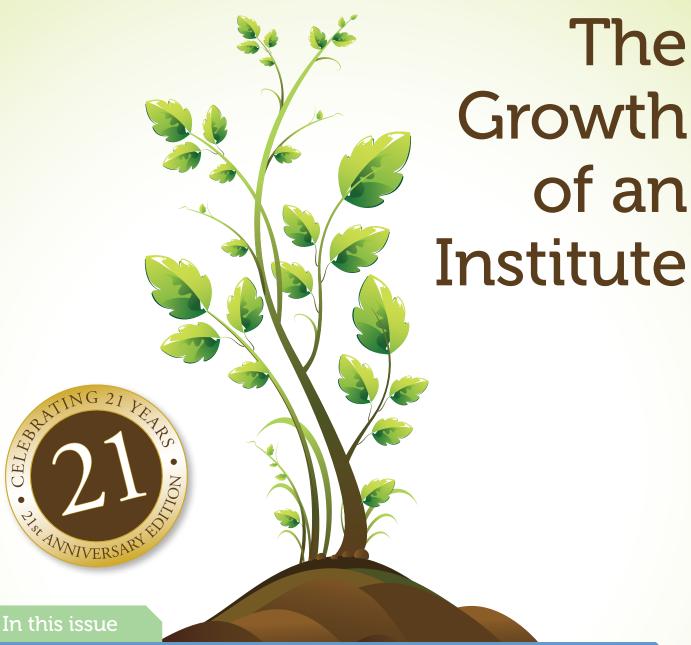
Bulletin of the Institute of Ecology and Environmental Management

inpractice

Issue 76 | June 2012



Why a New Institute?

IEEM in Practice -The First 21 Years Personal Thoughts From a Founding Member

Welcome

From your President

It is a great privilege and pleasure to be your President for our 21st birthday. I was one of the first Founder members of the Institute that Paul Goriup mentions (number 10!), so it is particularly gratifying to have been a small cog in the gradual development and expansion of the Institute as described in this issue of *In Practice*. It is always difficult to start such an ambitious venture but their accounts show just how much was going on, often frenetically, behind the scenes, to ensure that your Institute grew in stature and recognition, provided a necessary service to its members and upheld the professional standards that are so dear to us. Those of you who are fellow Founder or early members will be able to cast your minds back to how it was, and hopefully compare this positively with how it is now. I hope you will recognise a seismic shift. Think how the membership has grown from those first few to nearly 5,000 in just 21 years. Think how *In Practice* has changed in appearance and content – and the latest new layout and content are really creative and attractive don't you think? Then look at the conferences and workshops – think how the subject matter has developed with new ideas in our profession. There was no Habitats Directive 21 years ago, no CROW Act, no NERC Act, no Water Framework Directive and many more. Think too how the vernacular has changed – biodiversity was not part of our everyday language 21 years ago, (what was wrong with nature conservation, which actually has a broader meaning, I still ask!), let alone ecosystem services, the significance of climate change, the importance of carbon in soils – and so it goes on. We were probably thinking about many of these concepts, but in a different language and with a different emphasis.

So what of the future? Sally Hayns, our CEO, outlines some of the developments in the pipeline, the most important of which is the potential to offer our own Charter. You will see that there are plans to increase the services to you, to develop a competency framework to assist in our professional development, to work hard to raise professional standards and to continue to provide challenging and stimulating conferences and functional workshops.

So what is your image of the Institute over the next 21 years? Chartered professional ecologists and environmental managers, regarded as equals in expertise and professionalism to other Chartered institute members, working to high standards, accepted as an integral part of the professional world in a positive, creative manner, with positive outcomes for the environment and nature conservation, itself recognised as an essential part of everyone's lives and wellbeing? Too ambitious? I would like to think not – but it is up to you, the members, and all those not yet signed up, but at the beginning of your careers, to see that this vision is realised. I look forward to watching you achieve it, hopefully in my lifetime.

Penny Anderson CEnv FIEEM

IEEM President

Information

In Practice No. 76, June 2012 ISSN 1754-4882

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In Practice is printed on paper using 100% post consumer de-inked waste. This is manufactured by an ISO14001, EMAS and Nordic Swan accredited company.

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Biological recording since the 1962 Atlas of the British flora

In 2012, the Botanical Society of the British Isles (BSBI) celebrates 50 years since the publication of the Atlas, a seminal work representing a quantum leap in species distribution recording and mapping. The Atlas has had a major influence on European scientists and naturalists studying diverse taxonomic groups; BSBI is marking this achievement with a two-day international conference, organised jointly with the Royal Botanic Garden, Edinburgh, where the conference takes place on 20th-21st September 2012.

Twenty-five speakers from the UK, Sweden, Belgium and Czech Republic will discuss the history, legacy and impact of the Atlas; explain how data from biological recording are used to analyse spatial distribution patterns and temporal trends; relate these to information on land use, climate and genetics; and highlight challenges and advances in species recognition and data analysis.

For bookings and a full programme, please go to www.bsbi.org.uk/conference.html.



Bat Conservation Trust Training Standards

The aim of the Professional Training Standards project is to provide a set of standards for professional bat surveyors (consultants, ecologists, *etc.*) relating to bat work in the UK. These standards cover the variety of work that a professional bat surveyor may be asked to do and outline the level of knowledge and skills expected of an individual to perform key tasks.

www.bats.org.uk/pages/professional_ training_standards.html



Asian hornet response plan

Fera, in consultation with Defra and its Non-native Species Secretariat, has produced a response plan for the Asian hornet (*Vespa velutina*) which aims to intercept and eradicate this species should it arrive in Britain. The response plan can be found at *http://bit.ly/JN3WtQ*. A vital part of the response plan is the early detection of this species in order to allow rapid eradication before it becomes established. Stakeholders are asked to report any Asian hornet sightings as soon as possible to alert_nonnative@ceh.ac.uk or 01904 462510 (National Bee Unit at Fera). ID sheets and Alert Posters can be downloaded from http://bit.ly/K7QsOl and http://bit.ly/HKRIUJ. Further advice and information on this species can be found at http://bit.ly/lpmKmM and http://bit.ly/lxQo4H.

Red Tape Challenge - Environment

Defra has released its proposals arising from the Red Tape Challenge on environmental regulation, although these are still subject to further consultation. Regarding biodiversity and the natural environment, 35 regulations will be scrapped and 69 will be improved. None of the regulations to be scrapped are of direct concern to the ecological and environmental management profession, and the majority of the regulations to be improved fall into category 5 (regulations to "be consolidated but the provisions will remain the same"). Furthermore, Natural England will continue to improve the way it regulates by, amongst other things, working with partners to explore ways of raising standards in the ecological consultancy profession, offering chargeable training courses and examining the scope for accreditation (e.g. chartered status) to enable further building on the principle of earned recognition. http://www.defra.gov.uk publications/2012/03/19/pb13728-red-tape-environment/

Bat Conservation Trust Survey Guidelines 2nd Edition

Following feedback from experts in the field and authored by professionals, the Bat Conservation Trust has updated and revised the *Bat Surveys: Good Practice Guidelines*. In line with the latest evidence and best practice the second edition features new chapters and content, with revised advice and guidance. BCT has made the full document available for free in a PDF that cannot be printed out to reduce waste. Pre-order your hard copy from NHBS (£24.99).

www.bats.org.uk/pages/batsurveyguide.html

Planning reform in England, Scotland and Wales

The UK Government has published its final version of the National Planning Policy Framework (NPPF), which sets out the Government's planning policies for England and how they should be applied. The final NPPF is an improvement (for nature conservation) over the initial draft that went out for consultation in 2011, however there are still some concerns. The final NPPF document (published on 27 March 2012) can be downloaded from http://bit.ly/gsGBXF.

In Wales, the Welsh Government has recently been through a process of calling for evidence on specific questions and issues relating to the planning system and its delivery. There will be a report in May/June 2012 with recommendations based on the findings. A White Paper will be published in 2013, and a Planning Bill will be introduced to the Assembly in its 2015-16 session. More information on planning in Wales can be found at http://wales.gov.uk/topics/planning/.

Scotland is also updating its planning system, with plans to streamline and improve efficiency in order for the planning system to support economic recovery. For more information on planning in Scotland see www.scotland.gov.uk/Topics/Built-Environment/planning.



White-tailed sea eagles nest in Ireland for the first time in 100 years

A pair of white-tailed sea eagles has been confirmed nesting near Mountshannon in County Clare - the first documented nesting attempt for the species in Ireland in over 100 years. Although the nest has not been examined for eggs to avoid any unnecessary disturbance, the behaviour of the birds indicates that they have nested. The re-introduction programme, which is funded by the Department of Arts, Heritage and the Gaeltacht in partnership with Golden Eagle trust, began in 2007 with the birds in question having been transported from Norway in 2008 and 2009.

http://bit.ly/lzPHNG

Habitats Regulations Implementation Review for England

Completed in March 2012, the main outcomes from this review were that in the vast majority of cases the implementation of the Directives is working well. The review did however elaborate on the scope for improvement in four main areas:

- Complexity of legislation and guidance;
- Complexity of the authorisation process for development;
- Availability and comparability of data; and
- Culture and capacity of all organisations involved in the process

Considering the evidence submitted, Defra has identified four key areas where change will improve implementation of the Directives for the benefit of both the economy and the environment:

- Facilitating nationally significant infrastructure projects;
- Improving implementation processes and streamlining guidance;
- Improving the quality, quantity and sharing of data; and
- Improving the customer (i.e. developer) experience

The review lists 28 measures put forward to address the above areas for change, including two that specifically mention IEEM:

- Defra, Natural England and other delivery bodies will work with IEEM to support them in the development of the Charter Mark for Ecologists
- Defra will hold a workshop with IEEM and the Association of Local Government Ecologists (ALGE) to explore new ways to manage ecological expertise

An implementation plan will now be developed by Defra, with a progress report issued in March 2013.

http://www.defra.gov.uk/publications/2012/03/22/pb13724-habitats-wild-birds-directives/

Practitioner's Perspective – linking research and practice

The British Ecological Society's *Journal of Applied Ecology* has launched a new initiative called Practitioner's Perspectives to help bridge the gap between applied ecological research and practical environmental management by providing a platform within the pages of the Journal for individuals involved in hands-on management of ecological resources. The aim of the initiative is to better link ecological research and practice, with articles being contributed by anyone with a "strong opinion on the current state of applied ecology research, whether academic or not, as long as they can provide an original perspective and a constructive way forward." Papers published so far address topics including building the evidence base for EcIA and practical action for bumblebee conservation. All of the papers are freely available at www.journalofappliedecology.org/view/0/PractitionersPerspective.html.

There is also a useful introduction to the initiative at http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2010.01938.x/full#.

If you are interested in finding out more about contributing a paper please contact managingeditor@journalofappliedecology.org in the first instance.

Integrated Habitats Design Competition

The Integrated Habitats Design Competition champions working with nature and natural systems, ensuring biodiversity and biodiverse green infrastructure are integral to the design, construction and management of the built environment. The IHDC is open to all, and welcomes interdisciplinary approaches that show how to combine ecological, spatial and social understanding. The deadline for entries is 30th June 2012. http://ihdc.org.uk/

Project shows way forward for the future of the Scottish wildcat

An innovative project to save the Scottish wildcat reached its conclusion in April 2012 with the announcement of key achievements and future objectives. The Cairngorms Wildcat Project, based in the Cairngorms National Park, has provided a unique insight into one of Britain's most endangered species that was, without prompt action, threatened with extinction. Scientists estimated there were only around 400 Scottish wildcats, known affectionately as the Highland Tiger, left in the wild. The most significant threat to wildcats is from 'hybridisation'; or interbreeding with domestic cats. The project has shed further light on the numbers and distribution of wildcats, feral domestic cats and hybrids.

www.cairngorms.co.uk www.highlandtiger.com



Free Climate Factsheets

Recently, media interest in climate science has declined, and the public has become somewhat more sceptical about its veracity. Yet the evidence base itself has only become more robust in that time. The Public Interest Research Centre has put together a set of factsheets, covering the evidence for climate change from a range of angles, such as global temperature trends and Arctic ice melt, and traces the fingerprint of climate change in various phenomena, from floods and heatwaves to wildfires and species extinctions. Each briefing contextualises the issue in question, summarises the background science, and addresses common objections raised by sceptics. Drawing on the latest peerreviewed studies, they are intended to be a solid, reliable and concise guide for climate science communicators. http://bit.ly/Hwr6Jf.



Bird synopsis from Conservation Evidence

Conservation Evidence has published its latest synopsis of conservation interventions, this time on bird conservation. The synopsis is available to download for free.

www.conservationevidence.com

Green Infrastructure will save cities money

A Natural England study by Tim Sunderland has found that putting green infrastructure (such as parks, gardens and trees) at the heart of neighbourhoods can bring significant economic benefits. The findings come from a comprehensive, year-long assessment of a number of studies into the economic value of green infrastructure. The study found that:

- People are prepared to pay 19% more for homes near a park
- People with good access to green space are 24% more likely to be physically active
- A 10% increase in green space in a city like Manchester could prevent a temperature rise of more than 3°C

The evidence contained in the studies suggests that a range of economic benefits can be gained by planning for the needs of pedestrians, cyclists and wildlife in our urban communities.

www.naturalengland.org.uk/about_us/ news/2012/030512.aspx

70 millionth dataset uploaded to the NBN Gateway

The National Biodiversity Network has announced the upload of the 70 millionth species record to the NBN Gateway. The species in question is *Parmelia saxatilis*, a lichen with a broad distribution.

www.nbn.org.uk

Business Improvement Through Ecology (BITE)

BITE will be a website-based toolkit of practical resources for the enhancement of ecology using a range of business improvement techniques, such as Key Performance Indicators (KPIs). BITE will draw on information that is currently available and create a single source for this information. It will look to draw on the best practice within the industry collating the information to create an innovative and free online resource. The project is still looking for funding.

For more information contact Louise.Clarke@ciria.org.uk.



TEEB in Local and Regional Policy and Management

The Economics of Ecosystems and Biodiversity (TEEB) project has published the final volume in its influential series. The publication explores the potential for local development provided by an approach based on nature. It offers examples of successful implementation of this approach from across the world, highlighting the importance of local decision-making in management and planning. It provides tools and practical quidance for reform, and throughout the volume the economic benefits of environmental consideration at a local level are expounded. The local aspect of this book complements the focus of the previous three volumes, completing the set to provide a comprehensive approach to simultaneously improving and maintaining economic and environmental stability, as well as human well-being.

www.teebweb.org



Why a New Institute?

David Goode FIEEMIEEM Patron

I have been asked to provide my reflections on why the Institute was set up. What were the driving forces behind this new venture, what were the aspirations of those involved and who were the prime movers? In a nutshell what were the problems, why did we need a new Institute and what did we expect it to do? I was one of a small group who came together to consider the issues and I suspect that we will all have different recollections of people's concerns and motivations. This is my recollection of the events that led to the setting up of IEEM, but I have been assisted by finding, in the depths of my archives, the minutes of several crucial meetings which paved the way. Paul Goriup helped by providing a chronology of key events. I have also drawn on articles written during the late 1980s which illustrate some of the problems which led us to take

action and we are fortunate in having Tony Bradshaw's own recollections published in the first *Bulletin* of IEEM and again 10 years later.

To understand the nature of the problem I have to take you back to the 1980s and try to provide a picture of the way ecology and nature conservation operated at that time. The British Ecological Society (BES) was the body to which most academic ecologists belonged and they still do. Ecological research was largely carried out in universities, together with important national research centres of NERC, notably the Institute of Terrestrial Ecology, which had previously been the research arm of the Nature Conservancy (the forerunner of the national agencies). In broad terms, research carried out in universities was aimed at understanding ecological processes and there is a wealth

of material published in the various journals of the BES and elsewhere. The *Journal of Applied Ecology* in particular contained numerous papers on ecological management. This is the hard science of ecology, which has been promoted successfully by the BES as an academic discipline since it was founded in 1913.

However I think it is fair to say that most ecological research at that time was distant from the direct practical needs of nature conservation and the wider requirements of environmental management. For the research community, ecology meant the study of ecosystems in one form or another. Indeed when I joined the BES in 1964 the word ecology was hardly used outside the academic world.

Feature Article: Why a New Institute? (continued)

As the environmental movement got underway 'ecology' acquired a broader meaning. I well remember a professor of ecology in the early 1970s bewailing that "they (meaning the media) have stolen our word!" The BES has always held the view that it was there to advance and support the science of ecology and that it should not become involved in matters of professional practice.

Times were changing. For a number of reasons there was a burgeoning of ecological consultants. It was partly due to the requirements of new legislation. The Wildlife and Countryside Act of 1981 resulted in a range of species being subject to special protection and developers soon found it necessary to take advice from specialists. Others were involved in ecological surveys, Environmental Impact Assessments (EIAs) and nature conservation evaluation. Expert witnesses were increasingly required at public inquiries. Countryside management became a major activity in many local authorities. The newly developing field of habitat creation and translocation offered another range of opportunities for ecological consultants. The pace of life for ecologists suddenly quickened.

Meanwhile ecology was fast becoming an integral part of environmental planning. In the 1970s a government investigation of the relationship between ecologists and planners concluded that there was a major communication gap between the two groups. But by the 1980s the situation had changed dramatically. Nature conservation became an accepted element of structure plans and other regional or local planning strategies. As well as the national series of Sites of Special Scientific Interest (SSSIs) there were by then many second-tier sites designated by local authorities, often through collaboration with Wildlife Trusts. The expanding role of the voluntary sector, particularly the county Wildlife Trusts and urban wildlife groups, together with the RSPB, all had an influence on the effectiveness of local plan policies for nature conservation. But as conservationists became more successful, so developers found it necessary to employ ecologists to support their case at public inquiries. Tensions mounted. An article by Colin Tubbs entitled 'The Environmental Witness' (ECOS 1988) reflected the exasperation felt by dedicated conservationists. As it happens it provoked a response from Penny Anderson, already

a long-established consultant, who pointed out very firmly that she would not accept a job that would compromise her principles. Apart from the ethical question, the debate highlighted the unregulated nature of ecological consultancy work, where almost anyone could set up as a consultant without any relevant training or qualification.

But the issue of professionalism in ecology went wider than consultancy work.

Compared with town planning, architecture, civil engineering and even landscape design, ecology is a relative newcomer and has only recently begun to find its feet. Forgive me if I use my own career as an example. As an ecologist I spent 15 years working as a civil servant for the Nature Conservancy.

Like many other practising ecologists I was a member of the British Ecological Society, but did not see the need to be a member of a professional institute. That was until 1982 when I became Senior Ecologist at the Greater London Council.

There almost every senior officer was a member of a professional body. For many, such as planners and architects it was a requirement of the job. Most were supported by in-service training courses and there were codes of professional practice unknown in ecology. I remember too that these senior officers seemed surprised and somewhat relieved when we first met, to find that I did not fit their image of an ecologist. I dressed like any other professional officer. It seemed I could easily be one of them!

At that time ecologists could join one of the existing professional institutes. So it was possible to become a member of the Environment Division of the Institute of Biology, or a Landscape Scientist in the Landscape Institute. But none of these catered specifically for the practice of ecology. The working panel of local authority ecologists provided a forum for discussion of key issues and was just starting to produce toolkits to improve professional practice, but it fell far short of what was really needed, which was to set up our own professional institute.

Several years elapsed during which there were frequent discussions among practising ecologists, particularly those working at the interface with planners, about the need for greater professionalism in ecology. The context in which such debates took

place was rather special. The 1980s was an extraordinary decade, with many new environmental initiatives. It has been suggested to me that the need for an 'Institute of Ecology' came to a head at a time when public consciousness about the environment suddenly became a major issue. The Brundtland Report and World Conservation Strategy were both published in the 1980s and had a profound effect in raising awareness of environmental issues. For the first time the link was made between ecology and economics. The concept of sustainable development became widely accepted remarkably quickly. Social consequences of inequitable distribution of resources began to hit the headlines. Ecology had entered the world stage. There was something much bigger going on than our rather parochial concerns. A willingness for people to accept the need for specialists in ecology may have been part of this wider picture. Ecology was becoming recognised as a crucial discipline, important not only for the future of the planet's ecosystems and wildlife, but also for human survival. Ecology needed to grow up to do the job. But it needed a catalyst to make things happen.

Then in 1987 the British Association for Nature Conservationists (BANC) took the initiative. BANC had already established itself as the radical arm of nature conservation when Alan Woods published his article entitled 'Professionals in Nature Conservation' in ECOS (1987). This was based on a paper submitted to BANC Council which recommended that a Professional Affairs Committee (PAC) be formed, which amongst other things would "investigate the need for, and feasibility of establishing, a separate institute for professionals in nature conservation". His article addressed four main problems: 1) salaries, working conditions and career structure; 2) the need for dedicated training courses; 3) standards of professional competence; and 4) the need for a code of conduct to regulate the activities of ecologists working in nature conservation. The response was not entirely favourable, particularly from those working within the voluntary sector who felt that calling the paid workers professionals would further devalue the role of volunteers. However, BANC moved quickly and the first meeting of the PAC was held in December 1987.

A year later in December 1988, after much deliberation, it decided to draft a constitution and code of professional practice for a putative 'Institute of Natural Resource Managers', with a founding conference planned for autumn 1989. In January 1989, BANC completed a review of existing professional bodies that made provision for ecologists, concluding that they all fell short in some way. The lack of full membership and absence of an appropriate code of professional practice applied to several bodies. There was also a very strong feeling that ecologists did not have sufficient recognition as fellow professionals within the Institutes concerned.

By this time BANC was not alone in its aspirations. Other initiatives were happening. The founding of the European Federation of Environmental Professionals (EFEP) in November 1988 provided an added stimulus for ecologists to get their house in order. But it also prompted existing professional institutes to take a more active interest. On 24th January 1989 the President of the Institute of Biology met with Sam Berry, the President of the BES, together with Peter Edwards (BES) and John Marsden from the Linnean Society, to explore how the professional status of ecologists could be recognised through the Institute of Biology (IoB). One suspects that the IoB was becoming worried. It was agreed that a working party of the BES and IoB should be established to explore the matter. Shortly after this, another group met at the Linnean Society on 3rd February 1989 "to discuss the growing need for formal recognition of the professional status of ecologists". The group included Sam Berry and Peter Edwards from the BES, Sue Vincent from BANC, together with myself, David Stubbs, Barrie Goldsmith from UCL, Monica Hale and Martin Cahn, the Secretary of the recently formed EFEP. These were predominantly practitioners who had a good grasp of the issues involved and I believe this was the most crucial meeting in the lead up to the formation of IEEM.

David Stubbs presented a paper entitled 'Towards a professional body for conservation ecologists in the UK' in which he argued that a new Institute must be set up to "provide professional status and benefits for all those individuals working in nature conservation and ecological management fields in the

ECOS 8(2) 1987

Professionals in Nature Conservation

Who are the professional people who work in nature conservation? What problems do they encounter in their work, both as individuals and as a group? Are there any solutions? It is suggested that BANC could play an important role in tackling some of the issues which face professionals in nature conservation.

ALAN WOODS

In recent years, the number of people who earn their living from work in nature conservation has grown rapidly. The statutory conservation agencies, voluntary bodies and local authorities have shown appreciable increases in staff, and many environmental consultancy firms have been established. Those embarking on careers in nature conservation have had to confront a number of problems: these include low professional status, poor salaries and ethical conflicts. It is these problems, and the wider issues which they raise, that are the focus of attention in this paper.

It is important first to define what is

It is important first to define what is meant by 'professionals in nature conservation': they are defined here, in general terms, as people who earn a living – either wholly or substantially – from

work in nature conservation. In contrast, whose contribution to conservation is no less important - are those work in nature conservation is unpaid. In more specific terms, the 'core' body of 'professionals in nature conservation' includes people campaigning for policy changes (in both statutory and bodies), voluntary evaluating implications for conservation of development proposals (e.g. private consultants, local authority ecologists), advising on conservation practice (e.g. FWAG advisers), or managing land specifically for nature conservation (e.g. county trust officers, reserve wardens). Beyond these 'core' categories, there are many other people who could also be described as 'professionals in nature conservation' - for example, those who work as administrators and fund-raisers in nature conservation bodies. Their work is no less essential than that of those 'up front'. However, the ideas outlined below are mainly directed at the people who fall into the 'core' categories.

A crucial distinction must be made: that

between professionals in nature conservati and professional nature conservationists. The first category is defined, as outlined above, in terms of employment and income. The second category forms a smaller sub-set of the first. The professional nature con-servationists are those who have a personal commitment to some sort of con ethic, to a range of conservation ideals. Not all professionals in nature conservation have this sort of commitment - for example ecologists who appear at public inquiries and give evidence against the local county trust which is trying to preserve a valued site from development. Professionals in nature conservation, then, are not necessarily conservationists - and do not necessarily regard themselves as such. This paper is with the issues facing all professionals in nature conservation - not just those who are professional nature conservationists. The latter face a particular

ECOS article from 1987

UK". Sue Vincent made it clear that BANC recognised the need for a professional body, but had decided not to set up such a body itself. Peter explained what had happened at the meeting with the loB. The feeling of the meeting quickly became clear, that the establishment of professional status through the IoB was not the best option. Most of us felt that "a new independent group was preferable, which would be more focussed upon the particular needs and interests of ecologists and those working in conservation". We agreed that a working party was needed with a rather broader membership than just the BES and IoB, to include representatives from BANC, the Working Panel of Local Authority Ecologists and EFEP. We agreed that the BES should be asked to take the initiative and set up a Working Party. It was suggested that Professor Tony Bradshaw would be a suitable chairman. David Stubbs agreed to act as Secretary.

By 15th February 1989 the BES Ecological Affairs Committee had agreed to set up the Working Party along the lines suggested. A subsequent BES workshop offered an opportunity for members to make suggestions. There was agreement that a new Institute should be broadly based, catering for ecologists working in natural resource management or environmental management. BES members recognised that the gap was in *ecology*, not just nature conservation or countryside management.

My notes include comments such as: "It must provide advice and training for its members, not just the letters after the name" and, "There is a need for pedigree, credibility, support and a critical mass". One senior figure said "Keep the BES in control!". Others felt that it should be independent, but sponsored and promoted by a range of existing bodies to give credibility and pedigree.

Feature Article: Why a New Institute? (continued)

The first meeting of the BES Working Group was held on 31st March 1989 under the chairmanship of Tony Bradshaw. David Stubbs was secretary. Other members were myself, Peter Edwards, Paul Goriup, Richard Knightsbridge and Martin Cahn. The group was expanded later to include representatives from Institute of Transportation Engineers (ITE), Nature Conservancy Council (NCC), Royal Geographical Society (RGS), Institution of Environmental Sciences (IES) and IoB. It met eight times, the final meeting being in September 1990. By the end of March 1989 BANC PAC had reviewed a draft Code of Professional Conduct prepared by Paul Goriup, Sue Everett and Duncan Poore. In April the code of practice and draft constitution for a new institute was adopted by BANC and PAC was then dissolved. The document still referred to the new body as the 'Institute of Natural Resource Managers' and the subtitle 'A discussion document for the formation of a professional body representing nature conservationists' indicates that it was intended primarily for BANC. However, it was adopted as a working document by the BES Working Group at its meeting on the 9th May. (I still have a copy on which I had inserted the word 'Ecology' in the title and deleted 'Managers'.)

At that stage there were still some within the Working Group who were more concerned with issues affecting nature conservation, rather than developing a wider professional role for ecologists. But by the time we met in June the name 'Institute of Ecology and Environmental Management' was adopted by the Working Group and at the next meeting a preliminary timetable was agreed with a projected launch date of April 1991. The IoB was brought back on board by August after an unfortunate oversight had resulted in their absence from earlier discussions. The final meeting of the Working Group was held in September 1990 after which it submitted a report to the BES recommending the establishment of IEEM and setting out the steps for its implementation.

Much preparatory work was done in autumn 1990. A questionnaire was issued in the BES Bulletin and in the BANC journal ECOS asking members for their views on our proposals. A total of 650 replies were received which was an exceptionally good response. The verdict was overwhelming. Ninety percent of respondents considered there was a need for



a new institute to represent ecologists and environmental managers. A large proportion of these were already members of a professional body, particularly the IoB. Peter Edwards quoted some of their responses in the first volume of the IEEM Bulletin in October 1991 (see the next article in this edition of *In Practice* for a reprint). Some of the expectations listed there still sound alarmingly familiar!

Members of the BES Working Group were particularly keen to have support from a range of existing bodies to ensure that the new Institute would have credibility. The BES, RGS and BANC all agreed to provide support as parent bodies, with representatives on the interim council. By February 1991, after seeing the results of the questionnaire, the IoB also agreed to support the Institute. The BES went further by providing substantial funding to get the new Institute off the ground.

The first meeting of the Interim Council was held on 1st March 1991. Tony Bradshaw was elected as Chairman, Peter Edwards as Secretary and Phillip Edwards (representing IoB) as Treasurer. Carol Crawford and Derek

Ratcliffe attended on behalf of BANC. Other representatives were David Harding (IoB), and Nigel Winser (RGS). David Stubbs and Martin Cahn were co-opted. Paul Goriup was appointed as acting Executive Director. Other members were subsequently co-opted to the Interim Council including myself and Jane King. The Inaugural Meeting of the Institute and first general meeting was held at the Royal Geographical Society on the 26th September 1991.

The rest, as they say, is history. But it is a history that I am proud to be associated with.

About the Author

Yet Another Professional Institute!

Peter Edwards

This was the opening article of Volume 1 Number 1 of the Institute's *Bulletin* (which became *In Practice*) in October 1991. The complete first edition can be downloaded from the IEEM website.

Why do we need yet another professional institute? Who is going to join it, and what will it do? The working party set up by the BES [British Ecological Society] spent two years investigating these questions before it finally concluded that a new organisation was essential to represent ecologists and environmental managers. One of its most important sources of evidence in reaching this conclusion was a questionnaire issued during 1990 in the BES Bulletin in the BANC [British Association of Nature Conservationists journal ECOS. Ultimately, the membership of any organisation is self-selecting, and the IEEM will come to reflect the concerns and interests of those who choose to join it. However, it may be of interest to paint a profile of the interests and concerns of the respondents to the questionnaire. The questions concerned the need for a new institute and whether the working party's proposals were supported; respondents were also asked about their current employment and their professional affiliations, and were invited to comment on the proposals.

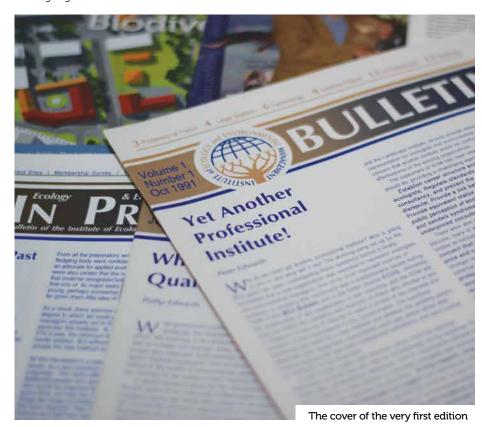
A total of 650 replies was received, which from the previous experience of these journals, was an exceptionally strong response. The verdict was overwhelming. Ninety percent of respondents believed there was a need for a new institute to represent ecologists and environmental managers, and supported the proposals. "Strong support", "long overdue", "vitally important" and "urgent" were among the most frequent comments. Several replies endorsed the need for a code of conduct based upon fundamental principles of environmental ethics. As one comment put it, "a code of practice and evidence of professional competence are urgently required to eliminate the 'cowboys'." There were several calls that the institute should set high standards of entry in order to gain credibility, but others were concerned that there should be the opportunity for entry

for those without formal qualifications in a relevant subject.

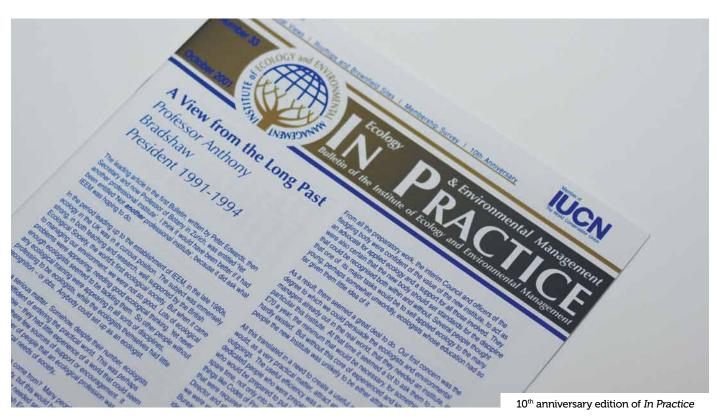
Most of the respondents who opposed a new institute did so for two main reasons. One group expressed an antipathy to professional bodies of any kind, some suggesting that they were elitist and served only to provide letter to place after one's name. One respondent, himself an employer of ecologists, even stated that he would discriminate against anyone who was a member of IEEM. However, the majority of dissenters felt that existing organisations, and particularly the Institute of Biology [now the Society of Biology] and the Landscape Institute, already provide adequate professional representation for ecologists and environmental managers. There was concern that another institute would be confusing, and would reduce the effectiveness of the existing organisations.

The supporters of IEEM had clear views about what the institute should do, providing a challenging agenda for the IEEM:

- Establish [a] career structure and raise the status of 'genuine' ecologists
- Regulate standards of ecological practice and consultancy, and prevent the profession being brought into disrepute
- Provide a link between academics and industry
- Provide equivalent status to other professions
- Enhance the public perception of ecology and fight against the brown bread and sandals syndrome
- Limit the activities of people doing underpriced consultancy



Feature Article: Yet Another Professional Institute! (continued)



There were also strong opinions about what the institute should not become, many of which reflected dark suspicions about professional bodies as exclusive cliques and cartels. One respondent described his "concern that it should not be a middleground professional price and career determining cartel." Another reflected, in even stronger language both the urgent need for an institute, and the potential pitfalls. "Ecology/environmental management as a profession is in a desperate state of crisis. The term 'ecology' has been bastardized almost beyond hope of recovery by populist pulp-mongers and academic [@\$f&?!*%]. A new institute will have to fight for the survival of the discipline, and will need to be aggressive, forward-looking, international, and boldly publicist - its target is world opinion. But I fear this final chance will be squandered by woolly-minded, self-satisfied, pusillanimous academics, and the profession's last stand will fade out in the mess of club tie pins, conversaziones, and bogus academic titles." We were pleased to note that despite these strictures, the respondent did ask to receive further details!

Several practical problems were raised in the comments, such as how eligibility for membership can be gauged, and how standards of professional practice can be enforced. These are clearly major issued which IEEM will have to tackle. However, by far the commonest complaint was the cost of membership. Many respondents, especially those in the voluntary sector, objected that the likely subscription would be more than they could afford. Some asked whether a two-tiered subscription was possible, to allow for those on low income. As we indicate elsewhere, the subscriptions are relatively modest compared with those of comparable professional bodies, and are the minimum needed to support an effective organisation. However, many ecologists and environmental managers are notoriously poorly paid (itself a powerful argument for a strong professional body) and the cost of membership is clearly a serious difficulty.

Overall, this questionnaire was extremely informative in reflecting the strength of support for a professional body whose principal focus is with the concerns of those working in the fields of ecology and environmental management. The comments were particularly helpful and raised a wide range of complex issues, which the newly formed institute must address urgently. We very hope that the respondents whose opinions led the working party to recommend the establishment of IEEM will now play an active part in making the new institute an effective and influential professional body.

About the Author

Environmental Management and was elected as Secretary to it in March 1991

IEEM in Practice – The First 21 Years

Paul Goriup CEnv FIEEM
IEEM Executive Director, 1991-1996

Jim Thompson CEnv FIEEMIEEM Executive Director, 1996-2010

Sally Hayns MIEEMIEEM Chief Executive Officer, 2010-present

At the Beginning

Paul Goriup 1991-1996

In September 1990, the joint British Ecological Society (BES), British Association of Nature Conservationists (BANC), Institute of Biology (IoB) and Royal Geographical Society (RGS) Working Party on forming a new professional institute for ecologists and environmental managers completed its work of 18 months. It had concluded that establishing IEEM was not only necessary but long overdue. The Working Party had carried out a market survey which clearly demonstrated a strong demand for such an Institute, prepared a draft Constitution and mapped out the next steps. By February 1991, all of the sponsor bodies had officially endorsed the formation of IEEM. In addition, BES, BANC and IoB each appointed two representatives to form an Interim Council to set it up, and the RGS offered its facilities for the launch.

The first meeting of the Interim Council took place in March 1991. It had received a measure of financial support from the BES, and much goodwill and help in kind from elsewhere. After reviewing various options, it decided to contract the Nature Conservation Bureau (NCB) to provide secretariat services with a management team comprising myself as Executive Director, Sue Everett as Development Officer, and Ann Tubb as Administrator, with other NCB staff in support roles. For me it was a satisfying end to a period going back to early 1987 when I and others had begun to call for a professional institute to represent practitioners like us.

The following six months leading up to IEEM's inaugural meeting at the RGS on 26th September 1991 were hectic to say the least. All those who had indicated an interest in IEEM during the market survey the previous summer were contacted and asked to apply for 'Founder' membership at a discount subscription rate; IEEM was incorporated as a not-for-profit company limited by guarantee

(which entailed satisfying special conditions since the word 'Institute' is protected by company law) giving legal basis to its Constitution; the logo and corporate style were designed by NCB's creative director, Peter Creed; Patrons were sought (Sir William Wilkinson, Lord Cranbrook, Sir Richard Southwood, Sir Martin Holdgate, and Dr Norman Moore were brave enough to associate themselves with IEEM and brought it early credibility); a five-year business plan was prepared; membership applications were screened and mostly accepted; the first issue of *In Practice*, edited by Jacqui Morris, was published for distribution at the launch; and, of course, the launch itself was organised with Sir William Wilkinson and Professor Anthony Bradshaw playing the lead roles. As a result of the inaugural meeting, the first IEEM Council was elected by the Founder members present, with Anthony Bradshaw as its first President.

From this high point, the going for IEEM became much tougher. The standards it had set itself, and the demands on it, were high. It was the only professional body in its field that had a Code of Professional Conduct and was ready to enforce it. The ultimate goal was to gain Chartered status which meant that membership admission criteria had to be strong and strictly applied, including a transparent process that included publication of applicant's names. It had to establish itself quickly as the authoritative voice for professionalism in ecology and environmental management. Members had to be supported with In Practice, meetings and conferences, guidance documents and other information, affordable training courses, as well as in recognition of their professional status by their own employers and other professions.

The delivery of all this depended crucially on the continuous toil of dedicated volunteers serving on the Committees and Council,

organising conferences, setting up regional Sections, responding to consultations, producing In Practice and holding training courses, with the small Secretariat providing co-ordination and administration. However, IEEM also needed adequate finance derived from growing the membership base and obtaining sponsorship. At the time of its launch, IEEM had about 90 Founder members; it required some 800 Full members for self-sufficiency; and 1,200 to provide the full range of services and benefits outlined in its first business plan. Yet, by the end of the first full year, there were hardly 150 Full members, despite the subscription rates being quite modest compared with other professional bodies. While sponsorship and help (such as free meeting rooms) was generously provided by the BES, Corporation of London, National Grid and others, the overall financial situation was dire. The early exit of NCB and transition to a full time Executive Director and staff employed by IEEM, as envisaged by Council, was put on hold. To survive and thrive, IEEM perhaps fittingly - had to become highly entrepreneurial.



Jim Thompson, Sally Hayns and Paul Goriup

Feature Article: IEEM in Practice -The First 21 Years (continued)

The generation of income became a driver for devising innovative conferences, setting up the Professional Indemnity Insurance Scheme, participating in projects, applying for grants, advertisements in *In Practice*, paid entries in the Directory, and marketing training courses among other initiatives. Care was taken, however, not to associate with or endorse products or services from third parties, and that net benefits still accrued to the members themselves. At the same time, the Board of NCB agreed to receive its contract payment from IEEM on an ability-to-pay basis, which acted as an incentive to build up membership (the main source of reliable income) as quickly as possible. The additional funding and more predictable cash flow also allowed IEEM to hold its membership dues down, and this resulted in a steady if gradual increase of membership. Eventually, in 1996, management of IEEM was passed from NCB to Jim Thompson, which marked a satisfactory watershed in its development, from birth to adolescence.

When I look back on that early formative period, what strikes me most, as it still does today, was the sheer diversity and enthusiasm of the membership. From consultants to academics, campaigners to engineers, civil servants to teachers - gather them at a conference or a function and whatever their background, the commitment to professionalism and sharing experience was inspiring. The Institute in my view has successfully steered its way around the rocks that were expected to sink it 21 years ago:

- it has not become an elitist clique or a complacent club;
- its membership has grown well beyond the bare minimum needed to pay its way indeed it considerably exceeds our original forecast of 1,500 at best;
- enforcement of the Code of Professional Conduct has faced many challenges and adapted accordingly but remains at the core of the Institute's culture:
- Chartered status is no longer a pipe dream;
- and above all, IEEM has gained a definitive and respected place among other professions.

14 Years at the Helm Jim Thompson 1996-2010

My first day in September 1996 at IEEM in Newbury was an experience – gone were the 250 staff who had been in my department at Hampshire County Council - replaced by a desk, a filing cabinet and a computer and some helpful support from the staff at the Nature Conservation Bureau. My initial tasks were to familiarise myself with what had gone on before – quite a substantial amount, to pick up and run with a whole set of Committees and Council plus workshops, conferences and external work. At that time at least 25% of my time went on servicing the Committees – all of them! All of this was quickly overshadowed by the action for defamation served two weeks after my start, the consequences of which were to last for the next two years and to very nearly bankrupt the Institute.

The action for defamation was brought by a practising ecologist against IEEM on the basis of a letter that had been sent in the Institute's name referring to the individual's membership application. The whole experience was a very painful one, not only for me in trying to deal with the legal action but also for the members of Council and the incumbent Presidents for the period, Dr David Goode and then Dr David Parker, who had to see it through to its conclusion. These were dark days for the Institute but there were enough signs of progress elsewhere to lift the gloom.

It was shortly after my arrival that we celebrated the 5th Anniversary of the Institute at a reception in the Guildhall addressed by Lord Cranbrook and Dr (now Baroness) Barbara Young. I remember challenging the bill afterwards. How could so much wine have been drunk? I now know better! That November was my first introduction to an IEEM conference via the Red Coats at the Grand Hotel, Margate – yes a Butlin's hotel – but a good conference none the less.

Conferences in Birmingham and Llandudno, an increasing number of workshops, revisions to the constitution and a new Code of Professional Conduct were all signs that progress was being made. Just as the legal action was nearing its end, the very first Geographic Section was inaugurated at a conference in Edinburgh on 28th April 1998. There were other stirrings – I attended meetings of the New Renaissance Group set up by Max Nicholson which was to sow the seeds for the new Society for the Environment (SocEnv).

With the future looking brighter, it was time for IEEM to become more independent. We moved to our first office in 45 Southgate Street in Winchester. We were heavily in debt - a position greatly helped by the RSPB, the British Ecological Society (BES) and many Council members who made loans to IEEM just to keep us afloat.



As for staff, there were even fewer than at Newbury – still some support from the Nature Bureau and Anna Thompson came in on a part-time basis between teaching commitments. Her mother and my mother became occasional envelope stuffers and Pat Rae helped to put together our Members' Directory. As the situation improved Anna Thompson was employed full-time and gradually the Secretariat team started to grow as resources and the demand for increasing services to members grew. Slowly, all the debts were repaid.

By December 2001 discussions were underway on the formation of SocEnv. IEEM's growth continued including expansion of the Geographic Sections, eventually leading to the current full complement of Sections including a Welsh and an all-Ireland Section. Raising the profile externally was always a priority, and for a very small organisation we managed on many occasions to punch above our weight and credibility was gradually built up. Under Paul Goriup, IEEM had become a member of IUCN and IEEM was able to attend the next three World Conservation Congresses opportunities to meet people worldwide but just as importantly, the UK delegates, and to twist a few arms for articles for In Practice.

In September 2001 we celebrated our 10th Anniversary – the same day (26th September) and the same place (the Royal Geographical Society) as the inaugural meeting. We also signed up to CUBE, the precursor of SocEnv which was to start in 2002.

In Practice was always quite an effort to produce – there was very rarely a surfeit of papers to choose from and pleas for articles often produced meagre results – quite a contrast to today. Initially In Practice had blue type and all photos were produced in blue monochrome or blue and gold. In March 2004 this changed to black type and full coloured photos. The final and much more radical change in style was to arrive in December 2006 with a full colour front page and depicting one of the great highlights of my time, the presentation of the first IEEM Medal to David Attenborough.

The IEEM conferences and particularly the two-day ones, were always a challenge for one person – especially in the early days, but help was usually at hand from the local organisers and apart from the occasional

howls of anguish from delegates over the quality of the rooms in our latest find of cut price accommodation, the themes, content and speakers were generally well received and everyone seemed to enjoy the networking. Delegates to the 2005 conference in Bournemouth arrived to find the hotel lit by candles and one generator with most of Bournemouth without power. Undeterred, David Hill gave his Fellows Lecture by torchlight!

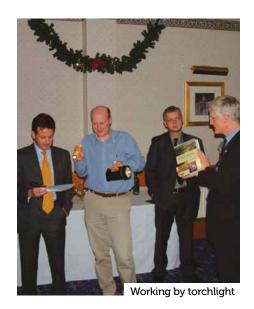
2003 saw the 10th Fellowship awarded and the numbers have been climbing steadily ever since. In that year IEEM signed up to the European Federation of Associations of Environmental Professionals (EFAEP – now ENEP, the European Network of Environmental Professionals) and as current Treasurer, it still keeps me busy today!

One of the challenges during my time was to manage the growth of the Institute and to appoint staff to the various roles as they expanded. The transition from one employee to the current complement reflected the increasing size of the tasks – e.g. membership increasing from about 700 to just under 4,000 and the growth in the number of Geographic Sections. It was not long before we outgrew our offices in 45 Southgate Street, Winchester and we moved next door to no. 43, now the current home.

I had long been concerned that IEEM did not have the staff resources to ensure compliance with the Code of Professional Conduct which is an important issue for any Professional Institute. A major review of the Code was undertaken in 2006, together with the production of new Disciplinary Regulations.

The award of the first IEEM Medal to Sir David Attenborough was a real highlight and in subsequent years it was awarded to Tony Bradshaw, Charles Gimingham, John Rodwell and Brian Moss. These events have all been really noteworthy and enjoyable. The annual Best Practice Awards have also become a well-supported and cherished feature of IEEM. Raising the profile in Parliamentary circles is vital and the event with the BES featuring the launch of the joint position statement on *Conserving and Managing Biodiversity Beyond 2010* was also a highlight.

In 2004 *In Practice* ran the headline 'Chartered at Last'. By 2005, SocEnv was



well established and by September of that year applications to become Chartered via the grandparenting process were in full flood with 250 applications that month and 51 on the last day before this process closed. These were all processed with the considerable help of a reviewer team consisting of Peter Beale, John Box, Robin Buxton, Richard Graves, Steve Pullan, Janet Swan, Alex Tait, Claire Wansbury and Eirene Williams.

2007 saw the first real involvement of IEEM in 'lobbying' at an early stage to try to ensure that in the transposition of the Environmental Liability Directive into UK law, the SSSIs as well as the Natura 2000 sites in England and Wales, were included. This was eventually accepted. After that responses to government consultations and the production of Position Statements became more frequent.

I am grateful for the support of all of the Presidents – David Goode, David Parker, David Hill, Sue Bell, Chris Spray, Andy Tasker, Steve Ormerod – and Tony Bradshaw (in a slightly different capacity). Each made a significant contribution to the development of IEEM during my time.

Personally I derived much satisfaction in seeing the Institute through perhaps its darkest hours and following its steady growth ever since. It has developed hugely in its internal services to members and externally in raising its profile and through participating in organisations such as IUCN, Europarc, Eurosite, SocEnv and EFAEP (ENEP). For me the unfinished business was the individual Charter for IEEM and it is good to note that progress is being made in this direction.

Feature Article: IEEM in Practice – The First 21 Years (continued)

Full Steam Ahead! Sally Hayns 2010-present

Describing the Institute's history over the past two years seems a little like describing the blink of an eye when compared to what has gone before – and indeed the time has passed in the blink of an eye! Of most immediate concern was the impact that the ongoing economic climate could well have on the Institute's membership renewals and other activities such as the conference programme and the professional development workshops and training courses. The signs were not good with an increasing number of workshops being cancelled and feedback from the 2010 Members' Survey telling a story of a profession under pressure.

To manage this risk it was even more important that we ensured that the Institute continued to deliver what our members' needed - good customer service, a professional development programme that was responsive to the needs of its members and a body that was able to represent the views of the profession and to influence relevant policy. One of my first tasks was to instigate the process of producing a five-year Strategic Plan that would restate our vision and set out a clear agenda of priority actions. To help shape this I was able to visit many of the Geographic Sections Convenors and, in some cases, Committees to get their ideas and input. Council and Committee members also had their say as did members through the Members' Survey and the Secretariat team through a staff 'away day' (away to a different part of Winchester!). The final Plan has helped us establish our goals for this five-year period and forms the basis for the annual business planning and budgeting process. It has also led to some restructuring of the Secretariat team and some new faces in our Winchester office.

Identifying new trainers and topics for our workshop and training course programme has stemmed the trend of cancellations and indeed the last two years have seen record numbers of bookings. The decision to hold the 2010 Annual Conference in Dublin did, at one time, seem like a mistake as the financial situation meant that very few people were able to travel 'abroad' to Ireland. Council took the decision that we were committed to holding a conference there and we went ahead, in the end just about



IEEM staff at the 2011 House of Lords event (left to right: Jason Reeves, Nick Jackson, Carol Best, Zacyntha Dunhill-Rice, Sally Hayns, Jessica Batchelor, Becky May, Richard Watts, Gwen Heywood-Waddington and Linda Yost)

covering our costs but also having a very informative and enjoyable event. Our 2011 conferences on 'Non-Native Invasive Species', 'Biodiversity and Big Society', and 'Rebuilding Biodiversity' were all very successful and the trend has continues in 2012 with our 'Planning and Biodiversity' conference in Birmingham this spring. In March 2012 Council approved a new Professional Development Strategy that has been produced to ensure that we continue to take this aspect of our work forward creatively and successfully.

Our new Strategic Plan was full of ideas for new projects and initiatives that, inevitably, needed funding. However, ever responsive to the situation of our members, Council, first led by Steve Ormerod as President and then by Penny Anderson when she took over the Presidency in November 2010, decided to postpone any membership subscription increases in recognition of the tough financial times. Instead, Council invested some of the Institute's financial reserves into both infrastructure improvements, such as a new website and a new membership database

system, and strategic projects such as the Ecological Skills Project research and the publication of new guidance such as the Competencies for Species Survey.

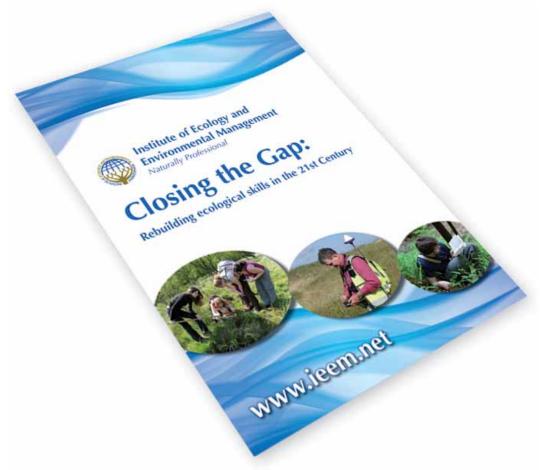
Perhaps one of the critical moments of the last two years has been the publication of the IEEM-commissioned research findings into the ecological skills gap and skills shortages in July 2011. The final stages of this research project had been undertaken by consultants and the findings provided clear evidence of a skills issue that needs to be tackled. In addition to publishing the findings we also published our response to the challenges it identified, our 'call to action' to potential partners and stakeholders. Both publications were widely circulated and were instrumental in raising the Institute's profile and providing us with the opportunity to have meetings and conversations with key players in governments, in the statutory agencies and in other bodies concerned about the skills capacity.

This has in turn provided us with a platform to stake our claim as a professional body to be listened to and respected. We are now increasingly being asked to provide advice and support to those in government, to be a 'critical friend' to some of the statutory nature conservation agencies and to sit on panels and steering groups of bodies developing relevant policy and practice standards. For example, we were recently one of the few organisations invited to sit on all six Challenge Panels for the Defra-led Review of the Implementation of the European Habitats and Wild Birds Directives in England. Our own challenge now is to reach the same level of engagement across Wales, Scotland and all Ireland.

Also stemming from the Ecological Skills Project research has been two important new projects. Over the past nine months we have been undertaking a pilot study into developing a method of accreditation of higher education degrees that deliver the knowledge and skills needed by graduates seeking to join our profession. Council will very shortly be making a decision as to whether or not to take this scheme further. Work is also underway to develop a generic Competency Framework for the profession which will become a tool for identifying degrees of competence relating to IEEM's membership grades, to plan career development, define job roles and identify training needs.

Meanwhile our services to members continue to improve. Alongside our new website is a new-look *In Practice*. Such has been the increase in the number of papers submitted for publication that we now have an Editorial Board to scrutinise submissions and we regularly have to turn papers down. Regular eBriefings update members on policy matters and increased online functionality is making membership renewals, conference and workshop booking easier.

As a body reaching its 21st anniversary it was inevitable that the time would come when some of the processes and systems in place would need to be refreshed. During 2011 David Tyldesley led a review of the criteria and application for admission to Fellowship of the Institute. As he said, he was instrumental in drawing up the original process so it was only right that he should take on the challenge of improving on it! Robin Buxton has led a yearlong review of IEEM's governance – a review that is leading to some significant changes in the way that the Institute will be governed in the future, changes that we hope will increase transparency and representation of the members. Also underway is a review of the Institute's membership grades eligibility criteria and assessment processes. Eirene Williams is leading this work.



The IEEM Ecological Skills Project report summary

Feature Article: IEEM in Practice – The First 21 Years (continued)



Steve Ormerod, Sally Hayns, Penny Anderson and Jim Thompson

Perhaps the greatest change is yet to come. We are on the threshold, subject to members' approval, of petitioning Her Majesty the Queen to become a Chartered Institute and, if successful, to have the power to award the individual title of Chartered Ecologist alongside our licence from the Society for the Environment to award Chartered Environmentalist. This would be a very fitting way to mark our first 21 years.

Looking ahead to the future, we will be continuing to raise our profile and influence within our constituency, using our new Communications Plan as a basis for targeted activity. We will continue to improve the geographic spread and range of topics in our professional development programme. We will support the Geographic Sections to go from strength to strength, improve our engagement with students and those seeking to enter the profession and champion ecology and environmental management amongst our peers. During this year we will undertake a major review of the Code of Professional Conduct and the Disciplinary Regulations

which are crucial to our reputation and our impact, as well as looking at ways of addressing poor quality work. So we will be busy.

But there is one thing, looking back, that strikes me as the most important lesson to learn from the Institute's past. The Institute has been built on the time, commitment and passion of members volunteering their services to make it successful. Through serving on committees, assessing membership or Chartered Environmentalist applications, sitting on task-specific working groups, undertaking practical tasks or attending meetings in the name of IEEM, members have helped to guide, shape and sustain the Institute – which is now your Institute. As we continue to grow in stature and size the need for member input and commitment does not diminish, it also grows. So please, when a call goes out for volunteers to give some time to perform a vital role with IEEM do give it some serious thought. If you can invest in the Institute, as others have done before you, you can help shape its future and build its success.

About the Authors

Paul Goriup has over 30 years of international experience in biodiversity issues. From 1982-1986, he worked at the International Council for Bird Preservation (now BirdLife International). In 1986, he established NatureBureau Ltd, and in 1996, he founded FIELDFARE International Ecological Development plc, which raises private-sector capital for small-scale ecologically sustainable investments in Eastern Europe.

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Jim Thompson joined Essex County Council in 1980 as Country Parks Officer before becoming a Director of the Lee Valley Regional Park in 1987. In 1991 he became a Chief Officer for Hampshire County Council and in 1996 joined IEEM as Executive Director where he remained until his retirement in June 2010.

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Sally Hayns has been CEO of IEEM since June 2010. Prior to joining the Institute she was Head of People and Wildlife at the Hampshire and Isle of Wight Wildlife Trust.

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Personal Thoughts From a Founding Member

Eirene Williams CEnv FIEEM

Retired Lecturer



I, for one, am not at all surprised to learn that IEEM has been in existence for 21 years now. Throughout those years my personal involvement has seemed almost daily, sometimes even grueling! I did not join IEEM with that expectation but this may be why I have been asked to write something based on my experiences to celebrate this coming-of-age of IEEM.

On the other hand, on this anniversary it is good to recall the story of IEEM's creation to fill a niche, seemingly vacant in the 1980s, somewhere between academic ecology and environmental practice. This was well documented by Tony Bradshaw on the 10th anniversary in *In Practice* no. 33. I have now been tempted to use a heather analogy *sensu* Gimingham. The Institute should have passed through its *pioneer* phase by 2001, colonising the bare ground

identified by its founders; by 2011 it should have competed its *building* phase, overshadowing its competitors by establishing good governance and a role as upholder of standards yet benefactor to its almost 5,000 members. Now, at 21 years old, IEEM may be considered *mature*, in balanced dynamic equilibrium within itself, with a respected public profile and hopefully political influence. With suitable rejuvenating management IEEM should continue thus for many decades and avoid any potential *degeneration* at the end of a natural life cycle. But that's up to all of us.

My Involvement with IEEM

In 1991 I was established as a Dartmoor beef farmer and also as a lecturer at Seale-Hayne. This was once a well-known independent College of Agriculture but by then metamorphosed, fatally as it turned out, into a Faculty of the University of Plymouth. My primary function was teaching ecology and habitat management to Rural Resource Management undergraduates who were mainly aspiring to become rangers and wardens. I also had postgraduate students working on autecological aspects of local Rhos pasture species. I was half of the science part of a multi-disciplinary team along with socio-economic and financial colleagues. I felt we were manifestly successful in turning out employable and practical graduates. In fact their career destinations genuinely ranged from accountants to zookeepers but with a lot of successful ecology and environmental management careers in between.

Feature Article: Personal Thoughts From a Founding Member (continued)

I must have read about the discussions leading up to the formation of IEEM in the British Ecological Society (BES) publications as I had been a member for some time. I persuaded my Head of Department to fund my subscription as a Founder member and my train fare to London to attend the inaugural meeting of IEEM at the Royal Geographical Society (RGS) on 26th September 1991. My rationale was that the proposed professional status was entirely relevant to our students rather than to myself. This was certainly true, but I was unsuspecting of how involved I would personally become. Snapshots from along the road from this inaugural contact with the illustrious RGS audience to my current activities for IEEM follow.

During that first year of IEEM's existence I wanted to be helpful and so I had joined the fledgling Professional Affairs Committee (PAC). From within PAC I somehow volunteered to conduct a survey of the types of members that had joined IEEM.

The membership had reached a few hundred and this was in the days before online surveys and fluent electronic communication. My research assistant, Stephen Steadman, who was working as a programmer on a multi-access computerised key to British flora offered to help in his lunch breaks. We designed a hopefully motivating and straightforward questionnaire which went out on paper with an early copy of In Practice, and we got a very reasonable number returned. So we collated the returns and were ready to present the results to the first IEEM conference at Bristol University on IEEM's first birthday, 26th September 1992. The 1992 survey showed a youngish (mainly under 45), diverse (only about 25% consultants contrary to popular opinion) membership entering ecology and environmental management from a range of backgrounds (including significant periods of voluntary work) but all with strong desire for status, career development, professional endorsement of methods, training, conferences, and circulation of relevant news. As the detailed results of questionnaires of this sort tend to be a bit boring I had a last minute presentation idea. I had my oldest farm jacket, dirty wellingtons and binoculars in the car as usual. So I put them on over my powerdressing suit and came on in the persona of an absent-minded and scruffy ecologist reluctantly disturbed from some fascinating

fieldwork. As the membership statistics were unveiled, my old clothes and accessories were sequentially stripped off to reveal the smart professional underneath. I think the audience got the point about the aspirations of the new Institute. Anyway, I was asked to repeat the performance a year later at the inaugural Careers in the Environment conference supported by IEEM at the London Environment Centre (LEC).

Subsequent Membership Surveys and Attention to Career Development

Since 1991 other IEEM membership surveys have shown some changes in the membership, not least in age! For example there are still some perceived imbalances in the employment sectors attracted to the Institute and unfulfilled wants and needs. There have been many new degree courses with environmental titles validated, and the routes into ecology and environmental management careers have become less serendipitous. Publications like Rooting for a career in Ecology and Environmental Management have helped students target their studies and experiences. I have become involved in the working groups for both the recent IEEM Skills Project and new Higher Education Accreditation Pilot which are further moves in analysing and manoeuvring the interface between qualifications, experience and employment.

The skills gaps which emerged from the research commissioned by IEEM were not altogether unexpected but it was important to have evidence for them. Having organised the IEEM 'Getting Wet' conference in Torquay in 2001, I was aware of the dearth of marine and freshwater specialists, and as a fungal specialist myself originally I was of course strangely gratified that identification skills for fungi emerged as lacking. More modern-sounding gaps like environmental economics and ecosystem goods and services, and transferable skills in every sort of management were also flagged up by members and employers. Now it remains to do something about these gaps to prepare the ecology and environmental management profession for the legislative and ethical demands of the future. The bit I have been assigned to deal with next is the potential accreditation of Higher Education courses.

Universities are pretty independent and also subject to economy drives like everyone else these days. Evaluating what they offer in terms of its value to potential members of IEEM is the first stage. If accreditation becomes popular or even mandatory for entry to the profession, as it is for some other professions, then IEEM should be able to have a beneficial influence on the content and delivery of courses. My own efforts to retain fieldwork and placement experience within the degree courses I managed make me appreciative of the obstacles put in one's way. It is my contention that species identification and field skills are best absorbed little and often. One-off exotic overseas field trips are great but only when experienced against a thorough grounding in the species richness, diversity and abundance of the students' home environment. I was fortunate to lecture at a campus with its own farm and proximity to moor and coast and to agreeable rural businesses so that exposure to habitats and enterprises was easy and flexible. I thought this and the multi-disciplinary undergraduate curriculum as a whole provided a good basis for future IEEM members. The career successes of ex-students support this. Had the course still existed I would of course be putting it forward for IEEM accreditation now.

Governance

As IEEM evolved and set up improved governance, the length of time anyone can serve on its committees and as officers has become defined. However in the early days, to get the IEEM committees going, some of us Founder members got involved for far longer than was really appropriate.

In my own case this all started with the PAC and lasted from 1991 to 2008. To use the heather analogy again, this was the pioneer decade when the PAC was developing the Code of Professional Conduct. A new Institute seeking to be viewed as reputable and as having high standards obviously needed such a Code against which to judge members' activities. There was much debate about the wording and intentions of the clauses, much reading of Codes from other Institutes, and some legal advice was sought. Two revisions with minor changes have been necessary so far. Later in the building phase. and when I was Chair of PAC from 2004-8, some complaints about members were coming in, and so the Complaints Procedures and Disciplinary Regulations were finalised. Again expensive but necessary legal advice was taken so that robust processes and decisions could be seen to occur. In the *mature* phase that IEEM is now entering, the Code and the disciplinary procedures are being invoked and tested. I think this is potentially both good and bad news: good that the system of professional assurance is in place and operational; bad that there are now members whose conduct is causing complaints.

Continuing on one of PAC's main themes, maintaining and enhancing professional standards, PAC also addressed Continuing Professional Development (CPD) requirements. Commitment to lifelong learning is not exclusive to IEEM but necessary to its credibility. Some members have been reluctant and have not yet been penalised for not submitting appropriate CPD records. Now CPD records are getting better and the requirement will hopefully be even more respected and if necessary enforced. The requirement for Professional Indemnity Insurance (PII) and IEEM's attempts to get appropriate and affordable deals from brokers sometimes faced similar slightly hostile reactions. However, CPD and PII could also be seen by right-minded members as a facet of the other main PAC theme: services to members. Activities with more obvious benefits included the early Professional Issues Series guidance on Estimation of Fee Rates, Organising Training Workshops, Advertising Practice, Access to Land, etc. This series has recently been revised and reissued as the Professional Guidance Series.

As Chair of PAC I would have had a seat on IEEM Council between 2004 and 2008 but for some reason I had already been co-opted onto Council in 1999. So reporting to and from PAC to and from Council was fairly familiar. Council was a useful sounding board for any controversial ideas as well as the official sanctioning body for decisions. Although co-opted membership of Council was somewhat randomly assigned to any willing member at first, it was a generally representative and active body which steered the stripling Institute through some difficult times in the first decade. These days it is now more democratically elected and no doubt has huge gravitas. In 2005 I was elected Vice-President (VP) of IEEM which also meant I had a seat on the Finances and General

Purposes Committee (F&GP). This probably happened because my lecturing post was being transferred to the Plymouth campus as the Seale-Hayne campus was being sold off. I declined to follow and so took early retirement. I think someone at IEEM thought I would be at a loose end and available. So did several other organisations and friends, so as well as selling my farm and moving house I took on a lot of new commitments. Both VP and F&GP roles carried on until 2009. I was Vice-President under three very different but appropriate Presidents.

I finally left PAC in 2008 and after another year thought I would finally be taking a back seat. But within weeks I was asked to join the Membership Affairs Committee! Although I was obviously passingly familiar with the eligibility criteria for the various grades of IEEM membership, the reality of long afternoons in London scrutinising applications and re-scrutinising the ones that had raised doubts was serious and detailed business. Even more challenging is the current proposal to revise the eligibility criteria to re-shape the Institute in its mature phase. The questions that have emerged are about the appropriateness of the existing grades and the way the requirements are expressed. And in the distance is the enticing view of our own Charter.

Involvement with the Society for the Environment

IEEM was in the forefront of supporters of the Society for the Environment (SocEnv) initiative and has maintained one of the highest numbers of Chartered Environmentalists (CEnv) amongst the 'licensed bodies'. These are the constituent members of SocEnv and licensed to award CEnv to their individual members. As Vice-President of IEEM I became a member of the SocEnv Board during 2005-2010, representing IEEM alongside Jim Thompson, both trying to keep biodiversity prominent in the minds of the other licensed bodies. Many of these are primarily involved in engineering. By joining SocEnv they are obviously showing an interest in the environment but this does not always extend to considering other species. For SocEnv I have taken part in several preliminary audits of new licensed bodies and also been a recruitment panel member for one of the less successful attempts to appoint a CEO. Most of the IEEM candidates who come for

interview for CEnv status need this to achieve credibility when working alongside other chartered professionals, especially engineers. I have now interviewed almost 100 of these for IEEM and can therefore state that the typical CEnv candidate is about 30, established in an ecology and environmental management career with some supervisory responsibilities, and very often holding protected species licences. The idea is that candidates prove to be highly articulate about sustainable development and their contribution to this through their life and work. Hence they are good champions of the environment and ambassadors for the ecology and environmental management profession.



Eirene Williams at the 2008 Fellows evening

About the Author

Why did I end up in ecology and environmental management? I put it down to my primary school, the aptly named Beach Cottage, now a café. In break times we went on the beach and in the dunes collecting seaweeds, shells, dead birds etc. which we then identified. Our teacher was the wife of Henry Williamson, author of Tarka the Otter. So nature study featured daily and we absorbed biodiversity, habitat and environment without naming these concepts. I thought everyone went to a primary school like this. My more recent career emerges from the article you may have just read.

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Feature Article: Personal Thoughts From a Founding Member (continued)

A View from Wales

Upside-Downside

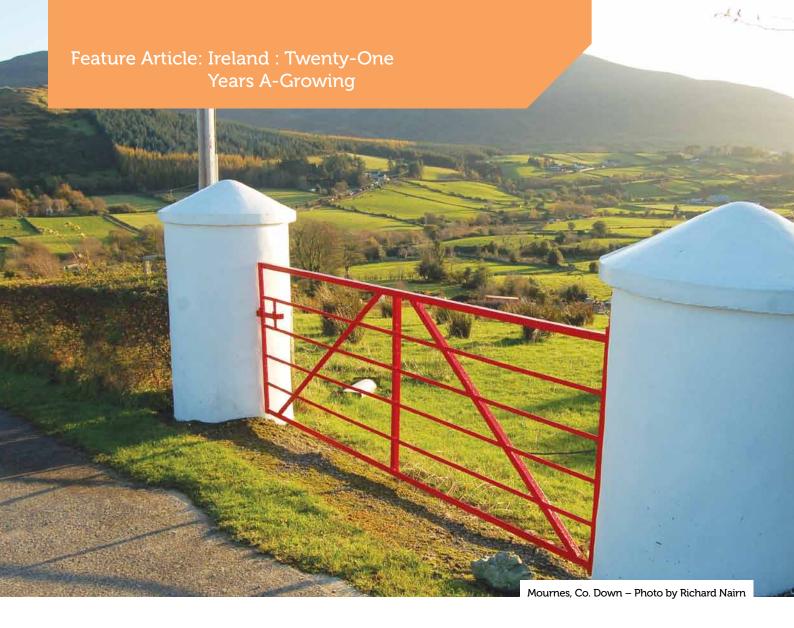
21 Wows and Groans:

A light-hearted selection with a twist of lemon

- 1. Our own Institute at last: still no Charter yet though (soon we hope)
- 2. Representation for serious applied ecology: school leavers who can't write science (or spell)
- 3. Wider acceptance of scientific method: people will keep calling it 'methodology'!
- 4. Massive advances in field data collection: data are plural not singular!
- 5. Enthusiasm escalates: tree-huggers too
- 6. Increased public awareness: increasing human population
- 7. More biodiversity laws: even more bureaucracy
- 8. Planners taking ecology seriously: they don't enforce conditions
- 9. Agencies with more powers: remaining unused
- 10. Quality levels agreed: seldom met
- 11. Burgeoning numbers of surveyors: so few know the hard stuff like stats and taxonomy

- 12. We know ecology is of inestimable importance: do any politicians?
- 13. Conkers and dead wood: health & safety
- 14 The internet: the internet!
- 15. Our work protects badgers: governments want them shot
- 16. Excellence of British CPD field courses: demise of botany in universities
- 17. Helping bats and water voles: lyssavirus and leptospirosis
- 18. Green roof technology works: developers hate them
- 19. IEEM has enthused so many: people frightened of being alone in a wood
- 20. We have promoted the age of reason: so many adults still believe in myth and fairy tale
- 21. Neutrinos and the Higgs: we'll all probably have to have a re-think!

Chris Betts MIEEM **Betts Ecology**



Ireland: Twenty-One Years A-Growing

Richard Nairn FIEEM

Natura Environmental Consultants

Maurice O'Sullivan's classic book *Twenty Years A-Growing*, written by a native of the Blasket Islands off Co. Kerry, begins with the words: "There is no doubt but that youth is a fine thing though my own is not over yet and wisdom comes with age." While IEEM was founded in 1991, the Irish Geographic section was established only in the late 1990s; a callow youth by comparison.

In 1991, the year that I joined the Institute, I had just started work as an environmental consultant. I was one of a relatively new species at the time, and I knew only one other individual who had evolved in this way. I borrowed £1,000 and bought a tiny Apple Macintosh, as the Internet had just been made available to the unsuspecting public. Although it seemed remote from

my experience in Ireland at the time, IEEM offered the opportunity to meet other likeminded ecologists in the UK and to learn from their greater experience there. Now, hopefully with at least *some* wisdom of age, I can look back at whether this early hope was realised. I ask myself a number of questions: How has Ireland changed since 1991? Has the profession of ecology come of age? And has the natural environment benefited from these changes?

In Ireland, the 1990s was a period of recovery from the long recession of the 1980s. The decade was dominated by the Peace Process and the eventual Good Friday Agreement in Northern Ireland. It was also a period when ecology grew in the public consciousness. Issues like the loss of rain

forests, global warming and climate change became front page news. Meanwhile, at home in Ireland, the pace of agricultural intensification accelerated, with CAP support, and overgrazing became a major issue for the uplands. The small mixed farming landscape of Ireland gave way to intensive livestock farming with silage fields replacing hay meadows. In parallel, some farmland wildlife, such as the corncrake, corn bunting and corncockle, underwent rapid decline.

Up to and throughout the 1990s key legislative changes came about that affected the environment. The Environmental Impact Assessment (EIA) Directive was passed by the European Communities in 1985. It was then was transposed into Irish Law in 1989.

Feature Article: Ireland: Twenty-One Years A-Growing (continued)

This Directive was given legal effect in Northern Ireland through the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 1999. This resulted in a sudden requirement for EIA for many large and small projects. The low thresholds set in Irish law meant that EIA was required for many more projects than was the case in other countries. 'Flora' and 'Fauna' became standard headings in these assessments but we had no idea then what level of detail should be included in the Environmental Impact Statement.

In 1992 the European Communities introduced the Habitats Directive and this became law in the Republic of Ireland with the Habitat Regulations 1997. The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) transposed the Habitats Directive into Northern Ireland law. The Habitats Directive has been a key factor in the introduction of serious conservation measures in Ireland. It led to a programme of resurvey of all the previously listed Areas of Scientific Interest in 1993-94 in the Republic of Ireland and the designation of the key European sites as Special Areas of Conservation (SACs). This was followed eventually by a suite of Special Protection Areas (SPAs) designated under the 1979 EU Wild Birds Directive.

The years 2000-2007 became known as the Celtic Tiger period. Fuelled by rising property prices, there was a construction industry boom and enormous development pressure. Major infrastructure projects included a network of new national roads and motorways, light rail projects in the capital, Dublin, waste water treatment plants for all major towns and cities, gas pipelines and a new electricity transmission grid network criss-crossing the country. Ecologists were involved in assessing the ecological impact of the 112km gas pipeline which connects the Scottish Northern Ireland Pipeline (SNIP), at Carrickfergus, outside Belfast to the newly built Coolkeeragh power station in Londonderry, commissioned on schedule in October 2004. The EU involvement in controversial threats to Ballyseedy Wood, Co. Kerry and Pollardstown Fen, Co. Kildare had a big effect on the attitude of the National Roads Authority to ecology. However, there remains a problem with the implementation of promised mitigation measures for these major roads projects.

One example is the continuing number of dead badgers on new motorways, suggesting that badger mitigation is not working.

During this busy period, the IEEM guidelines on Ecological Impact Assessment (EcIA) became an ally, keeping Irish ecologists on the right track. Many of the large infrastructure developments indirectly threatened important nature conservation sites and the route selections studies undertaken by professional ecologists made a significant contribution to reducing these impacts. For the first time, ecologists became part of the design teams rather than being seen only as a break on development. Ecologists started to be accepted by engineers and architects, and by local and national government as a necessary profession in developing acceptable solutions. IEEM was one element in this change of attitude as the Institute began to initiate training and professional development for ecologists in Ireland.

Key publications that have appeared in this period included A Guide to Habitats in Ireland (Fossitt 2000) This was the first standard approach to classification of habitats that are somewhat different in Ireland. As development pressures mounted in the first decade of the new century, the National Roads Authority commissioned a set of guidelines on treatment of ecology in EIA. These included Guidelines for Assessment of Ecological Impacts of National Road Schemes (2004) and the Guidance on Appropriate Assessment, published by the Department of Environment in 2009. Among many other important publications was the summary document EU Protected Habitats and Species in Ireland (NPWS 2008). This brought together all the conservation assessments for the habitats and species listed in the Annexes to the Habitats Directive. CIRIA UK (www.ciria.org) has also produced a number of biodiversity-related ecological guidance documents of relevance to the construction industry including amongst others green roofs and walls, coastal and estuarine managed alignment, green infrastructure, habitat translocation and invasive species management. Each of these documents, in their own right, became key reference works for all ecological consultants.

The appearance of the Heritage Council in the Republic in the 1990s was to prove a milestone, albeit in unexpected ways. It was



established as a statutory body under the Heritage Act of 1995, adopting an integrated approach, with responsibilities that included both cultural and natural aspects of heritage. One of the most exciting new developments was the appointment of Heritage Officers in many of the local authorities. They swiftly set about preparing (and publishing) county Heritage Plans and Biodiversity Action Plans (BAPs). In Northern

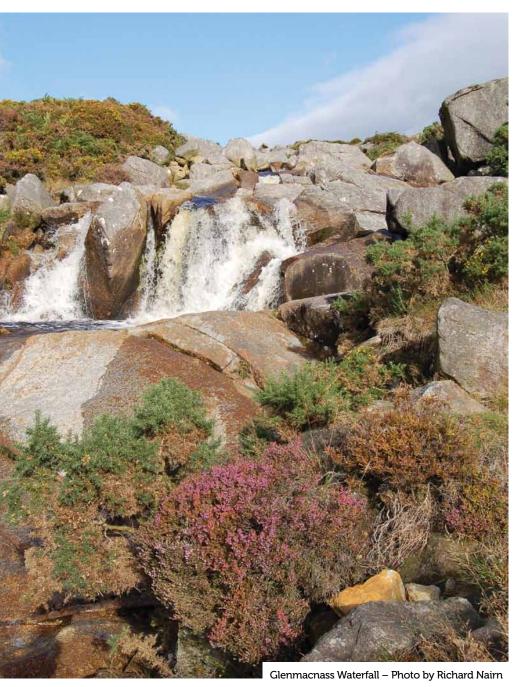


Ireland, Biodiversity Officers were employed in some of the local authorities to drive forward conservation actions. BAPs have now been produced for Craigavon, Belfast, Newry and Mourne, and Omagh. In most cases, however, it has been the Heritage and Biodiversity Officers themselves that made an impression on local authority planning sections by bringing nature conservation centrally into forward development plans.

The Heritage Council was also responsible, in January 2007, for setting up the National Biodiversity Data Centre (NBDC) as a centre of research excellence on Ireland's flora and fauna. This has proved, in its first five years, to be a powerhouse for recording, cataloguing and mapping of plant and animal species. It was early on that the NBDC recognised the deficit in experienced field recorders and set about correcting this

through an ambitious programme of training courses. CEDaR, Centre for Environmental Data and Recording, is the Local Records Centre for Northern Ireland, and facilitates the collection, collation, management and dissemination of biodiversity and geodiversity information for Northern Ireland and its coastal waters. CEDaR has also organised biodiversity identification training courses.

Feature Article: Ireland: Twenty-One Years A-Growing (continued)



In Northern Ireland habitat and species action plans have also been produced. Some of the latter (e.g. relating to corncrake, bats, Killarney fern, Irish lady's-tresses, red squirrel, pollan and Irish hare (see http://www.doeni. gov.uk/niea/biodiversity/sap_uk/all_ireland_ species_action_plans.htm) have been jointly produced on an all-Ireland basis by the statutory conservation agencies in Northern Ireland and the Republic, an example of increased co-operation between the two jurisdictions in conservation matters.

The contribution of environmental nongovernment organisations (eNGOs) in forging a conservation movement in Ireland should not be overlooked. Leading the charge was the Irish Wildbird Conservancy (now known as BirdWatch Ireland). Originally founded in 1969, it became the first Irish eNGO to appoint professional staff in the 1980s, and then began to make a real impact on government conservation policy. More specialist organisations, such as the Irish Peatlands Conservation Council, Bat Conservation Ireland, and the Irish Whale and Dolphin Group, brought environmental issues to the attention of the public and decisionmakers alike.

In Northern Ireland the RSPB, National Trust and Ulster Wildlife Trust have been at the forefront of conservation education, and practical conservation management actions. The National Trust, a major landowner in the UK, has initiated biodiversity surveys of many of its properties including those in Northern Ireland (Ferneyhough 2008).

In comparison to the Republic, the identification of areas of local nature conservation importance is more advanced in Northern Ireland. Sites of Local Nature Conservation Importance (SLNCIs) have been identified in area plans. SLNCIs are designated in accordance with Planning Policy Statement 2 (PPS 2): Planning and Nature Conservation. Sites are identified and proposed on the basis of their flora, fauna or earth science interest.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) have proved to be the sites of battles fought over many fundamental conservation issues over the last two decades. Ireland's peatlands have long been an international cause célèbre. In the 1940s, the Irish government set up Bord na Mona, the Irish Turf Development Board, to exploit a domestic source of fuel which, at that time, must have seemed inexhaustible. By the 1980s, the raised bogs of the midlands were all but cut away and only a handful of these unique habitats remained intact. A major campaign, led by the Irish Peatlands Conservation Council, and with support from Dutch ecologists, helped have these areas declared nature reserves, or SACs. Nevertheless, mechanised peat (or turf) cutting for both domestic and commercial use continued apace. Many sites that merited SAC status became damaged in the years that followed. In the early 2000s, the European Commission ruled that turf-cutting on SAC bogs should cease. However, due in no small part to the distaste of successive governments to tackle the issue head-on, it took 10 years for the state to implement the regulations by introducing a system of compensation for turf cutters and contractors. In 2011-12, this issue has again come to the forefront. Local communities are flexing their political muscles to grasp what is perceived as an ancient tradition

The Department of the Environment has continued the derogation by allowing continued domestic turf-cutting with no regulation or assessment while simultaneously establishing a quango - the Peatlands Council - in an attempt to reach a compromise solution. This has occurred despite the findings of government-sponsored research which shows continuing and significant habitat degradation.

The NPWS appears to be mainly focused on annexed habitats and species. In particular, the fact that there are very few annexed invertebrates in Ireland means that there has been little sustained research into the distribution and ecology of the majority of the Irish invertebrate fauna (although the NBDC is now starting to fill this gap with some important initiatives).

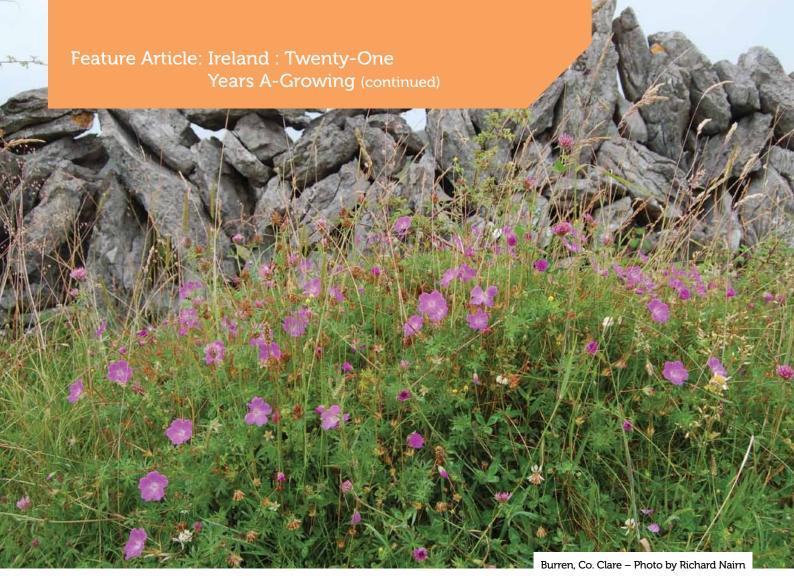
With the rapid depletion of Ireland's nonrenewable fuel supplies, including both the peat bogs and limited offshore natural

gas, renewable energy has become an unavoidable necessity. Due to its location on the edge of the Atlantic, Ireland has one of the best wind energy resources in Europe. However, the Republic has trailed far behind other countries, such as Denmark and Portugal, in developing this resource. With the economic bubble of the early 2000s, the demand for energy accelerated, and wind farms began to appear on mountains in the west with increasing frequency. Here too there were ecological issues. Hen Harriers featured strongly in many of the early battles, as ecologists argued over whether these scarce birds of prey would be negatively affected by the new turbines in their upland territories. Extensive national surveys have been undertaken at five-year intervals with intensive studies of the actual impacts on Hen Harriers are only now getting off the ground.



Windfarm, Co. Donegal - Photo by Richard Nairn





Forestry is another area where there has been a big change in the Republic of Ireland. Afforestation has shifted from the state to the private (but grant-aided) sector and the development of farm forestry has spread afforestation more widely in lowland, more agricultural landscapes. There has been increased recognition of the importance of biodiversity, with the publication of mandatory Forest Biodiversity Guidelines, a shift (to a degree) from conifers to mixed/ broadleaves, and the development (before it was hit by the recession) of the Native Woodland Scheme. There are still problems with afforestation in important habitats but there is growing awareness among foresters of the importance of nature, with the appointment of ecologists to Coillte, the state-sponsored forestry company and the initiation by that body of groundbreaking habitat restoration projects in both woodlands and peatlands.

So, with the development of professional ecology in Ireland, has the profession itself finally come to be accepted by the establishment? True, we are no longer treated as cranks by officialdom. But there is still a long way to go if we are to have a lasting influence on public policy. There is a clear need for a higher profile for the IEEM

in Ireland. It should not compete with the existing NGOs but make its voice heard on crucial national issues, such as the protection of Natura 2000 sites, new legislation on environmental protection, guidelines on methods of ecological assessment and the overriding constraint of resources for conservation. Training and professional development must be at the forefront of the Institute's work to ensure that high standards are maintained. Here the IEEM might cooperate with such bodies as the National Biodiversity Data Centre and the Environmental Sciences Association of Ireland in running a sustainable series of affordable courses for members.

The IEEM Irish Geographic Section was always intended to embrace both jurisdictions on the island of Ireland, as the natural environment and conservation issues are very similar on either side of the border. Several all-Ireland conferences have been held here and these have attracted much interest. The wide geographical spread of members has itself been a problem in generating numbers at meetings but this appears to be changing with a good attendance at the latest AGM in November 2011 in Portlaoise.

How has the natural environment benefited from all this effort by ecologists? At least, European protected areas have a chance of being protected from the worst effects of development. However, most annexed habitats still have very poor or bad conservation status. Formerly alien terms such as 'natural capital', 'green infrastructure', 'ecosystem services' and 'appropriate assessment' have become part of the everyday language of planning. Many ecological pitfalls have been avoided during a period of unprecedented development in Ireland and this can be attributed in no small way to the work of professional ecologists behind the scenes. But clearly, as the fight to save the last of the intact raised bogs demonstrates, much work remains to be done.

Richard Nairn FIEEM is Director of Natura Environmental Consultants and the author of several books. He has recently published Bird Habitats in Ireland. He wishes to acknowledge the assistance of Elaine Dromey, Tom Gittings, Paul Scott and John Wann in preparing this article.

A View from Scotland

In 1989-90 I was on the British Association of Nature Conservationists (BANC) Council, representing BANC Scotland, and one of two BANC representatives on the IEEM steering group, then on the IEEM Interim Council. This meant quite a few journeys south so I came off BANC Council having become more interested in IEEM. I set up on my own in 1987, one of the first ecological consultancies in Scotland, so was convinced of the benefits of having a professional Institute. Soon I was a Founder Member of IEEM, on the first IEEM Council and the Membership Admissions Committee (MAC). Travel remained an issue; more people became involved and willing to serve on Council so I came off and concentrated on MAC because much of its work could be done remotely. There were then fewer volunteers for MAC so I was on for 10 years!

Having been involved in BANC I was keen that IEEM should not be so south-centric and wanted to form a Scottish group early on. A questionnaire was sent to Scottish members in 1992. There were then 32 Scottish members and two-thirds responded, all positive. At subsequent conferences Scottish attendees remained enthusiastic

about the idea but no-one emerged to co-ordinate things. This began to change in 1996. IEEM was 5 and MAC was preparing a new recruitment strategy. I thought geographic groups could deliver IEEM benefits more locally and help with recruitment. A turning point was meeting David Jamieson, then ecologist at Edinburgh Council, at the Margate conference and talking to him about forming a Scottish group on the train home. By then my consultancy had expanded and we could swiftly send another questionnaire to Scottish members. It was geared towards getting volunteers for an organising group, as well as aims. Over 50% of the 70 Scottish members responded, and 12 volunteered. David Jamieson took the reins, my assistant Steven Horn went to meetings and did the paperwork. A Scottish Committee was formed and the Scottish Section launched in 1998 at a big one-day conference. Other Geographic Sections followed.

After 2001 I gave up voluntary commitments and concentrated on work. I had reverted to being a one-person business, not enjoying management as much as I enjoy

fieldwork. There are now many ecological consultancies in Scotland and many more IEEM members. It concerns me that within some larger consultancies fieldwork such as Phase 1 Habitat Surveys is carried out by inexperienced staff. Promotion can take ecologists away from the field; unless regularly outside, survey skills can shrink. I've also noticed that graduate ecologists can be poor at botanical identification. There may more emphasis on fauna surveys now; the greater protection afforded to fauna increasing demand.

I had boom years in the 2000s but have been affected by the recession and bereavement since 2010. I seem to be taking on voluntary work again! My consultancy is 25 in June; I don't know if it will survive but the guidance and fellowship of IEEM remains important to me.

Carol Crawford MIEEM
Natural Resource Consultancy

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Richard Nairn FIEEM is the Principal of Natura Environmental Consultants (www.naturaconsultants.com). He is author of several books including the recently published Bird Habitats in Ireland. He wishes to acknowledge the assistance of Elaine Dromey, Tom Gittings, Paul Scott and John Wann in preparing this article.

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The Effects of Devolution and Changes in the UK and Ireland on Ecological and Environmental Policy and Practice Since 1991: A Personal Recap

David Tyldesley MIEEM

Principal of David Tyldesley and Associates

I remember standing in the queue waiting to collect our 'Founding member' certificates at the inaugural meeting of the Institute of Ecology and Environmental Management, in September 1991. I was pleased to be a part of it, not least because I was elected as a member in respect of my role in 'environmental management' rather than because I was an ecologist, which I am not. I chatted to friends and colleagues about the then uncertain future of the new Institute and how much it was needed. I have since had the privilege, and challenge, of working at the interface of land and marine planning with nature and landscape conservation, in all UK administrations and the Republic of Ireland. I hope, therefore, that I can bring a broad, albeit personal and, in a field as wide as this, inevitably selective, perspective view of the last 21 years. You will see how grateful I am to my irreplaceable collection of ECOS journals for verifying my memory of events and opinions.

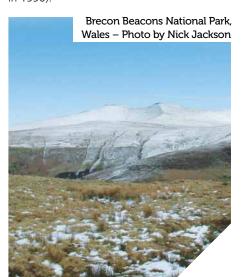
IEEM was not the only new institution at that time, the future influence of which was uncertain. It was a time of change. The Environmental Protection Act of 1990 had dismantled the former Nature Conservancy Council (NCC). The lack of consultation and Ministerial evasiveness about the obvious political reasons for the dismemberment, into four unequal guarters, had caused wide and sustained consternation amongst nature conservation bodies and interested commentators (Ratcliffe 1989, Smith 1990). The small Joint Nature Conservation Committee (JNCC) did not

look like the body to co-ordinate UK-wide nature conservation policy directions. The Countryside Council for Wales (CCW) had been established directly by the 1990 Act on 1st April 1991, merging the Welsh region of the NCC with the Countryside Commission Wales. The Natural Heritage Scotland Act 1991 was to create Scottish Natural Heritage (SNH) the following April, merging the temporary Nature Conservancy Council Scotland with the Countryside Commission for Scotland. SNH was the first body to have statutory obligations to "have regard to the desirability of securing that anything done, whether by SNH or any other person, in relation to the natural heritage of Scotland is undertaken in a manner which is sustainable". In England, however, the temporary Nature Conservancy Council England, was to be established as English Nature in 1992, whilst maintaining the Countryside Commission, to be renamed the Countryside Agency, as a separate body.

We had so much to do. Our Common Future (Brundtland 1987) was already four years old, had it stalled? Europe was grappling with drafts of a 'Habitats Directive'. Poor practice standards in the Environmental Impact Assessment (EIA) of projects, introduced in the UK three years before, needed to be improved, and nature conservation policy was out of date. On the positive side, the United Nations Conference on Environment and Development had arranged a global convention in Rio de Janeiro called the Earth Summit. It would open the Convention on Biological Diversity for signature, prove a

landmark for biodiversity conservation policy and practice, and change the way that the world thought about development and the environment. How would the newly devolved agencies cope with their respective national, let alone global, biodiversity action planning?

I shared many of the concerns about the way in which Government was intent on politically curtailing the undoubted influence of the NCC in Scotland and Wales, by bringing its respective territorial components under the more direct influence of the Scottish and Welsh Offices. Would successes for nature conservation, such as those at Duich Moss and the Flow Country, be a thing of the past, with environmentally damaging schemes being approved (Mayes 1990)? Early signs, appointments and Ministerial rhetoric, perpetuated the worries, eloquently expressed by the equally recently created Scottish and Welsh Wildlife and Countryside Links (as they were named when founded in 1990).





But I had a dilemma; it arose from my professional conviction of the need to unite the forces of landscape and nature conservation, so that they worked for mutual understanding and benefit, if either were to fully realise their potential (landscape scale habitat creation was not a widely shared objective then). I also had a personal conviction that it was right for conservation policy and practice in Scotland and Wales to be devolved, so it could be managed separately by people working in Scotland and Wales, who could define their own priorities and develop their own ways of doing things. Perhaps it wasn't what the Government was doing that bothered me. Rather, it was the way, and the reasons, that they were doing it.

Whether the scepticism and fears of 1991 have proved to be well- or ill-founded is probably a matter of personal opinion. There have been problems, not least the time it has taken the three agencies to recover after each reorganisation and funding reduction. All have had to spend too much of the last 20 years internally worrying about, and then adapting to, what to most of us outside seemed to be largely pointless restructuring, which distracted staff from doing their jobs. There have been widely publicised cases where they have not succeeded in preventing

serious damage to Sites of Special Scientific Interest (SSSIs) in the face of political willfulness. All three agencies have, at various times, been accused by non-governmental bodies of being ineffective, too reliant on agreement and partnership rather than pressure and enforcement, and failing to notify and protect SSSIs. The accusations and reactions have occasionally been acrimonious (for example as reported by Marren 1997 in respect of WWF 1997). The 2004 nature conservation legislation in Scotland diverged from that of England and Wales in ways that could make it less effective.

On the other hand, there have been major achievements delivered in England, Scotland and Wales by the separate organisations working in ways that best fit their administrative areas. CCW and SNH have stamped distinctiveness on their work that justifies their 'devolution' well ahead of the official devolution of their respective Governments.

By 1993, CCW had secured real increase in resources available in Wales, with more ecological staff in the field and more land purchased and grants awarded (Caldwell 1993). John Redwood, then Secretary of State for Wales, controversially clipped CCW's

budget by 16% in 1995, after which he resigned from the Cabinet to (unsuccessfully) stand against John Major in the Conservative Party's leadership election. It took time for CCW to recover again, but recover it did.

Even with the same primary legislation as England, CCW was able to do things differently. For example, it developed a distinctive agri-environment policy, launching the pilot Tir Cymen in 1992 and helping to design and deliver Tir Gofal, ultimately across 330,000 hectares between 1999 and 2006. In combination with the later Tir Cynnal, about one-third of Welsh agricultural land came into a management scheme before CCW transferred the running of both schemes to the Welsh Assembly Government Rural Payments Division. In my view, CCW has deservedly gained a reputation, amongst other things, for sound science directly related to the natural environment of Wales, good environmental assessment practice and evidence-based policy which has made a difference at both national and local government levels.



The Government of Wales Act 1998 led to the creation of the first National Assembly for Wales, but it was the second, 2006, Act that enables the Assembly to legislate on devolved issues, and which established the Welsh Government. Since the endorsement in the Welsh people's vote on 3rd March 2011 Wales is now able to make laws directly on all of the 20 areas for which the Welsh Government has responsibility, without seeking the approval of the UK Government before doing so. The 20 devolved areas include the environment, agriculture, land and marine spatial planning and local government. Subject to compliance with international conventions and EC legislation, the Welsh Government has full authority over environmental issues, including ecology and environmental management policy and practice.

In that regard, Planning Policy Wales (currently edition 4th February 2011) conventionally affords a high level of protection to internationally and nationally designated nature conservation sites, but the Welsh Government's regard for the need to respect nature conservation is surely reflected in *Technical Advice Note (TAN) 5: Nature Conservation and Planning*, the most up-to-date, comprehensive and detailed guidance of its kind in the UK. Likewise, SNH has had

its successes. After being initially opposed to the creation of National Parks in Scotland, it eventually steered the first two parks for Loch Lomond and the Trossachs (2002) and the Cairngorms (2003) to designation with a strong policy and legislative basis. The problem is that there has been such an obvious lack of National Park culture in the Scottish psyche when compared to England and Wales, that I think it will take decision-makers, even at the highest levels, time to appreciate the force that national park designation ought to bestow upon a decision affecting the special qualities of such a designated area, including its wildlife and habitats outwith other designations.

SNH has made a huge contribution to access to the countryside through promotion of such initiatives as 'Paths for All' and of course the seminal legislation in the Land Reform (Scotland) Act 2003. It has gained a reputation for effectively disseminating good Ecological Impact Assessment (EcIA) practice and procedures particularly in respect of EIA, and landscape character assessment. It secured, between 1994 and 1998, what I believe was the first complete national coverage of effective landscape character assessment in the world, a resource still in use today. I doubt that these initiatives would have occurred without 'devolution'

and unity of landscape and nature conservation remits, for reasons I do not have space to discuss here.

Following the passage of the Scotland Act 1998, the Scottish Executive and Scottish Parliament were officially convened on 1st July 1999 at which date devolved powers were transferred to the Scottish Ministers. Things started off well, SNH was adequately resourced and influential. Scotland took the lead in Europe on Strategic Environmental Assessment (SEA), with the first methodological guidance published, even before the Directive came into force. There was the impressive commitment to SEA through the Environmental Assessment (Scotland) Act 2005 extending the requirement for SEA to all plans, programmes, policies and strategies in Scotland co-ordinated by the already well established and innovative 'SEA gateway'. All these Scottish initiatives helped to raise the general profile of ecology and environmental management and assessment as well as having case-specific benefits.

But at the Scottish National Party (SNP) national conference in November 2007, the First Minister resurrected the term a "bonfire of quangos" (first used by Gordon Brown in 1995). The Menie Links part of the Foveran Links SSSI in Aberdeenshire was of

national and indeed international importance (Hansom 2007), but in 2008 the destruction of its scientific interest could not be stopped. Government Ministers, in the renamed 'Scottish Government', talked about a merger with the Scottish Environment Protection Agency (SEPA) and possibly the Forestry Commission (Scotland) but that has not happened yet. In Wales the equivalent merger of CCW, with the Forestry Commission Wales and Environment Agency Wales, rumored since at least the late 1990's (Green 1999), looks to be almost certain, with a current consultation on a new single body as I write this article (Welsh Government 2012).

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Both CCW and SNH remain influential and respected consultation bodies amongst professionals. But too often their advice has fallen on deaf ears, because elected committees, and sometimes Ministers, have ignored policy and seen damage to the terrestrial and marine environments as a price worth paying for the (sometimes illusory) prospect of attracting development expected to create jobs in Scotland or Wales.

At least from 2000 to 2006, it seems to me that English Nature was an effective force in biodiversity and, let us not forget, in geological conservation too. Managed and directed by good scientists, English Nature promoted and supported sound research. It developed its own policy base as well as influencing that of Government, most notably in *Planning Policy Statement 9* (2005), which introduced an expectation for

planning policies and decisions not merely to conserve but also to enhance biodiversity. In retrospect, that policy may not have been effectively implemented in light of the findings of Lawton (2010). The defeat of the Dibden Bay Container Terminal from 2000 to 2002 showed English Nature was a force to be reckoned with; subsequent port-related developments were approached differently. In October 2006 the long overdue marriage of English Nature and the Countryside Agency was secured, also merging part of the Rural Development Service to become the now familiar, but seemingly ever-changing Natural England, struggling with reduced resources, as indeed all the agencies are.

The JNCC was reconstituted by the same Natural Environment and Rural Communities Act 2006, and has strengthened its influence over government policy and its co-ordinating role for policy and perspectives for the UK Government and devolved administrations. Its unscathed survival of the 2010 review of public bodies, on the grounds that it should be retained because its impartiality was necessary, is a credit to its reputation as well as its role.

Things have not been static across the Irish Sea. The Heritage Act of 1995 created both the Heritage Council of Ireland and Dúchas, which took over responsibility for national parks and wildlife from the Office of Public Works. They had the unenviable task of protecting the natural environment from the worst effects of the rampant 'Celtic tiger' economy of the 1990s and early 2000s, with a weak rural planning system and a massive infrastructure investment programme. How things have changed.

Dúchas operated as an executive agency of the Department of Arts, Heritage, the Gaeltacht and the Islands from 1997. That made it easy to abolish it in 2003, because no primary legislation was needed. Relevant functions were transferred to the National Parks and Wildlife Service (NPWS) in the Department of the Environment, Heritage and Local Government, which had come into being in 2002, only to be replaced in 2011 by the Department of Arts, Heritage and the Gaeltacht, where the NPWS now resides. At times both Dúchas and the NPWS have had to work hard for their voices to be heard from within the Irish Government, even with the Heritage Council chipping away from outside.

The Heritage Council provides the best example of a comprehensive remit. The 1995 Act defines 'heritage' so as to include monuments, archaeological objects, heritage objects such as art and industrial works, documents and genealogical records, architectural heritage, flora, fauna, wildlife habitats, landscapes, seascapes, wrecks, geology, heritage gardens, parks and inland waterways! The Heritage Council originates, promotes and advises the Government on nature conservation and other heritage policy, but seems to me to have moved more towards supporting jobs, education and heritage tourism over recent years. Nevertheless, one major step for the Council, in 2007 was to establish the National Biodiversity Data Centre (NBDC); and it continues to pioneer the High Nature Value Farming (HNVF) initiative in partnership with local farming communities in the west of Ireland.

In Northern Ireland things are different. The Department of Environment Northern Ireland (DOENI) is not merely an environmental department but the planning authority for Northern Ireland as well. This comprehensive remit has not always led to transparent decision-making. The consequences of not separating out consultation advice on environmental conservation, designation and management from the roles of plan-making, environmental assessment and deciding project applications are now apparent from the 'Seaport' ruling of the Court of Justice of the European Union (2011). This case, of course, has ramifications for other bodies, such as the Environment and other agencies, which have dual roles of plan-makers/project developers and statutory consultee under SEA and EIA. In future there must be a 'functional separation' where the same body is plan or project proposer and the environmental consultee under the strategic and project environmental assessment and the Habitats Directives. What form that will take is uncertain at the time of writing but may well be apparent by the time of publication, in Wales at least, where the problem is in sharpest focus because of the proposed single body.

Feature Article: The Effects of Devolution (continued)



So, it goes to show that the fascinating evolution of devolution (in 1990 narrowly avoiding a revolution), will continue to see changes in our organisational structures. There have undoubtedly been failures, and some will insist that the 'devolution' of CCW and SNH weakened nature conservation influence. But on the whole, I think that the devolution has had a beneficial effect on policy and practice in ecology and environmental management, the central issue which I was asked to consider. Despite the efforts of different Ministers to clip the wings of conservation bodies, I think that in terms of ecological science and practice they have done at least as much as could or would have been done by a single UK-wide conservation and scientific institution; and they have done it differently. What we should hope for is that sound science, good practice, 'local' (national) knowledge, and impartial professional advice unfettered by arguable political and economic imperatives will always rise above the threats, rhetoric and musical chairs of governments trying to 'improve' accountability and cut costs.

I wonder what those standing patiently in the queue with me in 1991 have made of all of this change, answers on a postcard please from Bangor, Belfast, Dublin, Inverness and Sheffield. Happy 21st birthday IEEM, foster your Irish, Scottish and Welsh Sections; long may they continue to ensure that ecology and environmental management policy and practice has distinctive national flavours, based on sound professional principles that should transcend all boundaries.

About the Author

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Biodiversity Offsetting – Challenges to Come and a Way Forward in Essex

Tom Tew MIEEM

Chief Executive, The Environment Bank

It is widely agreed that new mechanisms are necessary to reverse the widespread loss in biodiversity and deliver national and international aspirations for 'no net loss'. Biodiversity offsetting, launched in the Natural Environment White Paper, is one such mechanism and is being delivered in England with a range of national pilot schemes. There is still much to learn in these pilots and the sector should unite to find solutions. In one pilot in Essex rapid progress is being made in drawing together stakeholders, with some early purchase of conservation credits alongside the launch of a national registry that provides a platform for the buying and selling of 'conservation credits'.

With 'no net loss' of biodiversity likely to be the key target for future international and European conventions and Directives, biodiversity offsetting was a key policy initiative in the Government's Natural Environment White Paper launched in October 2011. After the White Paper, Defra invited local planning authorities to test biodiversity offsetting through nationally recognised pilot projects. Planning Authorities reacted to the invitation with enthusiasm, and eventually six projects (two more than was originally planned) were given national pilot status.

The national evidence¹⁻³ conclusively demonstrates that the current four conservation cornerstones (protected sites, agri-environment schemes, biodiversity action plans and the planning system) are not doing enough to conserve the natural environment. Apart from a small list that includes a few generalist species, some pretty pin-ups of Biodiversity Action Plans, and the thermophilic colonisers of a changing climate, every taxa for which we have good evidence is showing widespread and consistent declines in both distribution and abundance.



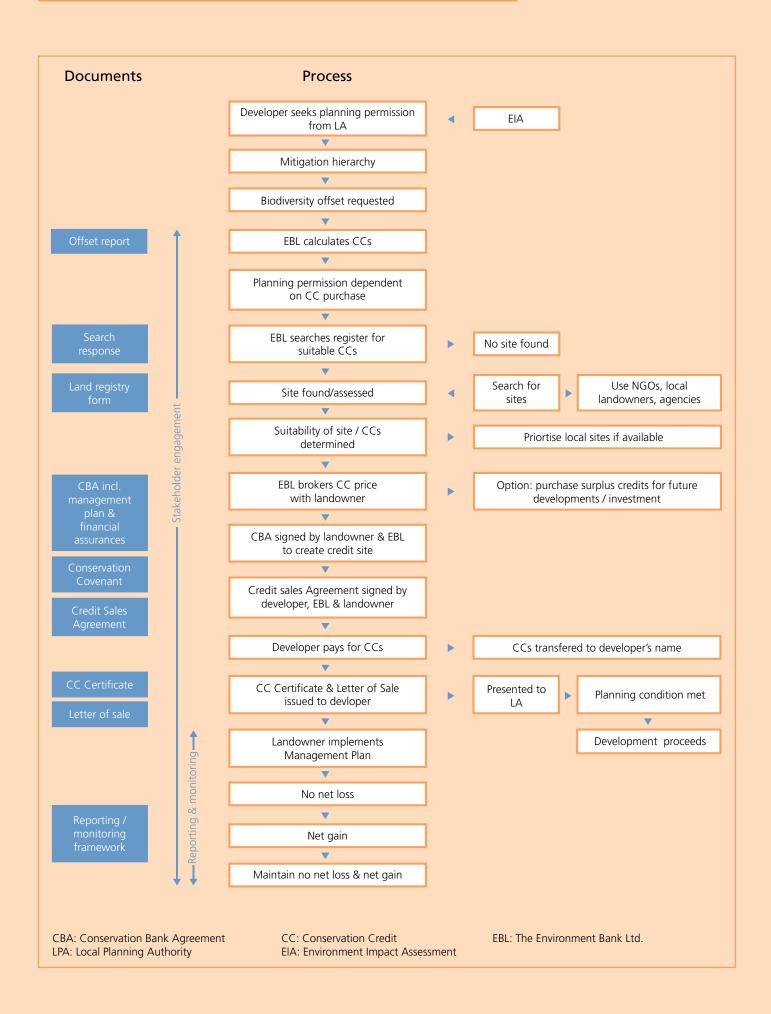
As well as continuing and improving our efforts in those four cornerstones, we need to try something different and it has to be large scale. The *Making Space for Nature* report⁵ suggested the financial shortfall between what we need to spend in the UK and what we actually spend was in the order of £1 billion per annum. In which context, the £7.5 million over three years that Defra has set aside for Nature Improvement Areas, welcome though it is, can only be seen as start-up seed funding.

At the same time, the debate over the National Planning Policy Framework has been fierce, for it is here that the nation's planning authorities will forge their understanding of what 'sustainable development' really means. Truly sustainable development – development that delivers both ecological and economic recovery for the benefit of society – is indeed

surely possible, but only if we can capture, for the first time, the real ecological value that is contained in every field, whether it's arable, grass or nature reserve. Society, or Local Planning Authorities in their role as representatives of society, needs to quantify and then account for the environmental value of 'everyday' habitats like arable or grass fields. Local Planning Authorities need to start using the Defra metrics⁶ on biodiversity offsetting, and the National Planning Policy Framework needs to reference biodiversity offsetting if it is to deliver 'no net loss' of biodiversity.

The consensus from conservationists, planners and developers at the moment is that biodiversity offsetting in the UK could be effective, but no-one is certain it will be. There are clear lessons to be drawn from overseas.

Feature Article: Biodiversity Offsetting – Challenges to Come and a Way Forward in Essex (continued)



The USA, albeit after 30 years with a few false starts, now has its act together on offsetting, and Australian states introduced offsetting as a regulatory requirement, driving programmes like Bushbroker, a decade ago. Globally, there are more than 40 offset programmes, with more than 600 'habitat banks' established and delivering conservation credits. The global market in conservation credit funding for conservation is at least \$2 billion, probably much more, and there are 86,000 hectares of land going into conservation management or permanent legal protection per annum.

How, then, will offsetting operate in the UK? And how can supporters of offsetting (like The Environment Bank) demonstrate delivery of sustainable development? The first thing to note is that offsetting in England will be voluntary – developers cannot be made to offset, but instead may be offered offsetting as an option to more traditional \$106 routes.

In a nutshell, the Local Planning Authority agrees with the developer that planning consent can be conditioned with biodiversity offsetting. The residual environmental impact of the proposed development (after the normal mitigation hierarchy of 'avoid and reduce' has been followed) is calculated using a series of Defra metrics that assess habitat type, condition and area. The developer is left with, say, '15 grassland credits' that he/ she needs to buy to offset his/her impact and satisfy the planning condition. Elsewhere, a farmer or conservation NGO land manager has submitted on a registry that they have

a long-term management plan that will, if funded, deliver biodiversity gain of 15 credits. This calculation too is done using the Defra framework, although this is not quite as simple since it needs to correct for temporal, spatial and delivery risks via some multipliers. When the two - developers needs and land managers offers - are matched, then credits are bought and sold and money passes into the system to fund the long-term conservation management. The process actually gets quite complicated (see box) because of all the fiscal and legal assurances that are necessary for the Local Planning Authority (and indeed everyone else) to be confident that the planning decision is really going to deliver net biodiversity gain.

If offsetting is to work under voluntary systems then it must work for all three major stakeholders – developers, Local Planning Authorities and conservationists.

For developers, good biodiversity offset systems save time and money. They provide a fair, streamlined and secure process, with greater clarity in the planning system and predictable costs and outcomes that aid future project planning. Importantly, all liability for offset delivery is discharged in one transaction, freeing the developer from long-term management costs and liabilities (which are taken on by, for instance, a local land manager). Most critically, there is increased net developable area because the damage is decoupled in space and time from the compensation. In other words, arable land available for sustainable housing is not forced

to produce a (poor) nature reserve, but funds for conservation are released to be spent on land with greater wildlife potential. The scheme also allows the complete transparency that explicitly demonstrates long-term biodiversity gain, and allows operators to be crystal-clear about the contribution they are making to environmental protection.

For Local Planning Authorities, offsetting provides a simpler system than long-term S106 agreements, with a reduced burden on staff time and resources through discharged management of offset compliance and delivery. There is open and transparent accountability for planning decisions, as the local community can see that land lost to development is being compensated for at specific receptor sites.

Separately, owning (and registering) wildlife sites suddenly becomes economically viable because such sites can be used to offer credits, providing landowners with an economic incentive to enhance and create natural areas. Income is paid over 25 years (or longer) reliant on delivery but, importantly, the land remains within their ownership and control. In the US such systems have led to 'habitat banking' with large areas of privately-owned wetlands being created for the long-term benefit of both the environment and their owners.

As we move now in England from policy development to operational delivery, there are a number of key challenges for the sector to sort out:

- Voluntarism without the regulatory framework for offsetting those advantages (reduced costs and greater certainty for developers, less work for planners, more funding for conservation) need to be transparent and evident.
- Meeting global principles there are extremely good international guidelines for offsetting⁴ which set out criteria for mitigation hierarchies, for equity and for transparency; we would expect any UK schemes to meet all of these standards.
- Localism there will always be potential tension between localism, where Planning Authorities will quite naturally want to see environmental impacts received locally to be compensated for locally, and nationalism, where a 'Lawtonian' vision for reconnecting the English landscape sees great advantage in many local impacts being offset with a few very large-scale national habitat restoration projects.
- Offsetting metrics work by Defra has
 delivered a Government framework⁴ but
 there is still some work to be done to refine
 the detail of those multiplying factors
 that account for the temporal and spatial
 delivery risks in creating or restoring habitat.
- 'In-perpetuity' we hope the sums generated by offsetting will produce a step-change in environmental finance; it would be nice if offsetting could also provide a step-change in environmental planning, moving from three-year action plans, or 10-year agri-environment schemes, to 25-year management agreements or 99-year leases in the absence of generally enforceable 'conservation covenants', however, it is difficult to see anything longer-term.

These challenges are significant but, if the sector works together with purpose, entirely surmountable.

Feature Article: Biodiversity Offsetting – Challenges to Come and a Way Forward in Essex (continued)

The Essex Pilot

To return to those six national pilots mentioned at the start, one of the successful applicants was Essex County Council. Having completed an early feasibility study to explore the potential of biodiversity offsetting in the county, Essex County Council teamed up with the Environment Bank and Environment Agency to submit a successful expression of interest to Defra. Other partners have rapidly come on board to support delivery of the pilot, from (nearly all the) local authorities to Parklands South Essex and the Mineral Products Association.

Conditions for testing biodiversity offsetting are good in Essex as it is likely to see continued high levels of economic growth with a great need for development that delivers sustainable environmental outcomes while the economy recovers. Equally, the county has a rich natural heritage across woodland, grassland and coastal ecosystems, much of which however is fragmented or degraded – the potential for restoration is high. In common with the rest of the country, the consensus in Essex is that (with some notable exceptions) the current system of compensating for the impacts of development on the environment hasn't been working, either for the environment or for society. Efforts have been largely poor quality and short-term and expensive; complicated and slow to implement by authorities and developers.

So now there's an opportunity to see landscape-scale environmental benefit across Essex, and the challenge is to introduce a robust strategy that focuses BAP habitat restoration and recreation where it is most needed. Site selection will be steered by an 'offsetting strategy', primarily within Essex Wildlife Trust's 'Living Landscape' areas, while addressing local authority and community desires to ensure that benefits are felt locally. Sites might take the form of large wetlands created on farms, habitat corridors between existing reserves, or buffer zones enhancing existing Local Wildlife Sites.

With such a drive for change, interest in the scheme is growing rapidly. Although the pilot only started in April 2012, stakeholder engagement and work to identify potential developments and 'receptor sites' is already underway. The Environment Bank has established a live and online 'registry' of

receptor sites, the Conservation Credits Exchange (https://environmentbank.mmearth. com) - wildlife sites that will receive funding in return for delivering 'conservation credits' - from where developers who wish to offset their impacts can purchase the right type, scale and location of conservation credit. Anyone in the UK can register their receptor site on the Conservation Credits Exchange free of charge.

The pilot is voluntary and so establishing strategic partnerships with representative organisations such as the Minerals Products Association (MPA) will pave the way for developer involvement. On-site restoration of, and wetland creation at, quarry sites is a well-established and successful tool for the industry (see Tiptree quarry photo); offsetting not only offers a source of income to drive the environmental restoration of quarries, but also an opportunity to compensate for impact during quarrying at sites, and with habitats, away from the quarry site. Such forward planning by the minerals industry complements the current consultation phase of the Minerals Development Document in Essex, which considers the need for an adequate and sustainable supply of minerals for Essex to 2028.

Biodiversity offsetting is not guaranteed to work under a voluntary system – certainly elsewhere in the world regulatory frameworks have proved most effective over the last two decades. But then again voluntary carbon offsets are now selling at a significant premium over their mandatory counterparts, because the greater flexibility of voluntary systems can deliver more effective (less bureaucratic) offsetting, which makes them more attractive to corporate investors. Coupled with the certainty that what we have been doing thus far is not enough, the onus is on the environmental sector to work together to make voluntary offsetting as good as possible, as quick as possible, and find out if we can be part of a system that delivers ecological recovery alongside economic recovery.

For more information on the Essex pilot, please contact Cara Reece (creece@environmentbank.com) or Luke Bristow (luke.bristow@essex.gov.uk).

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21 Questions for the Future –

as chosen by the Fellows of the Institute

Policy and Information Officer, IEEM

Much of this edition of *In Practice* has looked at the past, the 21 years of our history, and how far we have come. This article looks, to some extent, at where we still need to go and what questions we still need answers to. The questions relate to applied ecological and environmental management research, policy and practice for the next 5-10 years.

In putting this article together, the Fellows of the Institute were asked to put forward questions that they felt needed answers. These questions were then collated and the Fellows asked to score them on their importance. The 21 questions listed below are those that ranked the highest.

As the questions are only the 21 highest ranking, we cannot say that this is a definitive list of work that needs to be done for the sector, but rather it is a list of those overarching issues that the Institute's Fellows feel most in need of attention.

1. How can we better encourage decision-makers to use ecological and environmental management science and evidence in policy-making?

It is widely recognised that the value of the natural environment to society is not taken into account sufficiently by policy-makers; just look at George Osborne's comments on "things like habitats placing ridiculous costs on British businesses" in his 2011 Autumn Statement¹. Despite this, Defra's own preliminary analysis of its regulatory stock² in 2011 showed that biodiversity regulations actually have a direct net benefit to UK business of £3 million per year and other net benefits equalling £845 million per year. Various publications, including those of The **Economics of Ecosystems and Biodiversity** (TEEB)³ project, have demonstrated (often at a global scale) the value of biodiversity and ecosystems, but how can these values, including the health and cultural benefits, be more clearly articulated and more widely understood?

2. How can we ensure that decisions involving biodiversity management are based on the best-available data and evidence?

Good environmental decision-making necessitates the best available data but the systems of data recording, data sharing, data management, analysis and interpretation in the UK involve many players and are like a curate's egg – good in parts, less good in others. The issue is exacerbated by cuts in public spending which undermine the work of many Local Records Centres and the NBN Gateway. How can we build a truly effective system of recording, sharing and using data? What can we learn from other countries, such as the Republic of Ireland? How can we advocate to funders the importance of data and of investing in Local Record Centres and national biodiversity recording and data management schemes?

3. How can we better integrate ecology and environmental management with other related professional disciplines?

The last 21 years have seen the ecology and environmental management profession become more respected by other professions, for example, planning, construction, architecture, agriculture and water management. However, it is still often seen as the 'poor relation'.

The designation of Chartered Environmentalist (CEnv) has done something to raise the profile of environmental professionals, and the potential new Chartered Ecologist designation should do the same for ecologists. These designations will not however raise the profile and recognition of ecologists and environmental managers in themselves unless they are backed up by a demonstrable raising of standards in the sector.

Related to this issue is another one; how do we make the ecological and environmental management sector more appealing as a profession?



Feature Article: 21 Questions for the Future (continued)

4. How can we better link ecological research and practice?

IEEM was born out of the more academically-based British Ecological Society (BES), but in the intervening 21 years there has been something of a disconnect between academics and practitioners. IEEM and the BES still work together wherever practicable, but there is still a need for practitioners to let academics know what research would help them and for academics to make their findings available to practitioners to implement.

The BES has started to address this issue through the *Journal of Applied Ecology*'s Practitioner's Perspectives papers (see *News in Brief* at the beginning of this issue). And IEEM certainly has a role to play in sharing information, for example through *In Practice* and the Policy eBriefing, and also by contributing to BES and other publications.

5. How can we improve the fourway communication process between research, practice, the public and policy?

Related to the previous question, there is also an issue regarding the links between scientific discovery, practical application, public support and political will. As above, we need to ensure that there is effective communication between all four groups. It could be argued that this is a key role for local authorities and statutory nature conservation agencies – another group of bodies that have been significantly affected by public spending cuts and need our support.

6. What is sustainable development and can it really exist?

We all understand the three aspects of sustainability – economic, environmental and social – but what is 'sustainable development' and can it ever actually be a reality? Is the idea of ongoing 'development' possible on a planet with finite environmental resources? It could certainly be argued that ongoing growth is not possible on a finite planet, but are 'growth' and 'development' necessarily the same thing?

7. How can we reconcile the ecosystem services paradigm with biodiversity conservation?

There is increasing concern that the ongoing loss of biodiversity may compromise the provision of ecosystem services. The notion of preserving and enhancing ecosystem services has gained huge momentum over the



last few years, for example through the UK National Ecosystem Assessment (UK NEA)⁴, and to some extent seems to have overtaken the sense of the urgency to conserve biodiversity in its own right.

NERC's Biodiversity and Ecosystem Services Sustainability (BESS) project⁵ is a five-year (2011-2015) research programme, which aims to contribute to our understanding of the functional role of biodiversity in key ecosystem processes. It aims to improve the understanding of the role of biodiversity on ecosystem functioning and service provision at a landscape-scale. It uses the useful terminology of 'stocks' (the biodiversity present) and 'flows' (the ecosystem services arising from that biodiversity). With the ever increasing pressure on land use it is important that we understand how biodiversity and ecosystem services interact and how we can preserve both.

8. How can effective ecology and environmental management exist without taxonomic competency?

There is a worrying trend in the loss of some relevant professional skills, as shown in the Institute's Ecological Skills Project report⁶. One of those skills sets in particular was species identification. Another concern is the loss of courses teaching these skills, such as the closure of Birmingham University's taxonomic identification courses. How can we maintain expertise into the future?

9. What mechanisms do we need to help achieve the greatest number of public benefits from the use of the land?

Land use planning is immensely important for a large number of reasons, for example, the provision of public benefits including housing, food production, and health and well-being. However, increasing pressures on land use mean that decisions made now will have impacts for years or even decades to come.





In the context of this, England has recently published the *National Planning Policy Framework* (NPPF)⁷ and Scotland⁸ and Wales⁹ are both in the process of reforming their respective planning systems. We will have to see how these reforms work out in practice, but we also need to know what procedures could potentially be put in place to ensure that all public benefits are taken into account. Furthermore, we need to find the balance between these procedures being informed by a top-down land-use planning approach and a bottom up adaptive management approach.

10. Do we need a new basis for strategic planning to deal with the complexity of choices and challenges?

Related to previous questions about the wider public benefits of land use planning, do we need a higher level of national strategic planning to take into account the overwhelming complexity of choices and challenges that face our decision-makers?

11. What are the implications of a 'no net loss' of biodiversity and habitat policy for development projects?

Is it possible for the 'no net loss' of biodiversity and habitat stated in various government policies to truly be achieved, especially in the context of the new planning policy in England and the coming reforms in Scotland and Wales? How will we measure 'no net loss'?

12. What is the evidence for biodiversity offsetting and habitat banking working in the UK and Ireland?

There is a wealth of evidence on habitat banking from Australia and the USA, but these are large countries without the same land constraints as the UK and Ireland. There is increasing policy support for biodiversity offsetting as a tool (e.g. as noted in the Natural Environment White Paper for England¹⁰) but will it work in practice and can the risks be effectively managed? There are currently six pilot projects underway in England that will hopefully help to answer these questions.

13. How do we manage wildlife in the face of increasing demands for access to and recreation in 'wild' areas?

In the face of an increasing human population and the need and desire for more access to coastal areas and greenspaces, how can we manage the impacts of access and recreation on our more remote 'natural' or 'wild' areas without compromising their biodiversity value?

14. Are small, isolated semi-natural habitat fragments viable for nature conservation in the long-term?

Sir John Lawton's *Making Space for Nature* report¹³ showed that we certainly need to improve the quality and connectivity of our wildlife sites in England, and the suggested Ecological Restoration Zones are now starting to be implemented as Nature Improvement Areas¹⁴. We need to make our nature conservation areas (in Britain and Ireland) "more, bigger, better and joined". However, with continued land use pressures from a growing human population, how small and how fragmented can these sites realistically be to sustain biodiversity and ecosystem services in the long-term?

15. Is there any evidence from the UK that habitat fragmentation has resulted in actual loss of species through the process of extinction debt?

Extinction debt is the future ecological cost (e.g. extinction of species) of current actions (e.g. habitat destruction). Following on from the previous question, it would be useful to have an evidence base of events and actions in the past that have fragmented habitats and then some time later resulted in the extinction of species. This would help to inform current and future decision-making in relation to habitat connectivity.

16. What are the most urgent needs relating to invasive species?

Introducing a dedicated legislative instrument on Invasive Alien Species was one of the six key objectives of the EU 2020 Biodiversity Strategy adopted in May 2011¹⁵. Following on from this the EU has recently consulted on this new legislative instrument, with current work articulated around three main topic areas: prevention; early warning and rapid response; and eradication, control/management and restoration of damaged ecosystems. When completed, this European Directive will need to be transposed into national legislation and the most urgent and important needs for each country will need to have been clarified. What are they?

Feature Article: 21 Questions for the Future (continued)

17. What are the implications for biodiversity and ecosystems in a water-stressed future?

With the almost imminent change in precipitation patterns that will occur with climate change (leading to both flooding and drought), we need to better understand how our biodiversity and ecosystems will be affected and what we can do to mitigate any adverse effects.

18. How much of the marine environment do we need to preserve in order for marine conservation areas to effectively conserve biodiversity?

The UK is committed to delivering an ecologically coherent and well-managed network of Marine Protected Areas (MPAs) by 2012. MPAs will aim to protect marine life while at the same time allowing sustainable use of our seas. The network of MPAs will ensure that we meet our commitments under the Convention on Biological Diversity and contribute to measures aimed at achieving Good Environmental Status across Europe's seas by 2020 under the EU Marine Strategy Framework Directive. However, we still do not know how much of the marine environment will need to be protected in order for us to effectively conserve marine biodiversity in the long-term. Are the Aichi 2020 targets realistic and effective?

19. What research is needed to ensure that we do not lose soil biodiversity and ecosystem functioning?

Despite a proposal for a Soil Framework Directive being put forward to the European Union in 2006, there has been little progress in getting to an accepted position. However, two recent reports16,17 underline the need for action to prevent the ongoing deterioration of Europe's soils. Erosion, soil sealing and acidification have all increased in the past decade, and the trend is likely to continue unless challenges such as land-use change, the inefficient use of natural resources and the preservation of organic matter in soil are addressed. How do we gain wider understanding of the importance of soils and soil management to ecosystem functioning?

20. How can we increase food and fuel production and at the same time reduce the impact on biodiversity through sustainable intensification?

An increasing human population will continue to need to be fed, clothed and housed. Can we sustainably intensify our land use such that we can achieve both food and fuel security and protect and enhance biodiversity and ecosystems? In this context it would also be useful to know the consequences of different food and fuel production practices are for biodiversity.

21. Can current intensive agriculture and biodiversity co-exist or do we need to have spatial separation?

Following on from the previous question, this issue relates specifically to whether intensive agriculture and nature conservation can both be effective in an integrated way, or whether they need to be separated spatially. The scale at which this question is asked is also of high importance.

One possible way to look at this question could be to ask how effective payments made under the Common Agricultural Policy have been at conserving biodiversity on farms.

About the Author

Jason Reeves is the Policy and Information Officer for the Institute of Ecology and Environmental Management. He edits the Institute's membership bulletin, In Practice, and is also the Co-ordinator for the European Network of Environmental Professionals.

Contact Jason at:

iasonreeves@ieem.net

Notes

Institute News

On the 13th June 2012 we will be holding an Extraordinary General Meeting (EGM) in London which marks a very significant step in IEEM's history. Members will be asked to vote on changes to the way the Institute is governed and also on whether the Institute should petition for a Royal Charter. Both of these matters are vitally important to our future so if you have not sent in your voting form yet then please do so urgently.

Later this month we will be celebrating another very special highlight of the year – our 21st anniversary and the presentation of the IEEM Medal to a recipient who has made an outstanding contribution in their field. This year we are very pleased to be holding the reception at the House of Lords as the guest of Baroness Barbara Young. The recipient of the Medal is Lord Robert May of Oxford. Lord May holds a Professorship jointly in the Department of Zoology, Oxford University, and at Imperial College London. He has been President of the Royal Society, and before that was Chief Scientific Adviser to the UK Government and Head of the UK Office of Science and Technology. Lord May is a crossbencher in the House of Lords, having been made one of the first Life Peers created by the House of Lords Appointments Commission.

Members will have noticed the significant changes to the new-look In Practice. In addition, the new IEEM website will go live shortly. Thank you for all your positive and helpful feedback on In Practice, we would similarly welcome your thoughts on the new website when it goes live.

Eligible members will have noted that we have a new Professional Directory linked to the Biodiversity Toolkit. In addition to the standard free listing there is also now the opportunity to purchase enhanced listings including use of your company logo and weblinks. Please contact Richard Watts at richardwatts@ieem.net for further information or visit the website.

Simon James

We are very sad to report the death of Simon James MIEEM (1958-2012), who was a widely respected freshwater ecologist. He was a long standing member of the Institute and had been a member of the External Affairs Committee since early 2009. Simon was also a Trustee of the Freshwater Biological Association (FBA) and was the driving force behind the joint FBA-IEEM 'The Future of Freshwaters' conference held in September 2009 at Warwick University.

Staff Update

We were very pleased to welcome Helen Boulden to the team in May as the new Training and Professional Development Officer in place of Becky May who left us in February. Helen has previously worked for WWF-UK, the IUCN Secretariat and local authorities in various biodiversity information and communication roles. Meanwhile Richard Watts has been promoted to the role of Administrative Officer.

As a further indication of our commitment to taking forward our continuing professional development activities we have engaged the services of Mike Oxford MIEEM and Liza Booth to provide strategic advice and project management in some key areas of training and professional development.

We have just said goodbye to KTP Project Associate Mike Ramsell, who managed the pilot higher education accreditation project. We wish him well on his travels in New Zealand.

Projects Update

The pilot project to investigate the feasibility of developing accreditation of higher education degree courses has come to an end and Council will make a decision on whether or not to proceed later this month. The purpose of accreditation would be to recognise those degree courses that give graduates the specific areas of knowledge and skills that employers are seeking, including practical survey skills and species identification.

Also recently completed has been the pilot mentoring project that has been running for the past 18 months in North West England. A number of mentors have been trained and have been supporting mentees to develop their career roles. Mentoring is an important means of supporting young professionals and is something that the Institute is keen to find ways of developing further.

Another of the recommendations of the Ecological Skills Project report was the production of a generic Competency Framework for the profession. This work is underway and will result in a career planning tool and the development of competency-based role profiles linked to specialist competency frameworks and the national occupational standards for environmental conservation.

Finally the Professional Affairs Committee has also instigated a scheduled review of the Institute's Code of Professional Conduct and Disciplinary Process to ensure that it is 'fit for purpose'. Alongside this review is another initiative looking at the development of mechanisms to address poor quality work by members -i.e. work that does not necessarily breach the Code of Professional Conduct but is below the standard that would be expected of members. Anyone requiring more information on these two projects can contact Linda Yost at lindayost@ieem.net



Training Workshops

Ecological Clerk of Works

This one day course is designed to help delegates gain an understanding of the Ecological Clerk of Works role and how to discharge it effectively. The course content will include understanding the role of an Ecological Clerk of Works on a construction site including monitoring, auditing and incident reporting. The identification of construction site constraints and survey methods will be covered along with general mitigation measures to protect, enhance and restore ecological receptors. There will also be a session on communication skills including on-site behaviour, site induction, client and stakeholder liaison and record-keeping.

Dates and venues:

11th June, Glasgow

14th June, Llandrindod Wells

26th June, London

25th September, Birmingham

27th September, Exeter

Environmental Advisor for Construction Sites

This one day course is designed to help delegates gain an understanding of the role of an Environmental advisor on a construction site and how to discharge it effectively. The course content will include understanding the role of the Environmental Advisor including monitoring, auditing and incident investigation. The identification of construction site environmental constraints issues during construction, including contaminated land, light, water, noise and dust pollution will be covered. Risk assessment and method statements will be addressed along with creating an impacts register.

Dates and venues:

12th June, Glasgow

15th June, Llandrindod Wells

27th June, London

26th September, Birmingham

28th September, Exeter

Masterclass

Professional Ethics

Wednesday, 17th October 2012, Birmingham

what is professionalism? and what is environmental ethics? Throughout the day we will explore how both questions are intimately related within the fields of ecology and environmental management. What are the obligations of professionals in comparison with other social roles? How do we negotiate conflicts of interest that arise in areas of work such as conservation, planning, woodland management, species preservation? Do our local environmental concerns match up with our global concerns?

The new Masterclass will address two fundamental questions: A better understanding of which principles and values guide our behaviour also facilitates the practical skill of effective decision-making. In the second half of the day, case studies will be used to tease out the different ethical and professional challenges that arise in real-life scenarios, and discussions will explore how we might address them. IEEM's Code of Professional Conduct will be used as a basis for many of the discussions, but attendees are also invited to bring along their own case studies and experiences for discussion.

For more information please see: www.ieem.net

North East England Section News

Restoration of Lambton Coke works using on-site manufacture of soil from PAS 100 compost, colliery shale and paper mill crumb.

The former Lambton Coke works, near Chester le Street, in County Durham is undergoing redevelopment with housing and parkland following a history of mining and coke manufacture. After initial demolition works, bioremediation, burial of contaminated materials, and landscaping, significant challenges remained. These included a shortage of sub soils, particularly to support the large areas of grassland and woodland planned. The solution adopted was the manufacture of sub soils on-site using mixtures of colliery shale, paper mill crumb and Publicly Available Specification (PAS) 100 green compost waste. On 17th February 2012, IEEM members met to hear presentations at the University of Sunderland by the principle partners involved in the innovative project. Chris Munro from the Homes and Communities Agency detailed the site's history, the housing development and consultations with existing and new residents, while Lee Best from the Waste and Resources Action Programme (WRAP) described the PAS 100 for manufacture of compost from green wastes. Robin Davies of Soil Environment Services then gave a detailed description of the technical aspects of the manufacture and placement of sub soils at Lambton. This was followed by a visit to the site.

The BSI PAS 100 has been sponsored and promoted by WRAP and specifies the requirements for production of good quality, reliable composts to be used in land reclamation and other projects. The Lambton Coke works site was selected as a trailblazer site for use of compost produced to PAS 100. A total of around 16,000 tonnes of compost was imported to the site and mixed to produce sub soils. Robin Davies' presentation described a series of experimental trials conducted to select the most appropriate mixtures, soil profile and placement method. All experimental plots received 1m depth of sub soil made from two parts paper mill



crumb (PMC) to five parts colliery shale. An upper 90cm layer was then added with either 50:50 ratio of compost to PMC, or 80:20 ratio of compost to PMC. A final 10cm layer of site-won topsoil was applied to all plots. Replicates in each soil mixture treatment were placed using bulldozer (either narrow-track or low load wide-track) or loose tipping in a further element of the experimental design. Monitoring revealed no difference in tree growth between 50:50 and 80:20 soil mixtures, and little difference between narrow- and wide-track bulldozers, but the benefits of loose tipping were marked. Soil placement by bulldozer led to soil compaction, limitation of growth by tree roots, anaerobic sub soil conditions, low rates of gas diffusion and accumulation of high levels of methane (from PMC breakdown).

Problems were less severe using a wide track bulldozer, but did not arise with loose tipping. The site visit vividly demonstrated both the success of establishing trees on the manufactured sub soils and the importance of using loose tipping. Trees were visibly taller in plots where loose tipping had been used (Figures 1).

The on-site manufacture of sub soils using imported PAS 100 compost and PMC, when compared to importation of sub soil, will ultimately save approximately £452,000,

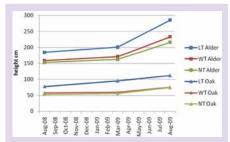
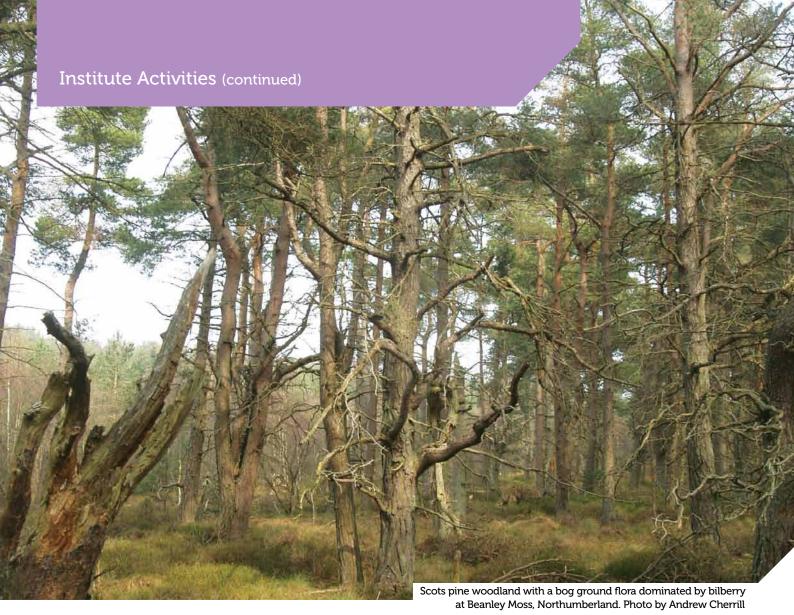


Figure 1. The mean height of trees (2008-2009) after planting into plots placed using soil placement by loose tipping (LT), wide track bulldozer (WT) and narrow track bulldozer (NT).

(Image: Robin Davies, Soil Environment Services).

including £18,000 from reduced tree mortality, at the 60 ha former Lambton Coke works site. Readers wishing to obtain further information can do so by visiting the WRAP website (www.wrap.org.uk) from where the BSI PAS 100 Producing quality compost and final report on the experimental trials (Brownfield Trailblazer Final Report: Lambton Former Coke Works by M. Palmer and R. Davies, Soil Environment Services, 2008) can be downloaded free of charge.



Scots pine forest at Beanley Moss, Northumberland

In March 2012, members visited an unusual, possibly unique, woodland site at Beanley Moss near Eglingham, Northumberland. The site is part of the newly designated Bewick and Beanley SSSI. The owner, John Carr-Ellison, and Steve Pullan CEnv FIEEM of Natural England led a small party on a beautiful spring day (Figure 2). Beanley Moss is a basin mire thought to have been grazed as common land until the mid-1780s. Thereafter, livestock were removed and woodland dominated by Scots pine developed. The site is now open woodland with an even aged structure canopy probably dating from tree establishment on cessation

of grazing (Figure 3). The trees appear not to have been planted and the woodland closely resembles Caledonian pine forest with a bog ground flora. The origin of the trees is unclear, but one possibility is that the site had a low density of Scots pine in the late 1700s. These may have spread across the site when grazing pressure declined. An exciting possibility is that these trees were remnants of native Scots pine forest and therefore that the site is a unique non-Scottish type of Caledonian pine forest. The Hedgeley estate is unusual in supporting a relatively large number of old Scots pine trees scattered at low density in the landscape.

Management at Beanley Moss aims to maintain the bog vegetation with the Scots pine canopy. This is unusual because maintaining favourable condition status for this type of ground flora would normally requirement removal of the trees. Research is required to determine the history of the site through use of archival records, peat cores and dendrochronology. Further information may be obtained by contacting Steve Pullan (steve.pullan@naturalengland.org.uk).

Andrew Cherrill CEnv MIEEM Convenor

East Midlands Section News

The East Midlands Geographic Section held its first Committee meeting on 8th March 2012 at SLR's offices in Nottingham. The meeting was attended by members from across the region and many topics were discussed including how the East Midlands Section can

help celebrate 21 years of the Institute. It is hoped that the Section will be able to hold a number of events across the summer and further details will be announced as soon as possible. If anybody is interested in getting involved with organising an event or has a

particular topic that they can contribute with then contact should be made with Andrew Morris (andrew.morris@smithsgore.co.uk) in the first instance.

Andrew Morris GradIEEM Convenor



Reptiles - Research, Survey and Mitigation

Tuesday, 20th November 2012 Basildon, Essex

Topics will focus on:

- Reptile status and current action in East Anglia;
- Current research and survey methods;
- Mitigation and enhancement for development schemes; and
- The new Reptile Mitigation Guidelines



For more information please visit: www.ieem.net

Welsh Section News

Following our inaugural AGM held on 2^{nd} February 2012 at the Media Centre in Llandrindod, the Welsh Section has emerged from the shadows as a fully functional Section.

The Committee, comprising Mike Willis (Convenor), Fred Slater (Vice-Convenor), Abbey Sanders (Secretary), Tim Oliver (Treasurer), David Parker, Debbie Brown, Mick Green and Julian Jones were elected. Subsequently Jon Barnes, Hugh Dixon and Natalie Jones have been co-opted.

The AGM was held in association with a seminar discussing 'Environmental Aspects of Recently Completed Infrastructure North/ South Road Link Projects in Wales'.

A lively debate ensured during the meeting which continued in the afternoon when the recently completed A470 Cwmbach to Newbridge-on-Wye was visited. Despite it being one of the coldest days of the year,



48 people attended, which was encouraging for future activities.

We are actively planning a programme of events for the coming year, starting with a visit on 28th June 2012 to Newport Wetlands Environmental Education and Visitor Centre,

West Nash Road, Nash, Newport, NP18 2BZ. Later in the year we hope to arrange a visit to the Anglesey and Llyn Fens LIFE Project and a visit to the A470 Porthmagog Bypass.

Michael J Willis MIEEM Convenor



Have you been involved in a project that exemplifies best practice?

Would you like to be recognised and celebrated by your peers for it?

Have you recently finished long-term monitoring, proving that an earlier project was a great ecological success?

Apply now for the IEEM Best Practice Awards!

From 2012 onwards, the IEEM Best Practice Awards are changing! There are now three separate award categories in addition to the Tony Bradshaw Award for exceptional achievements.

Award categories:

- 1. Outstanding achievement in practical nature conservation
- 2. Outstanding innovation
- 3. Outstanding knowledge exchange and promotion of best practice

Entries of projects that demonstrate best practice in one or more of the three categories are invited from all sectors of the ecology profession including public, voluntary and consultancy sectors. Projects of any size will be considered.

Tony Bradshaw Award

The winner of each category will be automatically considered for the Tony Bradshaw Award. Entries are also invited specifically just for the Tony Bradshaw Award; from exceptional projects that demonstrate outstanding and effective practice in two or more categories.

The deadline for entries is 23rd July 2012.





The 2011 Best Practice Awards winners, Saving the Fulbourn Swifts, represented by Rob Mungovan (left), along with IEEM President Penny Anderson

For further information and the application form please visit www.ieem.net

Partnership News

IUCN

IUCN members will elect a new Council for 2013-16 at the IUCN World Conservation Congress, taking place in Jeju, Republic of Korea from 6-15th September 2012. IUCN has now announced the list of candidates for the positions of President, Treasurer, Chairs of Commissions and Regional Councillors. IEEM is very pleased to be supporting the nomination of Roger Crofts FIEEM as a candidate for Regional Councillor for West Europe.

European Network of Environmental Professionals

ENEP President Jan Karel Mak met with European Commission officials on 22nd March in Brussels to discuss the European Commission's interest in accessing environmental professional groups as part of the better implementation of environmental legislation as outlined in a recent communication (http:// europa.eu/rapid/pressReleasesAction. do?reference=IP/12/220&). According to the European Commission, failing to implement environmental legislation is thought to cost the EU economy around €50 billion every year in health and direct costs to the environment. Europe's environment is protected by some 200 pieces of well-established law, but they are not always properly applied. The communication is deliberately timed in order to stimulate a debate on enforcement and inform the emerging 7th Environmental Action Programme (7EAP) that the Commission is currently preparing for publication in the autumn.

IEEM Overseas Territories Special Interest Group

The IEEM Overseas Territories Special Interest Group (OT-SIG) has now held its second meeting. A Shadow Committee has been formed, which will be chaired by Mike Barker CEnv MIEEM. A number of other IEEM members have joined as ordinary Committee members. The group is still however looking for a Secretary and also members with connections to the Overseas Territories. For more information please contact Jason Reeves (jasonreeves@ieem.net).

Society for the Environment

Alex Galloway CVO has been appointed Chief Executive of the Society for the Environment (SocEnv), the independent umbrella body that regulates the licensing and award of the Chartered Environmentalist (CEnv) qualification.

Mr Galloway commenced his post as CEO on 2nd April 2012 and is an Honorary Fellow of SocEnv having previously been the Head of the Energy and Environmental Awareness Division of the Department of the Environment. In his role as Clerk of the Privy Council he oversaw the process that led to the grant of a Royal Charter to SocEnv. He leaves his present appointment with a City Livery Company to take up this role.

He has also served as Chairman of an environmental charity and is a currently a member of the Architects Registration Board and the Professional Regulation Committee of the Actuarial Profession. He is a member of the Council of the Institute of Directors. Mr Galloway was appointed CVO in 2006.

We are very pleased to announce that the following members have been admitted as Chartered Environmentalists: Dr Nicholas R Betson, Dr Mike Gray,



Miss Vicky Hollands, Mr Chris Kerfoot, Mr Ben Milner, Mrs Ellen Milner, Mr Mark D Morris, Dr Philip Perrin, Mr Tony Prior, Miss Clare E Pugh, Mr Pulahinge R K Rodrigo, Mr Daniel Ross, Mr Thomas P Ryan, Mr Jeremy Sabel, Miss Laura Sanderson.

www.socenv.org.uk



Penny Anderson and Mike Anderson with the IEEM-CMA Memorandum of Understanding

Countryside Management Association

One of the highlights of the spring conference (reported on pages 51-53) was the signing of a Memorandum of Understanding by Penny Anderson CEnv FIEEM (IEEM President) and Mike Anderson (Countryside Management Association) on behalf of our two organisations as a means to forge stronger links for future joint partnership working.

Applicants

If any existing Member has any good reason to object to someone being admitted to the Institute, especially if this relates to compliance with the Code of Professional Conduct, they must inform the Chief Executive Officer by telephone or letter before 6th July 2012. 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 directly by Council itself. IEEM is pleased to welcome applications for membership from the following:

Applications For Full Membership

Mr Anthony Bird, Miss Lynsey Blows, Mr David Broom, Dr Barry Nicholls, Mr Ian Stone, Dr Robert Woods, Ms Fiona Baker, Mrs Carolyn Billingsley, Mr Henry Campbell-Ricketts, Mr Ciaran Cronin, Mr Paul Hope, Dr Mark Lambert, Mr Daniel Maughan, Dr Heather Oaten

Applications For Associate Membership

Mr Alexander Ash, Mr Nathan Hume, Miss Annina G McDonnell, Miss Justine S Saelens, Mr Matthew Goldberg, Mr Andrew Pankhurst

ADMISSIONS

Full Members

Mr Jonathan Ayres, Mrs Miriam Baines, Dr Carolyn Barnes, Dr Sarah Canning, Mr Andrew Clark, Mr Jonathan Cocking, Dr Ian Griffin, Dr Robert Iredale, Mr Dominic Price, Prof. Robin Pakeman, Mr John Pinel, Mr Mark Preece, Dr David Price, Mr William Waller

Associate Members

Miss Lucy Hill, Mr Richard Seabrook, Miss Heather White, Dr Kimberley Williamson

Upgrades to Full Membership

Mr Andrew Bell, Miss Camilla Burrow, Miss Sally Caveill, Miss Julia Clark, Mr Arthur Davis, Mr Thomas Docker, Mr Adrian George, Mr Matthew Hobbs, Mrs Caroline Maghanga, Mrs Chloe O'Hare, Mr Thomas Oliver, Miss Chloe Phelan, Mr Alan Salkilld, Miss Anna Swift, Mrs Naomi Vincent, Mr Nicholas Weaver, Mr Thomas Woollam

Upgrades to Associate Membership

Mr John Atkinson, Miss Kelly Burns, Miss Emily Fallows, Miss Katherine Fraser, Ms Sara King, Mrs Julia Quinonez, Miss Tajinder Lachar, Miss Eleanor Phillips, Miss Fiona Poulter, Mr James Segar, Miss Helen Archer, Mr Adam Earl, Mr Peter Howe, Miss Octavia Neeves

Recent Graduate Members

Mr Nils Adeler, Mr Liam Atherton, Mr Raymond B Atkinson, Mr Mark D Barber, Miss Katherine Bardsley, Mrs Z Suzsanna Bird, Mr Iain S Brackenridge, Mr Daryl Brown, Mr Mike Bryant, Ms Emily Carr, Mr Jonathan J Catchpole, Mr Peter H Clark, Mrs Lynne Clark, Mr Matthew T Clarke, Mr James Cobb, Ms Carola Dallmeier, Mr Alexander B De Haan, Mr Robert Drummond, Miss Emma Fambley, Mr Jeremy Fox, Miss Angela Gordon, Miss Annabel Hill, Mr Thomas Hughes, Miss Lauree G Kalinowski, Miss Sarah Knowles, Miss Leena Ladwa, Miss Vanessa A Lee, Mr James E Madden, Miss Joanne Martindale, Miss Rosanna Mooney, Mr Michal Ostalowski, Mr Thomas Pringle, Miss Keri Schofield, Mr Harry K P Smith, Ms Rachel A Smith, Miss Ellen Somerwill, Miss Kerry Stead, Miss Rosemary M Sweeney, Ms Rachel Tierney, Peter J Timms, Miss Amy Tyrer, Mr Martyn J Wardrobe-Smith

Recent Student Members

Mr Michael A Balmain, Mr Clive A Bedford, Mr Francesco Benvenuti, Mr Jonathan Blair, Mr Andrew Blincow, Miss Frances Burrows, Mr Andrew Chamberlain, Miss Judith Cox, Mr Andrea Di Tomassi, Mr Samuel D Fletcher, Mr Mathew Gibbons, Mr Alan R Graham, Miss Bettina C P Gronlund, Mr Ryan Harris, Mr Richard A Heath, Mr Richard N Heath, Miss Emily Howard-Williams, Mr Daniel Ingram, Miss Catherine E Kennedy, Miss Ameila J Kent, Miss Claire M Lancaster, Mr Jason Leker, Miss Josephine E Lewis, Miss Elaine Marjoram, Miss Julia Messenger, Mr Martin Newton-Hughes, Miss Chizoba E Ozoemenam, Mr Afriyie Pepra-Ameyaw, Miss Emily R Piff, Mr David T Rice, Miss Jennifer Riley, Mr Edward M Selwyn, Miss Anna E Simpson, Mr Augustus D Smith, Miss Jessica Tainsh, Ms Samantha N Turner, Mr Luke G Verrall, Dr David Wallis, Mr Ben Walsh, Miss Ceri Warne, Mr Matthew Watts, Mr Lewis W York, Miss Nicole R Youngs

Recent Affiliate Members

Ms Lucy Bartlett, Mr Stephen Docker, Mr Stuart Elsom, Mr Ed Ferguson, Miss Colette A L Gibson, Miss Carly Godden, Mr Oliver Metcalf, Mr Shaun Morrison, Miss Katherine E Neck, Mr Glen Parker, Mr Andrew D W Tongue

Recent Student to Graduate Upgraded Members

Miss Felicity Anderson, Miss Heather Barbour, Mr Philip Cannard, Miss Emma R Davis, Mr Steven Duerden, Mrs Elizabeth A Fagg, Miss Kristi J Leyden, Miss Nathalie Marten, Miss Elaine F Rickman, Mr Stephen Sanger

Planning and Biodiversity

Delivering Opportunities through Change – IEEM Spring Conference 2012

Nick Jackson AIEEM

Marketing and Communication Systems Officer, IEEM

IEEM's spring conference was an opportunity for delegates to gain a better understanding of the imminent changes to the National Planning Policy Framework (NPPF) and to update themselves on biodiversity related matters within the planning system. The conference was held on the 21st March 2012 in Birmingham and attracted 280 delegates; coincidentally it was also the day of the budget and the announcement of the NPPF publication date.

IEEM were very pleased to welcome **Simon Marsh**, Head of Planning Policy at the RSPB, as the keynote speaker to reflect on current issues in politics and planning and their meaning for biodiversity. Simon spoke of the 'English Planning Revolution'; the implementation of the Localism Act; the likely impact of the new NPPF; the implementation of the Habitats Regulations and its potential impact on biodiversity as well as the Natural Environment White Paper (NEWP) and Nature Improvement Areas.

Building on Simon's reflections, in a joint presentation David Pape MIEEM outlined how the NEWP had put Nature Improvement Areas and Biodiversity Offsetting firmly on the agenda and also explored developments provided for local authorities to better plan for biodiversity conservation. With reference to green infrastructure planning and partnership working, Phil Lomax MIEEM then discussed how Local Authority challenges and initiatives needed an integrated and co-ordinated approach.

In a thought-provoking presentation, Alister Scott, Professor of Spatial Planning and Governance at Birmingham City University, spoke about the current disintegration within the planning system. He exposed the nature of this planning divide and the differing priorities with particular reference to the challenges facing the delivery of biodiversity. He challenged the audience to bridge the language divide through improved dialogue between and across those working and living in the built and natural environments.



Martin Brasiler (left) With Alan Law

He also called for urgent action through the co-production of better joined-up and inclusive approaches to the way planning policy is developed and managed.

Nine months on from its publication, what progress had been made on biodiversity elements of the NEWP? Martin Brasher, Head of Defra's Global Wildlife Division, summarised the work that had been done to produce the new England Biodiversity Strategy (Biodiversity 2020), published in August 2011, and the subsequent progress on delivering it, including the new governance structure. He focused in particular on the action that has been taken to implement the NEWP initiatives on Nature Improvement Areas, Offsetting and the Green Infrastructure Partnership, and also on some of the smaller-scale commitments such as the Wildlife Gardening Initiative.

Natural England's (NE) Director of Land Use Function, Alan Law, outlined the new approaches to providing effective and efficient services during recent reshaping and streamlining of processes within the organisation. He said there were challenges for NE in helping communities, customers and partners value, create and sustain high quality natural places in an era of pro-growth; but there are also new opportunities within the ambitions of the NEWP, England Biodiversity Strategy and NPPF.

Internal Articles



Lisa Kerslake CEnv MIEEM, Swift Ecology, gave an impassioned consultant's perspective on the practical challenges of, and barriers to, the effective protection of biodiversity. She said that consultants are usually the only ecological professionals that were involved in the entire development system from start to finish (i.e. from the initial ecological appraisal right through to monitoring) and as such they had a good insight into the problems that can arise at the different stages of the process. Lisa gave examples of the problems, some inherent in the system itself, but others related to the inconsistency of advice from statutory agencies and local authorities; poor professional standards, particularly among some consultants, but also within the industry as a whole; and lack of understanding and resistance (or worse) from clients.

The issues that were outlined by Lisa have frequently been aired at IEEM's Professional Affairs Committee, and as such she is the Institute's representative on the British Standards Institute's Technical Committee charged with producing the first British Standard for Biodiversity: A Code of Practice for Planning and Development, due to be published in autumn 2012. Mike Oxford MIEEM, Association of Local Government Ecologists, outlined that the purpose of the British Standard was to provide guidance for a rigorous professional, scientific and consistent approach to gathering, analysing, presenting, reviewing and finally acting on ecological information at all key stages of the planning application process.

In the autumn of 2011, Defra announced six 'pilot' biodiversity offsetting projects commencing in April 2012. The Environment Bank, Essex County Council and a number of Local Planning Authorities have formed a partnership to take forward one of these pilot projects to enable the provision of biodiversity offsetting as a voluntary mechanism. In his presentation, Tom Tew, Chief Executive of The Environment Bank, provided the first update of early progress in the Essex offsetting pilot. He explained that although the principle of offsetting is controversial, and it certainly had not worked in all circumstances, there was increasing evidence from across the world of its huge potential. International standards were now well-developed and European policy was moving strongly towards offsetting.

Internal Articles



Katherine Drayson, currently undertaking a PhD at Oxford Brookes University, had looked at several completed Environmental Impact Assessment (EIA) statements for development sites across England to see how many had implemented the recommended ecological mitigation measures. The Ecological Impact Assessments (EcIA) submitted, along with their planning applications, decision notices, \$106 agreements and any ecological management plans were examined for ecological mitigation measures. From these, a checklist for each site had been developed and compared with the ecological mitigation implemented in the final development. The results of these audits were discussed, including examples of both good and unintended bad practice; preliminary recommendations for improvement were also made.

Julia Baker MIEEM, from Chris Britton Consultancy, presented a case study of delivering biodiversity gain within developments. Julia explained what 'net ecological gain' meant in practice and examined factors key for the successful delivery of biodiversity gain as part of a development project. These included: effective partnerships, relationship building, problem solving, and valuing the biodiversity asset. She used case study examples not only to illustrate the practicalities of biodiversity gain but also its context within the world of corporate business and industry.

The National Trust (NT) is the single biggest owner of bats and their roosts England, Wales and Northern Ireland. With over 50,000 buildings, at any one time hundreds are being repaired, restored or subject to change of use. It has undertaken a critical appraisal of the success or otherwise of mitigation for bats in 50 buildings where works have had to take bats and their roosts into account. Joanne Hodgkins (National Trust) gave an insight into the NT's bat mitigation work and the critical appraisal. She illustrated some of the case studies and suggested recommendations for future monitoring. Joanne pleaded for a better (agreed) understanding of what constitutes mitigation success!

The presentations from this conference are available now on the IEEM website at www.ieem.net.

I would like to thank all of the chairs and speakers for their time and presentations, which made it a useful and interesting day.

'Enhancing Biodiversity through Soil Management' is the subject of IEEM's next conference on 13th June 2012 in London. Renewable energy is the subject of IEEM's Annual conference on 7-8th November 2012 in Cardiff.

Nick Jackson AIEEM

Marketing and Communication Systems Officer, IEEM

About the Author

Nick Jackson is IEEM's Marketing and Communication Systems Officer. Nick was previously IEEM's Education Officer. Nick has a degree in Ecology from Plymouth University and is an Associate member of IEEM.

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Renewable Energy and Biodiversity

7-8th November 2012, Cardiff





For more information please visit: www.ieem.net

Recent Publications & Journals



How to Become an Ecological Consultant

Author: Sue Searle MIEEM ISBN-13: 9781453753347

Price: £11.99

Available from: www.nhbs.com

This is the first book to provide ecology careers guidance and outlines three career paths in conservation, academia

and commercial consultancy, but focuses on consultancy. The book takes a planful, goal-orientated approach, drawing on Sue's experience of coaching and personal development and also includes advice on CVs and interviews. There are excellent ideas on how to target volunteering to fill your skills gaps (rather than randomly taking any voluntary post) and a strong emphasis on how to develop ID skills – "the number one way to get ahead in your professional ecology career". The book is honest about the downsides of the job, the need for physical fitness, the anti-social hours and travel, the demands of professionalism, and points out that if you are not comfortable with handling an adder you may want to re-think your career choice! It covers what a commercial ecologist does day to day, but as the title suggests, it omits conservation project officer roles, and it is written from the perspective of working for a smaller business. Recent graduates often apply for jobs in both commercial and conservation sectors, risking rejection for lack of commitment to either field. So reading this book is one way to find out if consultancy work may be for you.

Clare O'Reilly MIEEM, Ptyxis Ecology Training



A Handbook of Global Freshwater Invasive Species

Editor: Robert A. Francis **ISBN-13:** 9781849712286

Price: £95.00

Available from: www.nhbs.com

Invasive non-native species are a major threat to global biodiversity. Their environmental impacts can range from

damage to resource production (e.g. agriculture and forestry) and infrastructure (e.g. buildings, road and water supply), to human health. They consequently can have major economic impacts. It is a priority to prevent their introduction and spread, as well as to control them. Freshwater ecosystems are particularly at risk from invasions and are landscape corridors that facilitate the spread of invasives. This book reviews the current state of knowledge of the most notable global invasive freshwater species or groups, based on their severity of economic impact, geographic distribution outside of their native range, extent of research, and recognition of the ecological severity of the impact of the species by the IUCN. As well as some of the very well-known species, the book also covers some invasives that are emerging as serious threats. Examples covered include a range of aquatic and riparian plants, insects, molluscs, crustacea, fish, amphibians, reptiles and mammals, as well as some major pathogens of aquatic organisms. The book also includes overview chapters synthesising the ecological impact of invasive species in freshwater and summarising practical implications for the management of rivers and other freshwater habitats.



Bird Habitats in Ireland

Editors: Richard Nairn CEnv FIEEM and John O'Halloran

ISBN-13: 9781848891388

Price: €27.99

Available from: www.collinspress.ie/

bird-habitats-in-ireland.html

Habitat conservation is the key to protecting birds. Without hay meadows, Corncrakes may disappear completely.

Pollution of rivers, leading to fish kills, may cause the decline of the kingfisher. If heather moorland is too heavily grazed it will not provide the necessary cover for red grouse. What do we know about our bird habitats? Are they in good condition? Do we have similar bird species and communities in Irish woodlands compared to other European countries? What are the key habitat factors that make Ireland's coasts so important for migrant shorebirds and seabirds? All of these questions and many more are explored in a new book, *Bird Habitats in Ireland*, to be published by The Collins Press in Cork. Edited by Richard Nairn and Professor John O'Halloran, 25 authors and some of Ireland's leading bird photographers have collaborated in this new work.



Creating Green Roofs for Invertebrates -A Best Practice Guide

Author: Dusty Gedge, Gary Grant CEnv MIEEM, Gyongyver Kadas and Clare Dinham AIEEM

Price: Free download

Available from: http://bit.ly/HD66jS

Buglife – The Invertebrate Conservation Trust, in partnership with Livingroofs.org and the Green Roof Consultancy, has produced best practice guidance on creating green roofs for invertebrates, which was the final output of a 3-year 'Living Roof' project, funded by the SITA Trust. The guidance provides a background to green roofs, guidance on roof design such as substrate depth and type, the use of wildflowers, the addition of habitat features and management. It also contains an overview of key research carried out in Switzerland and the UK which has informed this guidance. Design considerations are supported by scientific studies - green roofs designed to support biodiversity have been well studied in Switzerland and the UK and the wildlife that visits them has been closely monitored and recorded over a number of years. This guidance is aimed at anyone involved with green roofs from planners, ecologists and architects, to policy makers and the general public, and demonstrates how the overall ecological value of a roof can be greatly improved by incorporating simple, yet effective, design features.

Recent Publications & Journals (continued)

Weed risk assessment: a way forward or a waste of time?

Journal of Applied Ecology 2012, 49: 10-19

Three broad approaches have been adopted in alien weed risk assessment: quantitative statistical models, semi-quantitative scoring, and qualitative expert assessment. Yet, the effectiveness of these different approaches is rarely evaluated. By bringing together perspectives drawn from statistics, complexity theory, bio-economics and cognitive psychology, this review presents the first interdisciplinary appraisal of whether weed risk assessment is a valuable tool in the management of plant invasions. Problems in obtaining an objective measure of the hazards posed by weeds, challenges of predicting complex hierarchical and non-linear systems, difficulties in quantifying uncertainty and variability, as well as cognitive biases in expert judgement, all limit the utility of current risk assessment approaches. The accuracy of weed risk assessment protocols is usually insufficient, given inherent low base-rates even when the costs and benefits of decisions are taken into account, and implies that the predictive value of weed risk assessment is questionable. Current practices could be improved to address consistent hazard identification, encompass a hierarchy of spatio-temporal scales, incorporate uncertainty, generate realistic base-rates, and train risk assessors to limit cognitive biases. However, such refinements may still fail to predict weed risks any better than a knowledge of prior invasion history and quality of climate match.

Alternative approaches include scenario planning that seeks qualitative inputs regarding hypothetical events to facilitate long-range planning using multiple alternatives each explicit in their treatment of uncertainty. This represents a change from prevention towards adaptive management where the difficulty in prediction is acknowledged and investment targets early detection, mitigation and management. Scenario planning may be particularly suitable for weeds as they can be rapidly surveyed and have sufficiently long lag phases between naturalisation and invasion that early detection is often feasible. If integrated with assessments of ecosystem vulnerability to invasion and interventions to improve ecosystem resilience, it would deliver a robust post-border approach to invasive plant management. This approach would address threats from new introductions as well as 'sleeper weeds' already present in a region.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/ j.1365-2664.2011.02069.x/full

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Building the evidence base for ecological impact assessment and mitigation

D Hill and R Arnold Journal of Applied Ecology 2012, 49: 6-9

The primary source of work for ecological consultants is from development and construction projects. The ecologist can be involved in all stages of development projects from initial design, through the planning application process to work on the construction site and post-project monitoring. Generally, the purpose of the work is to ensure compliance with legislation and planning policy, and increasingly to contribute to a better development design, which incorporates features which are of potential benefit for biodiversity. However, legislation and planning policy are the main drivers for the work, with every new development needing to comply with a range of directives, Acts or planning statements. The legislation has been strengthened considerably over the last 30 years, and awareness of and compliance with the legislation has never been higher than now. Without this regulatory framework, there is no doubt that consideration of environmental impacts would be far weaker than it currently is. It is worth noting that there is a key difference between the approach of the ecological consultant and that of the ecological researcher. In consultancy, we have to make judgements and provide advice which is based on the best available evidence, combined with our collective experience and professional opinion. The available evidence may not be especially good, potentially leading to over-simplification of ecological systems and responses, and a good deal of uncertainty. In ecological research, the evidence needs to be compelling before conclusions are reached and research is published.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/ j.1365-2664.2011.02095.x/full

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The effect of a major road on bat activity and diversity

A Berthinussen and J Altringham Journal of Applied Ecology 2012, 49: 82-89

Broadband acoustic surveys were conducted on 20 walked transects perpendicular to the M6 in Cumbria, UK with bat activity recorded at eight spot checks per transect at different distances from the road. Climatic and habitat variables were also recorded, and the relationships between bat activity and these variables were investigated using generalised estimated equations (GEE) and ordinal logistic regression. Total bat activity, the number of species and the activity of Pipistrellus pipistrellus were all positively correlated with distance from the road. Total activity increased more than threefold between 0m and 1,600m from the road. These effects were found to be consistent over two years. This study is one of the first to show that roads have a major negative impact on bat foraging activity and diversity and is broadly applicable to insectivorous bat communities worldwide. Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/ j.1365-2664.2011.02068.x/full

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Abundance and diversity of wild bees along gradients of heavy metal pollution

D Moroń et al.

Journal of Applied Ecology 2012, 49: 118-125

This study investigated whether heavy metal pollution is a potential threat to wild bee communities by comparing (i) species number, (ii) diversity and (iii) abundance as well as (iv) natural mortality of emerging bees along two independent gradients of heavy metal pollution, one at Olkusz (OLK), Poland and the other at Avonmouth (AVO), UK. The authors used standardised nesting traps to measure species richness and abundance of wild bees, and they recorded the heavy metal concentration in pollen collected by the red mason bee Osmia rufa as a measure of pollution. The concentration of cadmium, lead and zinc in pollen collected by bees ranged from a background level in unpolluted sites to a high level on sites in the vicinity of the OLK and AVO smelters. The authors found that with increasing heavy metal concentration, there was a steady decrease in the number, diversity and abundance of solitary, wild bees. In the most polluted sites, traps were empty or contained single occupants, whereas in unpolluted sites, the nesting traps collected from 4-5 species represented by up to 10 individuals. Moreover, the proportion of dead individuals of the solitary bee Megachile ligniseca

increased along the heavy metal pollution gradient at OLK from 0.2 in uncontaminated sites to 0.5 in sites with a high concentration of pollution. The findings highlight the negative relationship between heavy metal pollution and populations of wild bees and suggest that increasing wild bee richness in highly contaminated areas will require special conservation strategies. These may include creating suitable nesting sites and sowing a mixture of flowering plants as well as installing artificial nests with wild bee cocoons in polluted areas. Applying protection plans to wild pollinating bee communities in heavy metal-contaminated areas will contribute to integrated land rehabilitation to minimise the impact of pollution on the environment.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02079.x/full

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Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis

JW Pearce-Higgins *et al.*Journal of Applied Ecology 2012, 49: 386–394

Monitoring data from wind farms located on unenclosed upland habitats in the UK were collated to test whether breeding densities of upland birds were reduced as a result of wind farm construction or during wind farm operation. Data were available for 10 species although none were raptors. Red grouse Lagopus lagopus scoticus, snipe Gallinago gallinago and curlew Numenius arquata densities all declined on wind farms during construction. Red grouse densities recovered after construction, but snipe and curlew densities did not. Post-construction curlew densities on wind farms were also significantly lower than reference sites. Conversely, densities of skylark Alauda arvensis and stonechat Saxicola torquata increased on wind farms during construction. There was little evidence for consistent post-construction population declines in any species, suggesting for the first time that wind farm construction can have greater impacts upon birds than wind farm operation. The impacts of wind farms were largely unaffected by technical specifications (turbine height, number or total generating power) and therefore are widely applicable. The study confirms that regulatory authorities and developers should particularly consider the likely impacts of wind farms on large waders. Greater weight should be given to the effects of construction on wildlife in impact assessments than at present. Mitigation measures during construction, including restricting construction activity to non-breeding periods, should be considered and tested as a means to reduce these negative effects.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2012.02110.x/full

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Catchment-scale peatland restoration benefits stream ecosystem biodiversity

SJ Ramchunder, LE Brown and J Holden Journal of Applied Ecology 2012, 49: 182–191

This study examined stream physicochemistry and benthic macroinvertebrates across peatland catchments with artificial drainage networks, or drains that have recently been blocked, and compared these with intact peatland sites having no history of drainage. Streams in artificially drained catchments were characterised by more benthic fine particulate organic matter (FPOM), higher suspended sediment concentrations and finer bed sediments (D50) than in drain-blocked and intact catchments. Drained sites had higher abundance of Diptera (Simuliidae and Chironomidae) larvae, and lower abundance of Ephemeroptera, Plecoptera and Trichoptera larvae, than drainblocked sites. In contrast, streams in drain-blocked catchments had macroinvertebrate communities broadly similar to intact sites in terms of taxon richness, overall species composition and community structure. These changes were associated with lower suspended sediment and benthic FPOM concentrations following drain-blocking. This study has shown changes in the structure of stream benthic macroinvertebrate assemblages linked to increases in benthic particulate organic matter and suspended sediment following peatland drainage. However, these effects seem to be reversible following catchment-scale restoration by drainblocking. Drain-blocking therefore appears to benefit not only peatland soil, vegetation and hydrological ecosystem services but also stream water quality and biodiversity.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02075.x/full

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Biological Flora of the British Isles: Rosa spinosissima L

E Mayland-Quellhorst, J Föller and V Wissemann Journal of Ecology, 100: 561–576

This account presents information on all aspects of the biology of *Rosa spinosissima* L. (*R. pimpinellifolia* L.) that are relevant to understanding its ecological characteristics and behaviour. The main topics are presented within the standard framework of the *Biological Flora of the British Isles*: distribution, habitat, communities, responses to biotic factors, responses to environment, structure and physiology, phenology, floral and seed characters, herbivores and disease, history, and conservation.

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Recent Publications & Journals (continued)

Field-scale evaluation of effects of nitrogen deposition on the functioning of heathland ecosystems

AG Jones and SA Power Journal of Ecology 2012, 100: 331-342

This study investigates the relationship between atmospheric nitrogen (N) deposition, plant and soil nutrient status and microbial enzyme activities at 32 lowland heathland sites across the UK. Sites were chosen to cover a range of N deposition rates (13.3–30.8kg N ha⁻¹ year⁻¹), geographical areas and different geologies. Significant relationships were found between rates of N deposition (total, reduced and oxidised) and concentrations of N and phosphorus (P) in Calluna shoots, litter and soil; relationships were generally stronger with total and reduced forms of N, compared with oxidised N. Litter and humus layers were deeper at sites receiving higher atmospheric N inputs, suggesting increased rates of soil carbon and N accumulation, despite higher levels of phenol-oxidase activity (implying faster rates of organic matter decomposition) at these sites. The combination of elevated plant and soil P concentrations at sites receiving greater N inputs suggests strongly that N is increasing the availability and uptake rates of P, in addition to N. Furthermore, significant interactions between temperature and N deposition on indices relating to productivity and the turnover and uptake of nutrients highlight the influence of climate on ecosystem response to N deposition. Field-scale evidence of changes in rates of nutrient cycling, organic matter accumulation and plant biochemistry suggests that ambient levels of



N deposition are affecting the functioning of many heathland ecosystems and that the magnitude of these effects is also influenced by climate. Since such changes are known to be associated with reduced resistance to environmental stress and loss of plant diversity, current (and predicted future) levels of N deposition are likely to have important implications for the conservation and long-term sustainability of nutrient-poor ecosystems, particularly in the face of climate change.

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Changes in the large-scale distribution of plants: extinction, colonisation and the effects of climate

SW Doxford and RP Freckleton Journal of Ecology 2012, 100: 519-529

Historical distribution records provide a long-term perspective on change. Here the authors used presence/absence data on 1.781 British plant species to examine distribution shifts in the 20th century. Their aim was to determine the importance of long- and short-distance colonisation in the spread of plant populations. They considered three contrasting models of distribution change: random colonisation, where colonisation occurs independently of the established distribution; localised phalanx, where favourable local conditions and/or short-distance dispersal results in colonisation of neighbouring sites only; and phalanx-spread, which is the diffusion-like spread of a population through localised colonisations. The authors fitted a set of four generalised linear models to contrast various forms of the three mechanisms of distribution change. Model selection was used to assess the relative fit of each. Overall rates of extinction and colonisation were low, but highly variable. They were strongly linked with total occupancy, which reduced the probability of extinction and increased that of colonisation. Comparison of the models indicated that the majority of distributions change through a phalanx-spread process.

This indicates that local habitat distribution, as well as localised dispersal, are key driving processes. Long-distance colonisation is, in particular, very rare. An additional set of three models was fitted using rainfall and temperature data. These models were of improved fit compared to the models of distribution change. A clear climate signal could be identified for c. 45% of species, while for the remainder there was a signal that could not be unequivocally attributed to rainfall or temperature. The analysis shows that the spread of most species is spatially restricted at a national scale. This is likely to be a consequence of habitat suitability and dispersal. Habitat changes, such as climate, occur (on a decadal scale) through relatively slow spread of changes. Dispersal is typically restricted, so that new habitat is usually colonised only if it is adjacent to already colonised patches. The findings highlight the importance of prior knowledge of dispersal mechanisms as well as local habitat structure and availability in species distribution modelling research and species conservation initiatives.

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Modelling large-scale relationships between changes in woodland deer and bird populations

SE Newson *et al.*Journal of Applied Ecology 2012, 49: 278–286

There is increasing evidence from local studies carried out in several parts of the world to suggest that increases in the abundance of deer may be depressing population levels of breeding woodland bird populations that are associated with dense understorey habitats. The authors examined whether habitat modification by deer is likely to be a factor contributing to recent large-scale population declines of woodland birds in lowland England. Novel analytical methods were applied to extensive national bird and deer monitoring data, to examine whether populations of 11 woodland bird species that are associated with dense understorey habitats in lowland England may have been depressed following increases in the abundance of three widespread and abundant deer species: Reeves' muntjac Muntiacus reevesi, roe deer Capreolus capreolus and fallow deer Dama dama. An additional four woodland bird species that are not specifically associated with understorey habitats were included as controls. For five of the 11 understorey species considered, there is evidence that increases in deer are associated with large-scale depression



of abundance or population declines in lowland England. Of these species, the authors suggest that the impacts of deer are likely to have been greatest for two species of conservation concern, common nightingale *Luscinia megarhynchos* and willow tit *Poecile montanus*.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/j. 1365-2664.2011.02077.x/full

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Predicting species vulnerability with minimal data to support rapid risk assessment of fishing impacts on biodiversity

WJF Le Quesne and S Jennings Journal of Applied Ecology 2012, 49: 20–28

Large-bodied species are especially vulnerable to fishing in mixed fisheries. Their effective conservation requires predictions of sensitivity and exposure to fishing mortality, but such predictions are hard to make when the population dynamics of most of these species have not been described. The authors present a method for assessing sensitivity and conservation management reference points using widely available life-history data. The method allows the sensitivity of all fish species in a community to be assessed in relation to conservation- and yield-based fishery reference points. Knowledge of sensitivity is used to (i) rank species by sensitivity, (ii) conduct a risk assessment to identify species potentially vulnerable to current fishing pressure and (iii) examine potential trade-offs between fishery catches and the conservation status of sensitive species. The method is applied to the Celtic Sea bottom-dwelling fish community. For the species present, conservation threshold fishing mortalities ranged from 0.05 per year for the most sensitive large elasmobranchs to over 1 per year for small teleosts. The assessment predicts that current levels of fishing mortality may place all the elasmobranchs and over a quarter of the teleosts below conservation reference points. Depending on the relative mortality rates affecting commercially targeted species and species of conservation concern,

up to 65% of the potential yield-per-recruit of commercially important species may have to be forgone to reduce fishing mortality below conservation limit reference points for the most sensitive species. The method presented provides a clear objective procedure to construct ranked species sensitivity lists that can inform management, monitoring and research. The Celtic Sea case study demonstrated that limiting fishing pressure on key commercial stocks to meet fisheries production targets may be insufficient to guarantee the persistence of more sensitive species. Management actions that effectively decouple the mortality rates on commercial species and 'conservation' species are likely to be required to make progress in relation to conservation objectives. The method would support rapid assessment of sensitivity to fishing in many regions around the world as only taxonomic lists and estimates of body size are required.

Freely available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02087.x/full

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Birds as biodiversity surrogates: will supplementing birds with other taxa improve effectiveness?

FW Larsen *et al.*Journal of Applied Ecology 2012, 49: 349–356

Most biodiversity is still unknown, and therefore, priority areas for conservation typically are identified based on the presence of surrogates, or indicator groups. Birds are commonly used as surrogates of biodiversity owing to the wide availability of relevant data and their broad popular appeal. However, some studies have found birds to perform relatively poorly as indicators. The authors therefore ask how the effectiveness of this approach can be improved by supplementing data on birds with information on other taxa. The authors explore two strategies using (i) species data for other taxa and (ii) genus- and family-level data for invertebrates (when available). They used three distinct species data sets for sub-Saharan Africa, Denmark and Uganda, which cover different spatial scales, biogeographic regions and taxa (vertebrates, invertebrates and plants).

The authors found that networks of priority areas identified on the basis of birds alone performed well in representing overall species diversity where birds were relatively speciose compared to the other taxa in the data sets. Adding species data for one taxon increased surrogate effectiveness better than adding genus- and family-level data. It became apparent that, while adding species data for other taxa increased overall effectiveness, predicting the best-performing additional taxon was difficult. Finally, the authors demonstrate that increasing overall effectiveness required supplementary data for several additional taxa.

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Basil O'Saurus

For this issue of In Practice, we encounter Basil O'Saurus, our resident Professor of Tauro-Scatology. in pensive mood. What's on your mind, Prof?

Do you remember, a few months ago, how we all oohed and aahed our way through Frozen Planet? How we laughed out loud at the antics of the penguins?

The moment when one penguin carefully carries stones back to build a nest, only for another penguin to steal them as soon as his back is turned?

That's the one. Then there was the scandal, just before Christmas, when it was revealed that some of the scenes of polar bear cubs were filmed in a zoo rather than on location?

The BBC, if I remember, made a spirited defence and said that this was "standard practice" for natural history films in order to balance veracity with the problems of filming safely inside a polar bear's nest.

I was quite happy with that explanation for a while but there was something about the scenes of penguins that was vaguely familiar. And then I had a flash of inspiration. Where is the BBC's Natural History Unit based?

Bristol.

And where is Aardman Animation, personifiers par excellence of animal antics, based?

Err... Bristol.

Exactly. Look again at those clips of Frozen Planet featuring penguins on YouTube and ask yourself if it is coincidence that a Bristol-based documentary TV unit produces programmes that feature such anthropomorphic behaviour.

You are not seriously suggesting that the BBC resort to plasticine to produce footage for all their natural history programmes?

Of course not. But, even though we all know that correlation does not equate to causation, someone has to take on the burden of pursuing unlikely associations in order to kick-start urban myths.

Such as?

Such as never trusting any animal behaviour or ethological research from the University of Bristol unless the authors submit sworn statements that no plasticine was employed. Lots of work is done there on sexual strategies, foraging and social insects, all within a few miles of the Aardman studios. Their website talks about modelling. They want us to think that this involves mathematics but I'm sure I caught a faint whiff of plasticine as I read their words.

Sounds reasonable. Anything else?

The big one: think how lucrative these blockbuster series have been for the BBC over the past 35 years or so... think of the pressures that broadcasters are under to generate revenue from secondary markets in order to cross-subsidise the licence fee... and remember that David Attenborough is not getting any younger.

Surely you are not suggesting...

Doesn't it all make perfect sense... in a twisted urban myth sort of way... that somewhere in Bristol there is a studio where animators are working on full-size David Attenborough puppets made from plasticine, in order to ensure that the practical inconveniences faced by a man in his 80s don't inhibit the BBC's abilities to generate cash from future natural history blockbusters. Plus, he gets amazingly expressive eyebrows...

I'm getting to like this idea: next time a programme features footage of a mother polar bear nursing her cubs in a nest, the mother will not just display a full range of maternal behaviours towards her cubs, but she will also turn towards the camera and give a toothy grin.

Exactly. And those chase sequences... where a pack of wolves are pursuing herds of elk.... just think how Aardman could help the Natural History Unit with these... a few collisions with trees, a ricochet or two that springs the wolves from 100 metres behind the herd to just in front... small children will be laughing so much that they'll barely notice the inevitably gruesome scene at the end where the young wolves eviscerate a still-struggling elk.

There is a downside of course...

There always is. University lecturers will have to contend with freshers with even less idea of the practicalities of hands-on ecology than is the case at the moment.

Thanks again for your time, Prof.



Forthcoming Events

For information on these events please see www.ieem.net.

Conferences			
Date	Title	Location	
10 th October 2012	IEEM-Royal Entomological Society Joint Conference Techniques and Approaches for Assessing the Importance of Invertebrates in Environmental Impact Assessment	Faversham, Kent	
7-8 th November 2012	IEEM Autumn Conference Renewable Energy and Biodiversity	Cardiff	
20 th November 2012	East of England Geographic Section Conference – Reptiles: Research, Survey and Mitigation	Basildon, Essex	

Training Courses				
Tues 12 th June	Environmental Advisor for Construction Sites	Glasgow		
Thurs 14 th June	Ecological Clerk of Works	Llandrindod Wells		
Thurs 15 th June	Environmental Advisor for Construction Sites	Llandrindod Wells		
Mon 18 th June	Reptile Identification, Surveys and Handling	Exeter		
Tues 19 th – Wed 20 th June	Getting to Grips With Grasses	Axminster, Devon		
Wed 20 th June	Introduction to Grass Identification	Settle, Yorkshire		
Thurs 21st June	Identifying Freshwater Macroinvertebrates to BMWP Families	Dorchester, Dorset		
Thurs 21st – Fri 22nd June	An Introduction to the NVC of Grasslands	Axminster, Devon		
Mon 25 th June	Neutral and Calcareous Grassland; Grass and Sedge Identification	Salisbury, Wiltshire		
Tues 26 th June	Heathland, Acid Grassland and Bogs: Grass, Sedge and Rush Identification	New Forest, Hampshire		
Tues 26 th June	Ecological Clerk of Works	London		
Wed 27 th June	Invasive and Non-Native Fauna	Swansea		
Wed 27 th June	Environmental Advisor for Construction Sites	London		
Thurs 28 th – Fri 29 th June	Introduction to the NVC of Woodlands	Axminster, Devon		
Fri 29 th June	Survey and Evaluation of Hedgerows - Strategies for their Protection	Middleton-by-Wirksworth, Derbyshire		
Wed 4 th July	Invasive and Non-Native Flora	Swansea		
Tues 10 th July	Grass Identification and Ecology	Westbury, Wiltshire		
Thurs 19 th July	A Practical Guide to the Water Framework Directive	Chester		
Fri 20 th July	Calaminarian Grassland, its Ecology and Management	Middleton-by-Wirksworth, Derbyshire		
Fri 20 th July	An Introduction to White-Clawed Crayfish	near Windermere, Cumbria		
Fri 20 th – Sun 22 nd July	Working With Crayfish: Survey, Ecology and Mitigation	Malham Tarn, Yorkshire		
Mon 23 rd July	Identification of Invasive Alien Plants (Sch. 9, WCA, England)	Dorking, Surrey		
Mon 6 th August	Fern and Horsetail Identification	Cleeve, Bristol		
Wed 5 th September	Using the Vegetative Key to the British Flora	Southampton		
Thurs 6 th September	Crayfish in Britain: Natives and Invasive Non-Natives	Rye Meads RSPB, Hertfordshire		
Tues 11 th September	Bat Mitigation	Stamford, Rutland		
Mon 24 th September	An Introduction to Protected Mammal Survey (Excluding Bats)	Aberfoyle, Scotland		
Tues 25 th September	Protected Mammal Survey Impacts and Mitigation (Excluding Bats)	Aberfoyle, Scotland		
Tues 25 th September	Ecological Clerk of Works	Birmingham		
Weds 26 th September	Environmental Advisor for Construction Sites	Birmingham		
Thurs 27 th September	Otters - Ecology and Field Survey	Hexham, Northumberland		
Thurs 27 th September	Ecological Clerk of Works	Exeter		
Fri 28 th September	Environmental Advisor for Construction Sites	Exeter		

Geographic Section Events			
Weds 27 th June 2012	Habitat Creation and Management for Wildflowers and Invertebrates – Enhancing Biodiversity in Urban and Suburban Fringe Settings North West England Section Event	Wirral	
Thurs 28 th June 2012	Landscape scale Habitat Creation, Management and Conservation – Newport Wetlands and the Gwent Levels Welsh Section Event	Newport	



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Steve Hazell Wildlife Equipment Manager



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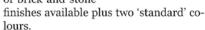
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