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CIEEM

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Reconnecting People and Nature

In this issue

Welcome

Reconnecting people with nature

I am not sure I am that well qualified to tell readers of *In Practice* how to reconnect (or even connect) people with nature. Natural history (particularly birds, but botanising and bug-hunting come close) has been a passion of mine since I was seven years old; I cannot imagine life without it. And yet, my two (now middle-aged) children, their partners and our five grandchildren are simply not interested. I tried, I really tried. Seeing badgers was OK (sort of); kingfishers were "cool grandad, but when you've seen one…."; dragonflies were a bit scary; orchids – "Is that an orchid? Hm." Not a spark. Nothing.

And yet we know that most children are born with an inbuilt fascination for nature; mine were. But somehow along the way it just went. I suspect it's always been like that. The great Victorian naturalists were the exception, not the rule. Not everybody will be interested in nature. Why should they be? When we talk about "reconnecting people with nature" I think we mean that the number of children and adults interested in wildlife is (proportionately?) fewer than in the past, but it certainly isn't zero, or even close to zero. A huge number are.

There are over a million members of RSPB; and close on that number of members of the Wildlife Trusts. Add in more specialist interest groups like Buglife, Butterfly Conservation, BTO, Mammal Society, Marine Conservation Society and so on, plus the vast membership of the National Trust, now an organisation increasingly active in landscape-scale nature conservation, and it is very hard to argue that there is a crisis in the connection between people and nature. I have no idea by how much these memberships overlap, but very roughly probably 3% (it could be as high as 5%, possibly more) of the population of the UK actively seek out contact with nature in their daily lives. (By the way I (we?) ought to have a better handle on that number.) More passively, millions watch programmes like *Springwatch* on TV, and feed the birds in their gardens. What proportion of the population actually watch league football live, or on television? About the same. But we notice because league football is worth billions. Nature is 'just there' (of course it wouldn't be if we properly valued nature's services to society, but that's another story). Membership of political parties (all of them) is pathetic compared with the active participants in UK nature conservation. We just need to keep pointing that out to politicians; it makes them uncomfortable.

Of course, we could and should do more. And one way to do that is 'go local'. I was fortunate enough to chair the group that wrote *Making Space for Nature* in 2010, which fed directly into *The Natural Choice*, the government's 2011 White Paper on the environment. One of the outcomes was the (England only) national competition to establish 12 Nature Improvement Areas. We had over 70 applications for an NIA from all over the country: urban, rural, agricultural, wooded, wet, you name it, we got it. The NIAs unleashed a tidal wave of local enthusiasm for nature conservation. Let nobody say that as a nation we are not interested in nature. We are. And to quote the leader of a north-of-England city region, that bid for an NIA: "A healthy environment and access to high-quality green-space is not an impediment to a successful local economy; it is fundamental for it."

If I have any advice about how to reconnect more people with nature, it is "go local, and empower". It works.

Professor Sir John Lawton CBE FRS
York

Information

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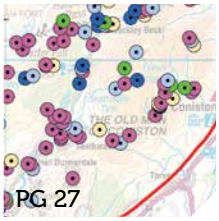

How Participatory GIS Can Help Integrate People's Cultural Values into Landscape Planning
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CIEEM Awards 2016

The CIEEM Awards 2016 were launched at the Autumn Conference in Sheffield. There are 14 awards for 2016, including one brand new award – the Members' Award. Further details on the Awards can be found on page 45 or online at www.cieem.net/awards-2016.

Steph Wray, John Box and Lisa Kerslake

New President and Vice-President (England)

We were very pleased to welcome our new President Steph Wray CEcol CEnv FCIEEM at the CIEEM AGM on 3 November 2015. Steph takes over from John Box CEcol CEnv FCIEEM who steps down after his 3-year term.

CIEEM is thankful for John's vision and leadership over the past three years and we look forward to Steph continuing to take us forward.

Lisa Kerslake CEcol FCIEEM has been elected as Vice President (England), which was Steph's previous role.

CIEEM Autumn Conference 2015

The presentations from the CIEEM Autumn Conference 2015 – which was on the topic of 'Reconnecting People and Nature: Opportunities and Challenges' and held on 3-4 November 2015 in Sheffield – are now available at www.cieem.net/previous-conferences.

Other media, including a video recording of CIEEM Patron Professor Sir John Lawton's talk, are also available.

New Fellow

John Box and Andrew Baker

Andrew Baker

Andrew is the Managing Director of Baker Consultants based in the Peak District. He is one of the foremost UK authorities on the development and interpretation of environmental law, especially in relation to the European Habitats and Wild Birds Directives. He has put considerable effort into explaining and training ecologists in understanding wildlife legislation and is regarded as a 'go to' person within the profession for help and advice on legislation of this kind. He is Convenor of the UK Environmental Law Association's (UKELA) Nature Conservation Law Group. In 2006 he co-authored an update of *The Manual of Nature Conservation Law* and he is currently working on a 3rd edition. In 2009 Andrew introduced an entirely new survey and monitoring method to mainstream ecological practice – full-spectrum bio-acoustics.

Andrew May

Andrew has clearly improved the quantity and quality of educational courses in ecology and significantly increased access to environmental education when he was Assistant Director of Studies at the FSC, Epping. He has also produced various identification guides. Andrew has shown leadership and involvement in a range of innovative conservation projects and has established new partnerships including Living Seas (Essex Estuaries) and Essex Water for Wildlife. Through the application of evidence gained from ecological research to the delivery of projects (e.g. at Fingringhoe Wick), Andrew has made an outstanding contribution to the practical application of the principles of ecology and environmental management. He has clearly made a significant contribution to the conservation of biodiversity in eastern England, particularly Essex and especially in relation to rivers and wetlands. Andrew's work is well respected amongst his peers.

In Practice Editorial Board seeking new members

In Practice's Editorial Board is currently looking for new members. This is an excellent way to contribute to the high quality and future direction of your membership bulletin. We are particularly keen to hear from members in Ireland, Wales and Scotland who work in the local authority, statutory agency, government, academic, industry and NGO sectors.

For more information please contact jasonreeves@cieem.net.

EC Fitness Check of the Nature Directives

CIEEM continues to be involved in the European Commission's REFIT fitness check of the Nature Directives. In early 2015 we responded to the call for evidence through our membership of the European Network of Environmental Professionals (ENEP). This response was turned into a Position Paper that was promoted at the Green Week conference in Brussels in June 2015. The Position Paper highlighted the importance of professionals to achieving the aims of the Directives, including:

- the importance of professional competence and continuing professional development;
- recognition for the role of appropriately qualified and skilled environmental professionals; and
- the need to build up professional standards and share knowledge and skills across Europe.

Later in the year there was a public consultation on the Directives, which CIEEM also responded to and encouraged all members to respond to.

At the time of writing the initial findings from the REFIT consultation are due to be reported on at a conference to be held in Brussels on 20 November 2015. CIEEM will be represented at the conference and we will communicate the outcomes to members as soon as possible.

Response for Nature reports launched

On 13 October 2015, the *Response for Nature* reports were launched simultaneously in England, Northern Ireland, Scotland and Wales. In England, we were joined by naturalist and TV presenter Steve Backshall, who set out why nature matters, and why it is important for politicians and decision-makers to take action.

In 2013, the *State of Nature* report found that 60% of UK species studied had declined in recent decades, and more than 1 in 10 could disappear from our shores altogether. That left the question: What needs to be done to improve the fate of nature in the UK?

Response for Nature is possibly the answer. Across the four UK countries, 34 different conservation organisations – including CIEEM – contributed to the *Response for Nature* projects, which outline the key actions needed by the governments in England, Northern Ireland, Scotland and Wales.

Find out more at www.cieem.net/news/278/response-for-nature-reports-launched.

Staff Changes

We are very pleased to welcome **Katherine Birch** as the new Registration Officer. See page 60 for more about Katherine and her role at CIEEM.

Correspondence with the Planning Inspectorate

Until now it has been accepted that the guidance on survey requirements and mitigation issued by statutory organisations in England (i.e. Natural England and the Environment Agency) were to be followed unless there was compelling evidence to do otherwise. CIEEM's understanding is that such guidance no longer has any 'official' status and has been withdrawn (although still available for reference on the National Archives website). This has inevitably created considerable uncertainty with regard to the standards recognised by the Planning Inspectorate.

Other wildlife organisations produce best practice guidance, but these also have no 'official' status. In some instances, it could be argued that these go beyond good practice requirements and could unintentionally impede appropriate development.

CIEEM has written to the Planning Inspectorate to ask how Planning Inspectors in public inquiries are likely to address conflicting approaches to survey and mitigation and what their expectations will be in relation to the standards used.

The Planning Inspectorate response letters setting out their approach can be found at www.cieem.net/letters-and-press-releases.

New Jobs Advertising Opportunities with CIEEM

In an effort to give members and others in the sector a better mechanism for promoting jobs vacancies we have expanded our package of opportunities for advertising job vacancies.

For more information please see page 66 or contact emmadowney@cieem.net.

Activities of the Professional Standards Committee (PSC)

The PSC has set up a working group to review and update the guidelines on Preliminary Ecological Appraisal (PEA). It is hoped that this will be published in the next few months.

The PSC has also discussed the issues underpinning the production of good practice guidance and resolved to produce some principles to guide future development of such documents. PSC discussed the specific issues around the archiving (http://webarchive.nationalarchives.gov.uk/20140523111208/http://publications.naturalengland.org.uk/category/10002) of various Natural England guidance documents (such as the Great Crested Newt Mitigation Guidelines, Dormouse Conservation Handbook, etc.), and whether there was a need for CIEEM to take the lead with the production of new guidance or the updating of existing guidance. PSC would be keen to hear the views of members on this and will be surveying members on this issue later this year.

A novel approach to waxcap translocation by Barry Wright, Baker Consultants Limited. *In Practice*, 89: 23-27

The eagle-eyed among you may have noticed that a version of the above article also appeared in the August issue of *British Wildlife*. For the record, the article was submitted to *In Practice* before it was sent to *British Wildlife* and was offered elsewhere without our knowledge. It is normal practice not to publish additional articles based on the same piece of work before the first version appears in print; to reference the original article in subsequent articles; and to keep all parties fully informed. In highlighting this incident, we take the opportunity to remind prospective authors of the need to read and follow our Author Guidance and to respect the statements therein.

Future themes for *In Practice*

Edition	Theme	Submission deadline
June 2016	Valuing Ecosystem Services	29 February 2016
September 2016	Upland Ecology	30 May 2016
December 2016	Working in Partnership	29 August 2016

If you would like to contribute an article to one of these editions please contact the Editor at gillkerby@cieem.net. Contributions are welcomed from both members and non-members.

Law Commission recommends single wildlife statute for England and Wales

In their final report the Law Commission recommends that the patchwork of existing legislation be replaced by a single statute. The new statute would bring together the law governing the protection, control and management of wildlife to make it more consistent, easier to understand and simpler to use. Reflecting relevant EU directives and international conventions as well as national wildlife policy, the statute provides a regulatory framework organised around schedules listing protected and controlled species and prohibited conduct.

www.cieem.net/news/283/law-commission-publish-final-report-and-accompanying-draft-bill-on-10-november-2015

Liz Truss speech on Open Environment

Environment Minister Liz Truss made a speech on 14 October 2015 about a new approach by Defra called 'Open Environment'. This was the start of the process for the government to put together their 25-year plan for nature, which CIEEM is engaged with.

https://www.gov.uk/government/speeches/open-environment-speech-by-elizabeth-truss

Butterflies in the wider countryside in England and the UK

These indicators on butterflies in England and the UK contribute to a suite of indicators due to be updated later this year.

https://www.gov.uk/government/statistics/butterflies-in-the-wider-countryside-england

https://www.gov.uk/government/statistics/butterflies-in-the-wider-countryside-uk

Wild bird populations in the UK

Defra has published annual trends in wild bird populations in England and the UK for 1970-2014.

https://www.gov.uk/government/statistics/wild-bird-populations-in-england

https://www.gov.uk/government/statistics/wild-bird-populations-in-the-uk

Lakes and Dales National Parks extended

Environment Secretary Elizabeth Truss has announced the decision to extend the Yorkshire Dales and the Lake District National Parks. The announcement will see the Yorkshire Dales grow by nearly 24% and Lake District by 3% and virtually join the two Parks.

https://www.gov.uk/government/news/lakes-and-dales-decisions-create-largest-area-of-english-national-park-land

Intensive farming link to Bovine TB

New research has concluded that intensive farming practices such as larger herd size, maize growth, fewer hedgerows and the use of silage have been linked to higher risk of bovine TB.

http://rsbl.royalsocietypublishing.org/content/11/11/20150536

Sniffer dog to help protect water vole colony

A sniffer dog is being used to monitor new colonies of water voles, as part of a reintroduction project in Hertfordshire.

https://www.gov.uk/government/news/police-dog-to-help-protect-water-vole-colony

Well-being of Future Generations (Wales) Act 2015: How do you measure a nation's progress? Consultation

Welsh Government want your views on the proposals for the national indicators to measure whether Wales is achieving the seven well-being goals in the Well-being of Future Generations (Wales) Act 2015. The consultation closes on 11 January 2016.

http://gov.wales/consultations/people-and-communities/future-generations-act-how-do-you-measure-a-nations-progress/?lang=en

Environment (Wales) Bill update

The Environment (Wales) Bill was debated in the Senedd on 20 October 2015 and a motion was passed supporting the general principles of the Bill. The general principles creates the legislation needed to plan and manage Wales' natural resources under the principles of sustainable management.

http://www.assembly.wales/en/bus-home/pages/rop.aspx?meetingid=3463&assembly=4&c=Record%20of%20Proceedings

http://www.senedd.assembly.wales/documents/s44758/Stage%201%20Committee%20Report.pdf

NRW appoint new Chair and Board members

Natural Resources Wales has appointed a new Chair, Diane McCrea, who will take up the position from 1 December 2015. She replaces Peter Matthews. Dr Madeleine Havard will become Deputy Chair from 1 December 2015. Chris Blake joins as a new Board member.

https://naturalresources.wales/about-us/our-chair-board-and-management-team/members-of-our-board/?lang=en

Wildlife Crime in Scotland – 2014 Annual Report

This report on wildlife crime in Scotland in 2014, includes information on incidence and prosecutions up to 2013-14, and on research, advice and other work relevant to wildlife crime.

http://www.gov.scot/Publications/2015/09/6676

Key Scottish Environment Statistics 2015

This publication aims to provide an easily accessible reference document which offers information on a wide range of environmental topics. It covers key datasets on the state of the environment in Scotland, with an emphasis on the trends over time wherever possible. The data are supplemented by text providing brief background information on environmental impacts and data source, a summary of the trend and brief information on the potential factors affecting the trend.

http://www.gov.scot/Publications/2015/09/4066

Independent review for planning in Scotland

An independent panel has been set up to carry out a review of Scotland's planning system, Social Justice Secretary Alex Neil has announced. The three person panel, chaired by Crawford Beveridge, will be tasked with bringing together ideas to achieve a quicker, more accessible and efficient planning process.

http://news.scotland.gov.uk/News/Independent-review-for-planning-in-Scotland-1d2b.aspx

Scotland's Biodiversity – a route map to 2020

The Route Map sets out the priority work needed to meet the international Aichi Targets for biodiversity and improve the state of nature in Scotland. It sets out the priority work over the next five years to help Scotland deliver the '2020 Challenge for Scotland's Biodiversity' to meet the international Aichi Targets for biodiversity. Action is co-ordinated into six 'Big Steps for Nature', under which priority projects are identified which focus on delivering benefits for biodiversity.

http://www.gov.scot/Publications/2015/06/8630

Protected Nature Sites Application

The Protected Nature Sites Application provides a visual analysis of the condition of Scotland's most important nature sites. The condition of these sites is used to track progress towards the Scottish Government national indicator Improve the condition of protected nature sites. The data in this application are provided by Scottish Natural Heritage (SNH). You can use the application to search by habitat type (such as woodland, upland, wetlands), by species type (birds, plants, mammals), within a local authority or national park, by the condition of features or by a single or group of sites.

http://www.environment.scotland.gov.uk/get-interactive/data/protected-nature-sites

Common pipistrelle bats on the rise in Scotland

Common pipistrelles have increased by about 79% since 2009, following years of decline. Legal protection for bats, the loss of fewer roosts to development and less harmful timber treatment chemicals may have helped to boost the bats' numbers. Scottish Natural Heritage (SNH) commissioned the report by the Bat Conservation Trust.

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-34474991

Future National Parks in Scotland – Possible Governance Models

This paper discusses some governance options that could be applied to future National Parks in Scotland. It has been published by the Scottish Campaign for National Parks and the Association for the protection of Rural Scotland.

http://btckstorage.blob.core.windows.net/site1061/Projects%20/Scottish%20National%20Parks/SCNP%20Report%202_Possible%20Governance%20Models.pdf

Deputy Chair to Council for Nature Conservation and the Countryside appointed

Northern Ireland Environment Minister Mark H. Durkan has announced the appointment of Professor Howard Platt as Deputy Chairperson to the Council for Nature Conservation and the Countryside. The Council for Nature Conservation and the Countryside is a statutory advisory council that provides advice to the Department of the Environment on matters affecting nature conservation and the countryside.

http://www.northernireland.gov.uk/index/media-centre/news-departments/news-doe/news-doe-october-2015/news-doe-271015-durkan-announces-appointment.htm

£550,000 funding for red squirrel conservation in Northern Ireland

Environment Minister Mark H. Durkan has welcomed the announcement of over £550,000 funding for red squirrel conservation in Northern Ireland. The money will be provided by the Heritage Lottery and EU Life Plus funds, as part of a UK-wide project aimed at reducing populations of grey squirrels and educating the public about red squirrel conservation.

http://www.northernireland.gov.uk/index/media-centre/news-departments/news-doe/news_-_doe-081115-durkan-welcomes-over.htm

Protecting marine life in Europe's seas

A new report by the European Environment Agency assesses the progress made and concludes with perspectives for the future.

http://www.eea.europa.eu/highlights/protecting-marine-life-in-europe2019s-seas-1

We Will Only Protect What We Value

Stuart Brooks
Chief Executive John Muir Trust & Chair of the IUCN UK National Committee

© Jacki Clark

Based on the keynote address at the Chartered Institute of Ecology and Environmental Management Autumn Conference entitled *Reconnecting People and Nature: Opportunities and Challenges.*

In my work at the John Muir Trust and the IUCN, I've picked up a narrative around a 'lack of connection' between people and nature and this is often presented as something that has been lost, is getting worse and is a root cause of the decline in the state of our countryside and biodiversity. If this is reflected in society's values, it underpins decision-making by governments and could be a downward spiral for nature and for us. If we only protect what we value – how do we ensure society values nature?

Of course, there is nothing new in this discussion – we can find parallels throughout history. Over a hundred years ago, John Muir was advocating to politicians the establishment of national parks to protect America's wilderness. He had limited evidence to draw on, but he was persuasive – appealing to the heart as much as the head. He was up against it – with speculators looking to realise the 'natural capital' nature provided.

"Any fool can destroy trees. They cannot run away; and if they could, they would still be destroyed – chased and hunted down as long as fun or a dollar could be got out of their bark hides, branching horns, or magnificent bole backbones.... God has cared for these trees, saved them from drought, disease, avalanches, and a thousand straining, leveling tempests and floods; but he cannot save them from fools – only Uncle Sam can do that."

Assigning a positive value to these places and encouraging people to visit them, to experience them for themselves, was a good move all round. It was a solution to an enduring problem. Again in his words: *"Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going*

home; that wildness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life."

Today, over 292 million people visit the National Parks in America every year, and for every $1 spent, the parks generate an estimated $4 dollars benefit to the wider economy[1]. Protecting nature and giving people access to it is good for the soul as well as the coffers, it seems.

In the run up to the last general election, a coalition of organisations led by the Wildlife Trusts and RSPB, put forward a case for a new Nature and Wellbeing Act[2]. Unfortunately, the government hasn't taken this up but a coherent case has been put forward linking the nation's health to the health of our natural environment.

The RSPB report *Connecting with Nature*, claimed that only 21% of 8-12 year-olds across the UK have a 'connection to nature that could be considered to be realistic and achievable for all children'. A more positive note is struck by a recent UK government report stating that 70% of children spend time in the natural environment at least once a week[3]. Longitudinal studies such as Scotland's annual People and Nature survey show a general positive trend in the number of visits to the outdoors and positive perceptions of the value of spending time in nature – but there is considerable variability dependent on age, background and affluence[4]. A common trend does exist – if you are poor, you are less likely to be accessing benefits from nature. So, whilst the general population might be nudged towards nature, more targeted intervention is needed to encourage and support those who might benefit the most.

© John Muir Award

© Katrina Martin

There is now a good body of scientific evidence to show the linkage between nature and wellbeing and the potential saving to the public purse. According to a study by Natural England, if every household in England were provided with good access to quality green space it could save an estimated £2.1 billion in health care costs[5].

The overall case is compelling: whether by choice or compliance, as a preventative or prescriptive measure, you will benefit from being in nature. This will lead ultimately to people seeing the benefit of protecting nature for us, as much as for its own sake. The challenge is to enable everyone to access these benefits, make the environment relevant to everyone – and in that way society as a whole will value nature and ultimately protect it. Initiatives such as the John Muir Award and others are being used to great effect and especially by organisations reaching out to those in most need.

Judging by the change in attitude towards the environment and understanding of it in my own children's generation, compared to mine growing up in the 1970s, I think there is some cause for optimism. Outdoor learning is becoming a mainstream component of an education curriculum – particularly in Scotland – that places much more emphasis on environmental awareness, understanding and connection. I sense our kids know they are part of nature and our actions have consequences that ultimately impact on us as well as the other species we share the planet with. Their horizons are wide, where ours were relatively narrow.

I will leave the final word to an eleven-year-old John Muir Award participant, the latest generation of nature conservationists by default rather than exception:

"Fresh air comes into your body and pushes all the bad stuff out – the stuff that makes people unwell, like angriness and stress".

© Katrina Martin

Notes

1. http://www.npca.org/assets/pdf/NPCA_Economic_Significance_Report.pdf
2. http://www.wildlifetrusts.org/sites/default/files/nwa_summary_document_final_0.pdf
3. https://www.gov.uk/government/news/childrens-visits-to-natural-environments-new-evidence
4. http://www.snh.gov.uk/docs/A1471713.pdf
5. http://www.ukmaburbanforum.co.uk/documents/presentations/statins_and_greenspaces/bird.pdf

About the Author

Following initial training as a fine artist, Stuart went on to study geography at Newcastle University where he was introduced to upland and peatland ecosystems. Stuart joined the Scottish Wildlife Trust in 1995 supporting a European peatland project and later became their Director of Conservation. He joined the John Muir Trust, a UK charity concerned with protection of wild places, as its Chief Executive in 2009.

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Meet People Where They Are

Bruce Howard MCIEEM
Ecosystems Knowledge Network

Keywords: ecosystem approach, environment, landscape, nature, people, society

Society is not disconnected from 'nature'; it is just that many people don't realise the extent of their dependence on the natural environment. They don't have the opportunity to express what the natural environment means to them or what value it holds for them. This article reviews some initiatives from around the UK that are actively reconnecting people and nature.

Conservation volunteering as part of the Seven Lochs Project. Photo credit: Glasgow and Clyde Valley Green Network.

Many of these initiatives present a more utilitarian view of nature. This provides a starting point for conversations with people and professions who would otherwise not consider the natural environment a mainstream issue. The professionals who already recognise the value of nature need to invest time in establishing connections with those in society who view the natural environment as marginal or irrelevant to the main preoccupations of their lives.

Starting with ourselves

Whatever our circumstances, our view of what we call 'nature' is shaped throughout our lives. Childhood experiences inform and inspire our thinking long before formal education begins. A decision to pursue a career in ecology or environmental management may have been strongly influenced by how we engaged with nature in our most formative years.

Our relationship with nature is multi-dimensional. Much of what we call nature has been shaped by people over millennia. What we see and experience of our surroundings influences our view of what nature is and our connection with it. For some of us, nature is experienced primarily within the built environment, such as in urban parks, allotments and domestic gardens. For others, nature is what is found in areas that are not yet built upon, grazed or cultivated.

As professional ecologists and environmental managers, we must take care not to project our understanding of nature on the rest of society. The diversity of people living in the UK and in the Republic of Ireland is particularly rich. Some have grown up in places where the natural world is celebrated; others take the view that nature should be removed or at least feared. Our first question, therefore, should be what competes with nature in terms of people's aspirations, desires and needs?

Learning from experience

There are a wide range of initiatives around the UK that have good insight into the relationship between people and nature, often gained through engagement and volunteering programmes. In addition to building valuable ecological skills (McFarlane 2014), volunteering can be a starting point for reconnecting people with nature, helping them to see why it matters to them and how valuable it is to society.

A good example is the Seven Lochs Project, set to be Scotland's largest urban nature park. This is based on the Gartloch-Gartcosh community growth corridor where it is expected that 4,300 new homes will be built over the next ten years. This major initiative has incorporated environmental volunteering into its work but not just for a conservation endpoint. The aim is for current and future residents of the area to see nature as an integral part of their lives and the future prosperity of the area. As a precursor to volunteering, the Project is undertaking a range of community engagement activities to raise awareness of the area's natural heritage.

Reconnecting people and nature via initiatives that are *already* engaging people in the natural environment makes sense. A far bigger challenge, however, is to reconnect people and nature through groups of people that are aligned to causes other than protecting nature. These groups are usually missing from the list of interested parties for nature conservation projects. They may be, for example, chambers of commerce, groups that represent the interests of ethnic minorities, organisations in the health sector or the groups promoting the arts. A much-needed skill among ecologists and environmental managers is the ability to talk to these groups and find the 'entry point' for conversations about the natural environment around them (see Wansbury *et al*. 2014). The Bradford Community Environment Project (http://www.bcep.org.uk/) is an example of an initiative that is improving the physical and natural environment through projects inspired by community needs, such as places to grow food.

Perceptions of nature

Reconnecting people and nature is a broad agenda because there are many interpretations of what nature is. Nature is perceived, sensed, enjoyed, feared and conquered in the minds of people. Their view of nature is often remote from the physical, biological and chemical descriptions provided by natural scientists.

Citizen science can be a useful way to reconnect people and nature with some projects focusing on the needs of the professional scientist and some on the benefits to the individual participant (Roy *et al*. 2012). The citizen science programme at London's Natural History Museum is an example of how to bridge both (http://www.nhm.ac.uk/take-part/citizen-science.html). Whatever the purpose, citizen science combines a recognition of the importance of empirical observation while at the same time growing a personal appreciation of nature as well as a sense of community.

We need to recognise that it is often *places* that give people identity and purpose, rather than natural features. A sense of place arises from memories, experiences and traditions that may involve nature, but are rarely all about nature. Scottish Natural Heritage's *Talking About our Place* is a helpful guide (Porter *et al*. 2012) that is geared to helping local communities develop nature-based projects that they would like to be funded. It also helps them to inform and influence decisions that others are making about an area. The Central Scotland Green Network also recognises the importance of a sense of place by working to five place-based themes for transforming the vast land area it seeks to influence (Box 1). The focus on place is deliberate, and meaningful to the wide array of partners involved.

If we wish to reconnect people and nature, we may need to spend much more time talking to local communities and individuals about what makes places special to them, rather than what makes geodiversity and biodiversity special. In many cases, this means cultivating and rebuilding the links between people and landscape, and recognising that personal stories often underlie why a particular place matters. Landscapes provide a strong sense of place because they are understood in terms of a wide range of natural, historical and cultural features. The Wildlife Trusts' 'My Wild Life' initiative illustrates the huge variety of ways that local places and nature matters to ordinary people (see http://www.mywildlife.org.uk).

Places can be valued because of the absence of people, or the presence of people. This relationship is exploited in initiatives that link time spent outdoors with health benefits. Many of the Walking for Health Schemes throughout the UK report that people are drawn to schemes not by nature but by opportunities to meet and befriend others (and the cup of tea at the end).

Reconnecting people and nature can also be achieved through a common challenge that affects many people in one place. This is what is happening with the Llynfi Valley Woodland Creation Project in South Wales, funded by the Welsh Government's Nature Fund. Here, a 30-hectare woodland will

Box 1: Central Scotland Green Network themes

A Place for Growth: Creating an environment for sustainable economic growth.

A Place in Balance: Creating an environment more in balance, to thrive in a changing climate.

A Place to Feel Good: Creating an environment which supports healthy lifestyles and well-being.

A Place to Belong: Creating an environment that people can enjoy and where they choose to live.

A Place for Nature: Creating an environment where nature can flourish.

Source: www.centralscotlandgreennetwork.org

Maesteg (foreground) and the site of the Llynfi Valley Woodland Creation Project. Photo credit: Natural Resources Wales.

be created on former mining land around Maesteg, with the primary objective of addressing this town's significant health challenges. In this example, GP surgeries are expected to play a key role in reconnecting people with nature.

The Natural England 'Outdoors for all' programme illustrates the diversity of groups in society that can benefit from the natural outdoors (see Natural England 2015). In reconnecting people and nature there is a need to ensure that all members of society – including those from different ethnic backgrounds, at different stages of life and with different income levels – are included.

Nature: to what end?

In our role as ecologists and environmental managers, we should think carefully about why we are seeking to reconnect people and nature. Is it to help protect nature as an end in itself? Is it because we are keen to see effective legal and policy commitments related to nature? Or is it that we want people to live healthy, purposeful and fulfilling lives, however that is defined?

In countries like the UK, where the majority of the land area is dominated by human activity, we need to be clear about our goals for nature. With the increasing interest in economic metaphors such as natural capital, we must be careful to accommodate both instrumental ("what does it do") and non-instrumental ("value it for what it is") arguments for nature. The Biodiversity Strategy for Northern Ireland does this well (Department of the Environment Northern Ireland 2015). Its overall vision is that *"By 2050, our life support system, nature, is protected and restored for its own sake, its essential contribution to our well-being and prosperity, and to avert catastrophic changes likely to arise from its loss"* (page 6).

The Response for Nature reports published in October 2015 are a good example of this as they carefully balance all the reasons why people may be interested in the natural environment (Response for Nature Coalition 2015). (CIEEM was a member of the group of organisations that produced these reports.)

An exercise to help people identify what nature does for Lewes, East Sussex. © Lewes and Ouse Valley eco-nomics Group.

An example of an EcoServ-GIS map. Photo credit: Ecosystems Knowledge Network.

In placing a value on nature, it is important to have a dialogue with ordinary citizens. Community-based initiatives such as the Lewes and Ouse Valley eco-nomics Group (www.lewes-eco-nomics.org) provide helpful examples of how to go about this. The group has begun a wide range of activities (including a game and walks) in which local people are given the opportunity to view and value the natural environment around them. It uses the term 'naturegain' to refer to what nature does for people rather than the more technical term ecosystem services. The Group is now helping with the formation of a Neighbourhood Plan for Lewes. This involves gathering local people's views on the value of nature in and around their area that will seek to make 'naturegain' explicit in the Plan and its implementation.

Mapping of what nature does for people at the local level has great potential when talking about nature's connection with people. EcoServ-GIS, developed by the Wildlife Trusts, is one such example (see http://ecosystemsknowledge.net/about/themes/mapping). The tool maps both the capacity of the natural environment to produce specific ecosystem services and the societal need for these services. When put together, the maps show where capacity and need coincide and where they do not.

Following from this, an increasingly important starting point for reconnecting people and nature is the role of the natural environment in the local economy. The Local Environment and Economic Development (LEED) Toolkit developed by Natural England (Wyatt 2014) outlines the assistance available and gives a clear starting point. The LEED Toolkit is designed to help Local Enterprise Partnerships and local authorities meet their economic growth targets through explicitly considering the economy's relationship with the environment (available at http://ecosystemsknowledge.net/apply/local-economy/LEED).

Ecosystem approach

The increasing use of terms such as ecosystem services, green infrastructure and natural capital heralds a far more utilitarian view of nature. At its heart, it provides a positive view of what nature does for people with the natural environment seen as complementary to the local economy and social concerns, rather than in competition with them. This approach is being embraced by some parts of big business and national government. Within local government, Birmingham City Council published its Green Living Spaces Plan two years ago (Birmingham City Council 2013), which sets out the city's vision to become not simply a 'green' city, but one where nature's role in creating prosperity, fairness and good health is the basis for action.

Studies such as the recently completed *Naturally Speaking* project (Fish and Saratsi 2015) suggest that the public is cautiously

optimistic about the concept of ecosystem services and the ideas underlying the ecosystem approach. This study, funded by Sciencewise (www.sciencewise-erc.org.uk), involved group dialogue with 118 people in three UK cities. The participants were selected so as to involve a range of age, gender, occupation, ethnicity, and rural and urban backgrounds, as well as levels of self-reported awareness and interest in environmental issues. Overall, they were supportive of the UK National Ecosystem Assessment's focus on the interconnectivity of nature and its value to society. Nonetheless, a significant minority felt that the term 'services' to describe and manage human use and understanding of nature was consumerist in outlook.

The ecosystem approach, as adopted by the Convention on Biological Diversity, can therefore be a useful starting point for initiatives that reconnect people and nature (Figure 1). Given its focus on people, the ecosystem approach can help to put the current surge of utilitarian thinking about the natural environment into practice in line with aspirations for sustainable development.

Taken together, local and landscape-scale initiatives have the capacity to reach millions of people with positive messages about society's dependence on nature. In the UK, the collective contribution of Futurescapes, Living Landscapes, Local Nature Partnerships (England), Nature Improvement Areas (England), Natural Resource Management trials (Wales), National Parks, Areas of Outstanding Natural Beauty, Landscape Partnerships, Biosphere Reserves and a myriad of community-led initiatives all play a vital part in reconnecting people and nature.

Conclusions

The UK National Ecosystem Assessment showed that people are as dependent on the natural environment as they always have been. Unfortunately, many people don't realise this, don't appreciate that their personal wellbeing could be increased through greater engagement with the natural world and don't have the necessary opportunities. The challenge of reconnecting people and nature begins with ecologists and environmental managers understanding how their own views of nature came

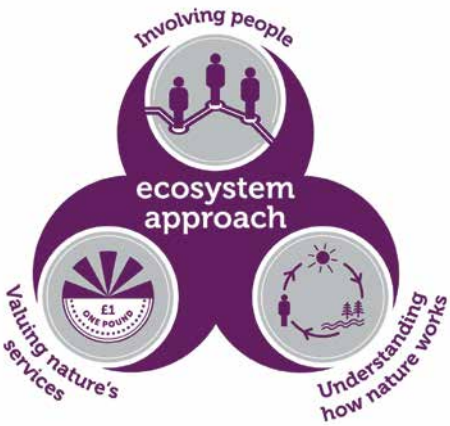

Figure 1 – The Ecosystems Knowledge Network summary of the ecosystem approach, together with the twelve principles. © Ecosystems Knowledge Network.

about. It then requires an understanding of the full diversity of society and what shapes people's motivations and identity. Connections can be forged by making the link between the natural environment and the issues that matter to ordinary people – whether this is health, prosperity, social connections, or cultural and religious beliefs (or even climate change).

The principles of the ecosystem approach provide a starting point for putting ordinary people at the centre of decisions that affect the natural environment in their local area. The professionals who already recognise the value of nature need to invest time in building relationships with those who view nature as remote from their lives, or as someone else's problem or pastime. Reconnecting people and nature is about making the positive connection between the natural environment and what gets people out of bed in the morning.

About the Author

Bruce Howard MCIEEM is Co-ordinator of the Ecosystems Knowledge Network, a UK-wide resource to help people put the ecosystem approach into practice. The Network aims to provide practical examples of the ecosystem approach, as well as draw in professions and sectors so far not engaged in what nature does for society. The Network currently receives funding from Defra, Scottish Government and the Natural Environment Research Council (BESS Programme). To find out more and join for free visit http://ecosystemsknowledge.net.

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Natural Estates: Inclusive Approaches to Biodiverse Landscapes

Mathew Frith CEnv MCIEEM
London Wildlife Trust

Keywords: engagement, housing estate, residents, urban

Improving the ecology of the landscapes around social housing can bring direct benefits to residents, as well as broader environmental outcomes. Understanding the context within which social landlords operate and their resident communities live is imperative to achieving tangible long-term success. The Natural Estates approach taken forward by London Wildlife Trust acts on this knowledge to achieve positive outcomes for biodiversity.

Typical estate green desert. © Mathew Frith.

London Wildlife Trust has been working with social housing communities for over 30 years, especially those living near to our nature reserves. Since 2008, we have deepened our engagement with social housing staff and the residents on their estates to help facilitate longer-term gains for biodiversity and a better sense of wellbeing for residents, and also to inform the way we work.

Green deserts and nowhere places?

The green areas in and around social housing are arguably some of the country's worst in terms of their design, management and use. Whilst in many urban neighbourhoods the quantity of space owned by social landlords exceeds that of public open space, this is rarely reflected in the resources applied to maintain them, let alone enhance them. Although there are some notable exceptions, the majority are a banal mosaic of rye-grass deserts, punished evergreen shrubberies, tired lollipop cherries, incessant railings, and sweeping concrete vistas, often further blighted by the signs of neglect or anti-social behaviour.

These landscapes were largely ignored in the policies and initiatives to improve parks and the public realm in the early 2000s, despite lying in areas of significant social and economic need. Whilst they share many of the issues that affect other public open spaces, green areas within social housing are significantly more fragmented, less well managed, and more clearly associated with urban poverty (see Box 1).

Landlord priorities

The primary objective of landlords who own and manage social housing estates is to provide decent homes, primarily for residents on low incomes. They play a crucial role in urban regeneration, the building of new affordable housing, and in the support and wellbeing of their residents. However, as the total area of land owned by the social housing sector grows, it brings with it many challenges and opportunities for landlords. Financial pressures to keep rents and service charges affordable, and problems like

Box 1: Characteristics of housing estate landscapes

- high fragmentation (compared to parks and other public open spaces)
- very poor vegetation and structural diversity
- ambiguous ownership for users, and tensions between private and communal needs
- existence of acute social territories
- increasing complexity of tenure (e.g. pepper-potted leaseholds on estates)
- fear of crime a dominant influence on management
- competition for use (e.g. car-parking, development)
- absence of relevant regulatory frameworks
- management resourced through service charges

poorly maintained housing stock and anti-social behaviour, are not conducive to finding additional resources to manage and maintain outdoor spaces even when landlords recognise that it would be beneficial for their residents. Landscape

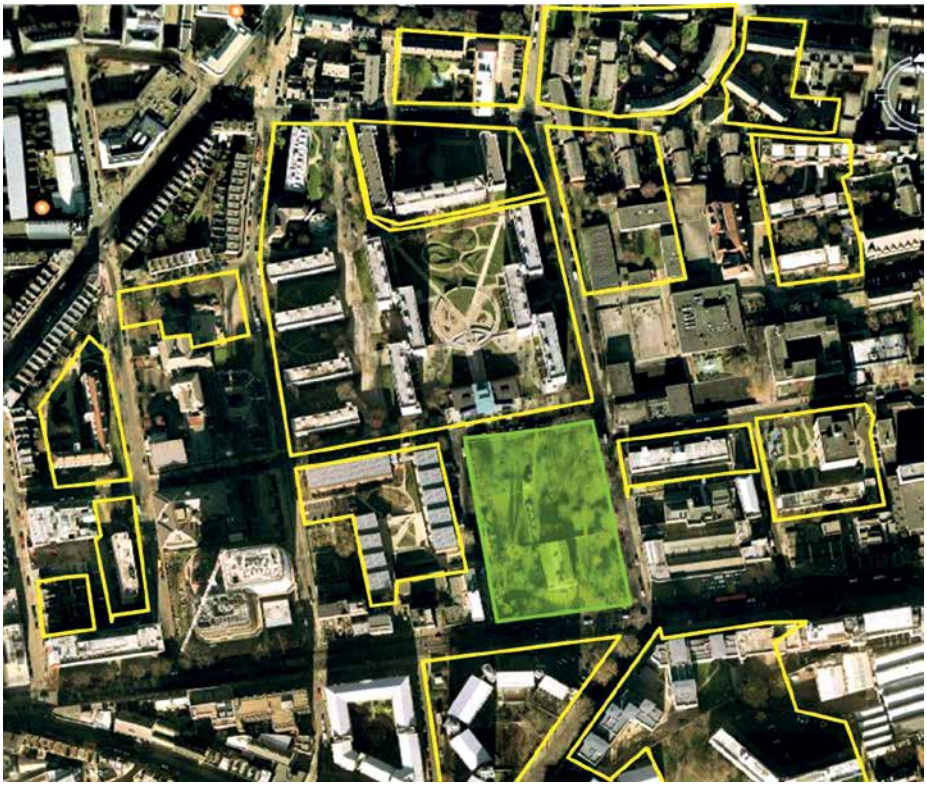
Countisbury House lawn with corky-fruited water-dropwort. © Mathew Frith.

management is not the core business of social landlords, and they rarely consider the consequences of policies and programmes that do not focus on housing provision (Frith and Harrison 2005).

Ecological deadspots; why bother?

Why should this matter to those of us with an interest in the natural environment? Housing estates are rarely a threat to the nature we value, nor are they priorities for ecological restoration. Ecologically speaking, they are invisible. And yet, how many have been surveyed for their biodiversity? Many estates, especially those developed in the mid-20th century, were built on greenfield sites and many housing estates stand close to wildlife-rich sites (e.g. Alton Estate overlooking Richmond Park NNR). Old trees, hedgerows and other features often survive within developed landscapes, and changes to management often reveal hidden gems. For example, relict chalk grassland survives within the labyrinthine networks of grassland around the estates of New Addington (Croydon) and Whitehawk (Brighton), and a population of corky-fruited water-dropwort *Oenanthe pimpinelloides* flourishes at Countisbury House (Sydenham Hill).

They are places of huge opportunity that could be used to engage with new, often hard-to-reach, audiences, and demonstrate the value of biodiverse landscapes as a broad and inclusive social benefit.



Inner urban neighbourhood showing local park (green) and estates (yellow border). Underlying image © Google Earth.

Neighbourhoods Green guidance

London Wildlife Trust's focus on social housing landscapes is part of *Neighbourhoods Green*, a national programme aimed at improving the quality of the design, management and use of the green spaces owned by social landlords (Wheeler 2011; http://www.neighbourhoodsgreen.org.uk/home) Specific guidance to promote biodiversity around social housing was published in 2007 (Riley *et al*. 2007) on the basis that it could bring multiple benefits, including greater resilience to climate change; enhanced appearance; improvements

Clapton Park Estate, Hackney; an inspirational enhancement. © Mathew Frith.

to residents' wellbeing, social cohesion, and active citizenship; and savings in landscape management budgets. Perhaps the most important driver – albeit hard to define – was the improvement to people's quality of life from being able to engage with the natural world on their doorstep, for instance through observing seasonal changes, hearing the dawn chorus, or enjoying nature with children.

Natural Estates

Two pilot projects helped to shape Natural Estates. In 2008 Natural England funded consultation with many resident communities on how their estate landscapes could be enhanced for biodiversity. A year later London Wildlife Trust began *Cockney Sparrow*, a 3-year project in partnership with Peabody (as part of a wider programme of resident engagement across their properties). This aimed to capture residents' interest in commonly encountered birds, and engage them with wildlife-themed activities.

Natural Estates was delivered through a partnership of estate residents and social landlords in London between 2010 and 2014. Led by the Trust, with eight social landlords and Groundwork London, it was largely funded by the Big Lottery's *Access to Nature* programme, with support from Natural England. The total project cost

The Cockney Sparrow project gave residents insight into the wildlife they might find on their estate. © Peabody.

was £360,400, including in-kind support from partners. It sought to enhance the biodiversity of estates by enabling residents to engage with, and become guardians of, their local natural environment.

The project aimed to benefit 13,400 households on nine estates. A team of three project officers delivered a

Conducting a herbal tour at Ferry Lane Estate. © Kirsten Downer.

programme of activities reflecting what residents, tenant & resident associations, and social landlords had asked for in the pilot. This included encouraging and nurturing wildlife on the estate; holding wildlife talks and walks; and arranging visits to nature reserves and other nearby sites of high biodiversity interest. Over the course of the project the Trust held 810 activity sessions, equating to about three opportunities per month for residents to participate at each of the estates.

Running parallel to this was a capacity building and skills training programme, led by Groundwork London, to enable social landlord staff and contractors to better manage their green spaces for wildlife and residents. A Project Board served to share best practice and strategies between partners and social landlords, and to help reconcile any conflicts.

Estate enhancements

The activities and changes to green spaces were largely simple and low key, to maximise resident participation and secure sustainable gains for nature. Participative wildlife surveys (bio-blitzes) were run by Trust staff on all estates, and attracted over 200 residents. All residents were consulted about estate management plans and a range of interventions involving habitat creation or enhancements were delivered. The most successful initiatives included changes to mowing regimes, bird and bat box making, and construction of stag beetle loggeries; the least successful were hedgehog hibernaculae and bug hotels; and there was variable success with wildflower meadows and bulb planting. Wildlife gardening groups were set up on six estates, with five groups designing 'wildlife gardens' and, four becoming well embedded and running independently by the end of the project in 2014 (Morgan 2014).

Resident engagement

Resident engagement did not launch into a vacuum. Preparatory work was undertaken in the development of Natural Estates, but each estate had its unique matrix of relationships amongst residents, its own culture of participation and its own set of opportunities and barriers. Project officers discovered and navigated these conditions, adapting their approach and programmes of activity in response to residents' interests.

There was no standard programme to apply; the activities delivered on each estate were shaped by several iterations and were responsive to feedback.

Estate landscapes can only be improved where the engagement with residents and their landlords is effective. Understanding the relationship between them, as well as the underlying social and political factors, is critical. This is time-consuming and demanding, often resulting in a 'one step forward, two steps back' kind of progress.

Sensitivity to the tenant-landlord relationship is crucial, as this can be complex. Residents often feel that their landlord does not do enough, or that they are only interested in other residents' concerns. Many long-standing residents have fixed views on how an estate should look and can be resistant to change. Long-term estate staff are better placed to help navigate these matters whereas a high degree of staff turnover on either side hinders the long-term aim of building trust as well as embedding the care and supervision of interventions and enhancements within the resident body and social landlord staff.

For Natural Estates, project staff attended tenant and resident meetings and estate walkabouts, listened to the issues of interest, and found out about estate politics. Early ideas were tested to find out what would work and to identify potential resident 'ambassadors' within the community to help promote the project. Project staff had to be sensitive to cultural and language issues, recognising that for many residents improving green spaces would be a low priority (Burningham and Thrush 2001). Project staff also needed to be aware that repairs, rents and anti-social behaviour could dominate narratives, and tend to push positive proposals off the agenda.

Engagement demography

Engagement during the Natural Estates project was high: 7,000 people took advantage of new learning opportunities related to the natural environment, almost 500 volunteers regularly participated in green space stewardship, and opportunities to experience the natural environment were improved for over 18,000 local people. Just under half of participants were from BAME (black, Asian or minority ethnic) backgrounds, and over 5,500 were from socio-economic- and/or greenspace-deficient backgrounds. A clear majority were children under 16 years old, and, although harder to engage, the targets for young people (16-24) were exceeded. One third of the volunteers were unemployed. All language and activities were designed to be sensitive to the cultures of each estate, and were organised to ensure active engagement and build consensus.

A training programme for landlord staff included a series of workshops that addressed different issues around green space management (e.g. tree management, contract procurement), as well as opportunities to share experience and practices. A wide range of staff in different roles took part in the workshops, growing to appreciate green spaces as an asset rather than a liability. As internal 'champions' they often have to fight hard to make their case heard within their organisations. However, through Natural Estates and other projects, the culture of management on estate green spaces is starting to change.

Natural Estates significantly exceeded the partners' expectations in the quantity and quality of resident engagement, and has helped to shape the Trust's more recent work with communities, including those on large social housing estates.

Connecting with nature at Churchill Gardens. © London Wildlife Trust.

Testimonials

The response from residents varied, as did their degree of participation, with some seizing the opportunity to get more involved in their estates and others less so. The level of involvement in the activities and interventions is crucial (Box 2) and might determine the future sustainability of such approaches, informing how the Trust continues its work with social landlords and their resident communities.

Box 2: Testimonials

"This is first time in my life when I planted something. I can't wait to see how the flowers will grow."
Linda, 50, Cleverly resident.

"Since we built the mini-beast hotel we've seen hedgehogs in the garden – I'm really happy we're building the garden here. I've also seen bats flying around in the evenings. I'm looking forward to planting hedges this winter!"
Duncan, The Meadows resident.

"Half an hour ago my daughter was scared of a hoverfly. Now she is running through the meadow with her friends and they all look so happy. It looks like the countryside."
Emma Taylor, Churchill Gardens resident.

"Before the bird ID and song workshop it was just birdsong noise in the background. Now it's made me tune in and understand much more. I've realised how many birds there are!" Ferry Lane resident.

"People here, we need a place to grow things. Living here in the city sometimes it can feel like I can't breathe. I like plants and animals, they're very important for our equilibrium. It releases our stress. When I see a bird, I say: 'thank you for coming!'"
Cristina, Churchill Gardens resident.

"Natural Estates has increased awareness of wildlife on the estate."
Sarah Georgiades, Affinity Sutton.

"Although it may not appear to be our mainstream activity, there is nevertheless a strong business case as it really supports our communities. Doing this kind of work helps residents become proud of and have a stake in where they live, which will save money in the long run."
Astrid Kjellberg-Obst, Homes for Haringey

Sustaining estate biodiversity

Given the relatively short duration of Natural Estates, it was difficult to attribute the presence of wildlife on the estates directly to the interventions made. Nevertheless, these interventions have been tried and tested in many other types of urban green space. It is well known that the critical success factor is the need to engage residents so that they feel a sense of ownership and so that interventions are nurtured by estate communities with support from landlords (Wheeler 2011). Changes to landscapes are often resisted until it is clear that they make residents feel better about their estate therefore quick wins with low-key interventions are important at the outset of any project.

Certainly increased levels of observation and recording immediately translate into a greater appreciation for what may have already been there unnoticed.

Residents visiting Hounslow Heath.
© London Wildlife Trust.

Steps to success

Estate landscapes are challenging places to improve. From the Trust's perspective, recruitment of staff with a strong people-engagement background was critical, especially if they had direct experience of living on and/or working in housing estates. An empathy with the lives of estate residents was paramount.

There are many constraints on carrying out improvements to estate landscapes including organisational inertia, competing demands for open space use, fear of crime and anti-social behaviour, residential territories and politics, conflicting policies and a dearth of horticultural skills among staff (Richardson 2014). However, Natural Estates has demonstrated that by taking a considered and focused approach, and

Wildflower meadow at Sycamore Gardens.
© Karolina Leszczynska-Gogol.

by listening to and working with residents from the outset, the wildlife value of these areas can be enhanced in many small ways.

A focus for future engagement

Is this real nature conservation? Is it a distraction from conservation projects that offer greater potential? Surely, the future of the corncrake and lowland heaths are far more deserving of our limited resources? And surely those wilderness projects are simply more exciting, as we have bigger spaces to play with? Why take our eye off the ball now?

Arguably, if we can make a difference on people's doorsteps there will be knock-on benefits in wider society as people become more connected with nature. Cynically, one could argue that those living in social housing are a captive audience of 'hard-to-reach communities' about whom we know much more than the visitors to public parks, nature reserves and the wider countryside. Working with residents on estate-based projects should be matched by strategic engagement with social landlords to help embed the necessary skills and secure the necessary resources. An audit of work undertaken by the nature conservation sector on housing estates over the past 15 years would provide a useful and enlightening baseline but it is clear that we will miss a trick if we continue to overlook these spaces and the communities they are meant to serve.

Social landlords work hard to address the problems affecting their resident communities, often with significant success, but most are not equipped to manage their green spaces for wildlife. Social housing has its own regulatory and organisational framework, obligations and objectives, with strong social and environmental commitments, with which the nature conservation sector can work and which offer potential benefit. There is growing recognition that improving the green spaces on housing estates is important both for nature and for people and, when done correctly, can deliver multiple rewards. The lessons learnt from Natural Estates show that success for nature follows when we also strive to make a positive difference to people's lives.

Note

London Wildlife Trust has produced a DVD of the project, available from the author upon request.

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Responsible Reconnection: Facilitating Sympathetic Access to Sensitive Sites

Keywords: mitigation, recreational disturbance, Special Protection Area, SPA, Thames Basin Heaths, TBH.

Simon Thompson
Natural England

A novel partnership project provides avoidance and mitigation of visitor impacts on European heathlands in the heart of the busy South East. The Strategic Access Management and Monitoring project delivers strategic mitigation for the impact of new housing development within 5 km of the Thames Basin Heaths Special Protection Area on behalf of eleven Local Authorities.

Figure 3. Location of a people counter sensor at Whitmoor Common

Introduction

Over the past 10 years, Thames Basin Heaths Special Protection Area (SPA) has become well known for its ground-breaking, strategic solution which enables sustainable residential development in the vicinity of some of our most precious and stringently protected sites. The recently initiated Strategic Access Management and Monitoring Project uses developer contributions to educate visitors about the sensitivities of the protected sites and encourage them to visit alternative greenspaces during the period of highest sensitivity for the ground-nesting birds. The challenge is to reconnect people with nature in a way that inspires them to help protect the special interest of the site.

Background

The Thames Basin Heaths SPA covers 8400 hectares of Sites of Special Scientific Interest (SSSI) across the boundaries of nine Local Planning Authorities (LPAs) in Berkshire, Hampshire and Surrey. It is a fragmented site surrounded by a range of urban settlements including Guildford, Bracknell, Fleet, Farnborough, Camberley and Woking, as well as major roads including the M25, M3 and A3 (Map 1).

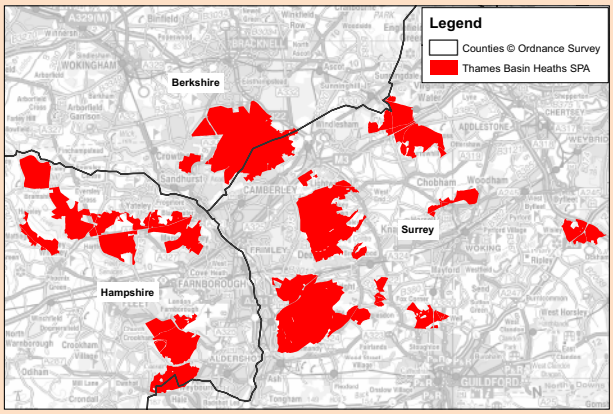
The SPA is designated for breeding populations of Dartford warbler *Sylvia undata*, nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea*, which are protected species under the EC Wild Birds Directive (Council Directive 2009/147/EC on the conservation of wild birds). Lowland heath is an extremely rare habitat, with the UK holding around twenty per cent of the world's extent, a significant amount of which is situated in the South East (English Nature 2002). The largest remaining blocks are in the New Forest, with other significant areas in the Wealden Greensand and in the Thames Basin.

The fragmented nature of the SPA, along with the existing and planned development surrounding it, increasing urban pressures and potential impacts of recreation, generated concern for the sustainable future of the SPA and its bird populations. The significant housing targets contained in the draft South East Plan (2005) were a catalyst for Natural England (and its predecessor English Nature) to commission research to investigate the effects of human disturbance both directly from recreational activities and indirectly through urban development (Liley 2005, Liley *et al*. 2006a,b).

Based on both this local evidence and that from other similar areas, in October 2005 Natural England advised the eleven LPAs within 5 km of the SPA that new residential development would have an adverse impact on the SPA's breeding bird populations. With the cross-authority nature of the SPA, and the regional planning system in place at the time, a collaborative approach to protecting the sites from the impact of new residential development was established.

This co-operation led to formation of the Thames Basin Heaths Special Protection Area Delivery Framework by the Thames Basin Heaths Joint Strategic Partnership Board (JSPB) in 2009. The JSPB set out avoidance and mitigation measures including the delivery of Suitable Alternative Natural Greenspaces (SANGs), and a Strategic Access Management and Monitoring (SAMM) service. These measures, funded in perpetuity through developer contributions (linked with planning applications resulting in a net increase in residential development) and implemented in full, enable LPAs to conclude that developments contributing to the measures and taking place between 400 m and 5 km from the SPA are not likely to have a significant effect on the SPA (see Map 2).

1



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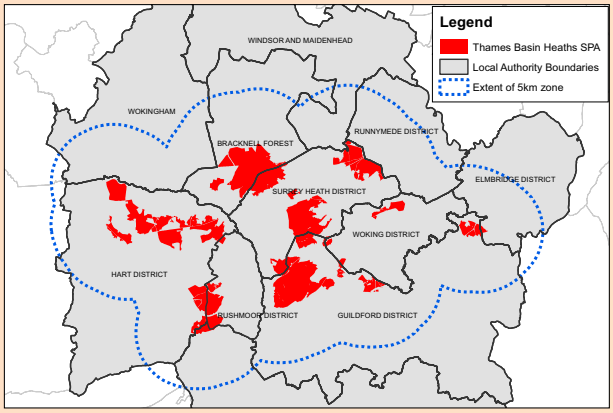

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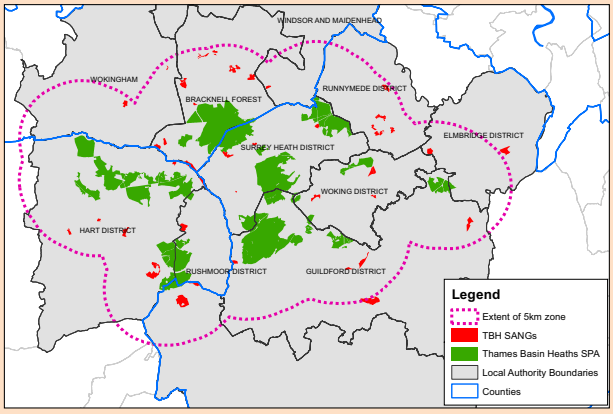

Map 1. Special Protection Area with County boundaries; Crown Copyright and database rights 2014. Ordnance Survey 100022021.
Map 2. Special Protection Area with 5 km zone of influence and Local Planning Authority boundaries; Crown Copyright and database rights 2014. Ordnance Survey 100022021.
Map 3. Special Protection Area and SANGs with Local Planning Authority boundaries; Crown Copyright and database rights 2014. Ordnance Survey 100022021.

Project Delivery

The Thames Basin Heaths SAMM Project is one of a suite of strategic measures designed to avoid and mitigate impacts to SPA heathlands in the Thames Valley, arising as a result of new house building within 5 km.

In July 2011, a legal agreement providing for the delivery of the SAMM project – comprising strategic wardening, education and communication, and monitoring – was signed between the local authorities within 5 km of the Thames Basin Heaths, with Hampshire County Council as the Administrative Body, and Natural England as the Delivery Body. The partnership of local authorities and Natural England coming together to deliver a solution in an area of high economic and environmental importance was innovative, and demonstrates the commitment of all parties to delivering sustainable development. The project is fully developer-funded, secured through planning obligations (s.106 legal agreements setting out payment of monies towards mitigation).

The project's overarching objective is *"to demonstrate, through the gathering and analysis of evidence, and the provision of access management, that there has been no impact on the Thames Basin Heaths SPA as a result of new housing in the vicinity of the SPA"*. To achieve this, the project's aim is for all visitors to the SPA heaths to behave responsibly, not straying from official paths during the breeding bird season, but ideally choosing to visit other less sensitive sites during this critical time. Dogs are to be kept under close control at all times and must stay on the paths during the breeding bird season. Monitoring is designed to track breeding bird numbers and visitor numbers annually, as well as a periodic check on visitor behaviour through surveys on SANGS and the SPA.

The Natural England-hosted SAMM project began the strategic wardening of the Thames Basin Heaths SPA in March 2015, and currently has five wardens who provide seven days a week presence on the heath. The SAMM project wardens operate under the brand Thames Basin Heaths Partnership to reflect the fact that the project is delivering mitigation on behalf of eleven LPAs, and on land managed by nine principle landowners.

Having a Thames Basin Heaths Partnership logo and branded clothing enables the project to have a separate identity to both Natural England as the host organisation, and the land managers (including Wildlife Trusts, RSPB, Crown Estate, Forestry Commission and Local Authorities) some of whom have their own ranger staff. The project works closely with land managers to ensure public communication relates accurately to their sites. Due to the number of organisations involved and their different roles and responsibilities, direct delivery of a strategic project by existing landowners and land managers would have been extremely challenging, and therefore Natural England became the host organisation in order to ensure the project could be delivered in a consistent way across the SPA area. The wardening activity is one of three overlapping work areas, the others being education and monitoring.

Wardens

The primary focus of the Thames Basin Heaths Partnership wardens is to interact with the public on the SPA, especially to encourage responsible dog walking. The wardens actively engage with site users about the importance of heathland habitat, its value to wildlife and how they can help to minimise their impact upon it. The warden's role is one of education and raising awareness; they always promote a positive message and they avoid admonishing people in all but the most extreme circumstances.

The presence of wardens on the heath enables the project to put across positive conservation messages. The team work closely with both land managers (Figure 1) and Natural England SSSI officers to understand the ecological objectives for the sites, as well as the practical management in place to achieve them.

A key aspect of the warden's role is the promotion of alternative recreation sites away from the SPA, particularly SANGs. The wardens undertake regular visits to the SANGs close to the sites they are wardening, to ensure they know what those sites have to offer and can undertake practical promotion, such as being able to provide detailed directions to dog walkers who are not familiar with new sites.

The wardens are also responsible for the installation, maintenance and data download from the project's visitor sensors, which are deployed at randomised locations on the SPA footpath network.

Education and Communication

In addition to the warden team, the project has a full time Education and Communication Officer whose role includes the promotion of the project, running and attending events (e.g. dog owner events, wildfire awareness), branding and signage, and an education programme. Since work began on the ground in March 2015, the Education and Communication Officer's time has focused on the promotion of the Thames Basin Heaths Partnership brand, and the production of informative promotional literature for the wardens to hand out to the public. This includes materials for a series of 'pit stops', i.e. pop-up stands in SPA car parks. These will provide another mechanism through which to engage with users of the heath during informal discussion about the ecological value of the SPA, responsible behaviour and alternative sites that are available to them.

To coincide with these pit stops, a responsible dog walker code of conduct will be launched, promoted by postcards and leaflets and reinforced by signage in SPA car parks. Over time, it is intended that the code of conduct becomes the cornerstone of a wider initiative called 'Heathland Hounds': a club for dog owners offering information as well as discounts at vets and pet shops (and due for launch in spring 2016). In addition, the club will organise and attend events such as doggy fun days and guided walks. These events will also be used to promote alternative sites such as SANGs, as well as responsible behaviour both on and off the heath.

Suitable Alternative Natural Greenspaces (SANGs)

SANGs are semi-natural open spaces that are provided either strategically by local planning authorities or on a bespoke basis by large housing developments. They are provided close to new housing developments and funded in-perpetuity (by developer contributions) to create an alternative recreational resource to the SPA for local residents. They are also intended to divert pressure away from designated habitats (Map 3). SANGs are often new sites without previous public access, but can also be sites with existing access to which enhancements are made to increase their capacity. Agreement that individual SANGs could fulfil this role is subject to Natural England guidelines drawn from research into what visitors value about the SPA. Whilst SANGs are usually smaller than SPA sites, they encompass a variety of features, such as a circular walk and range of natural habitats that make them an attractive alternative recreation destination.

Monitoring

The third element of the SAMM project is monitoring. The project will continue to commission an annual SPA bird report to provide data on breeding numbers of the notified species for each component

Figure 1. Thames Basin Heaths Partnership Wardens working with Blackwater Valley Partnership Rangers

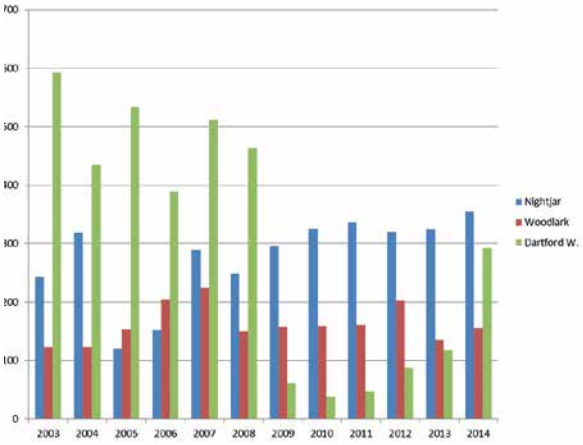

Figure 2. Counts of Annex 1 bird territories on Thames Basin Heaths Special Protection Area 2003 – 2014.

SSSI of the SPA, as well as the location of nesting sites across the designated sites. The monitoring work is undertaken by volunteers coordinated by an ecological consultancy – 2Js Ecology, and has been undertaken to the same methodology since 2003, previously commissioned by Natural England. Following the severe winter in 2008/9 the populations of woodlark and Dartford warbler are now recovering strongly, although they are still below their levels at the time of designation (Figure 2). Nightjars, being migratory, are less affected by severe winter weather and their territories have been steadily growing since 2005.

An SPA visitor survey was carried out in 2012 to follow-up the original 2005 survey. The survey is based on interviews with SPA users at specific locations and will be repeated every five years to monitor changes in visitor behaviour over time.

The monitoring of SANGs has also been taken on by the project recently (previously undertaken by individual local authorities), and we are currently working on a methodology to efficiently monitor the effectiveness of the network of sites, rather than each individual site in isolation. There are currently 40 operational SANGs around the SPA with many more in development.

The project has installed and maintains 35 automatic people-counting sensors across the SPA (Figure 3). The locations were selected from a random sample of access points in order to measure changes in visitor numbers to the SPA over time. Data from the sensors will be used to provide information on total visitor numbers, and information on temporal variation through the day, between months and over the course of each year.

An SPA-wide count of all parking areas was first undertaken in 2013, repeated in 2014, and will be continued annually. The count is undertaken by six surveyors simultaneously following specific transects covering 160 car parking areas with space for an estimated 2,118 parked vehicles. This includes dedicated car parks, lay-bys, verges, and spaces at track entrances across the whole SPA.

Data from several years will be needed to gauge changes in visitor numbers arriving by car. With the introduction of the wardening team, the SAMM project will be able to undertake car park counts more frequently, providing a larger dataset. Whilst the aim of the project is to reduce the overall impact of recreation on the heath, this doesn't necessarily equate to reducing the overall number of people visiting. Responsible on-site behaviour can reduce the impact that each visitor generates. However, understanding the overall trends and distribution is essential to ensure that resources are allocated to the most appropriate locations.

Going forward

The project is working to raise awareness about the special features of the SPA, avoid alienation, and to encourage visitors to avoid the site at sensitive times. As the wardens have a fully customer-facing role, they are able to spend time with people on the heath, giving them information about habitats and all the species found there, not just ground-nesting birds. Through engaging with heathland users, the project is working to ensure people understand that the sites are not just a dog walking resource, but are some of the most important natural habitats in the country.

The reaction from both the public and land managers to the deployment of the project's wardens has been really positive. People have been very receptive to the wardens' messages, and the majority have been happy to change their behaviour once they have been made aware of the sensitivities of the sites.

Looking ahead to 2016, the project is planning to reach more SPA users by increasing the area of the heath upon which the wardens are active, and through the recruitment of up to ten additional seasonal wardens. The project is also planning to launch the Heathland Hounds initiative with its code of conduct for dog walkers, and to establish an education programme focussed on young people.

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About the Author

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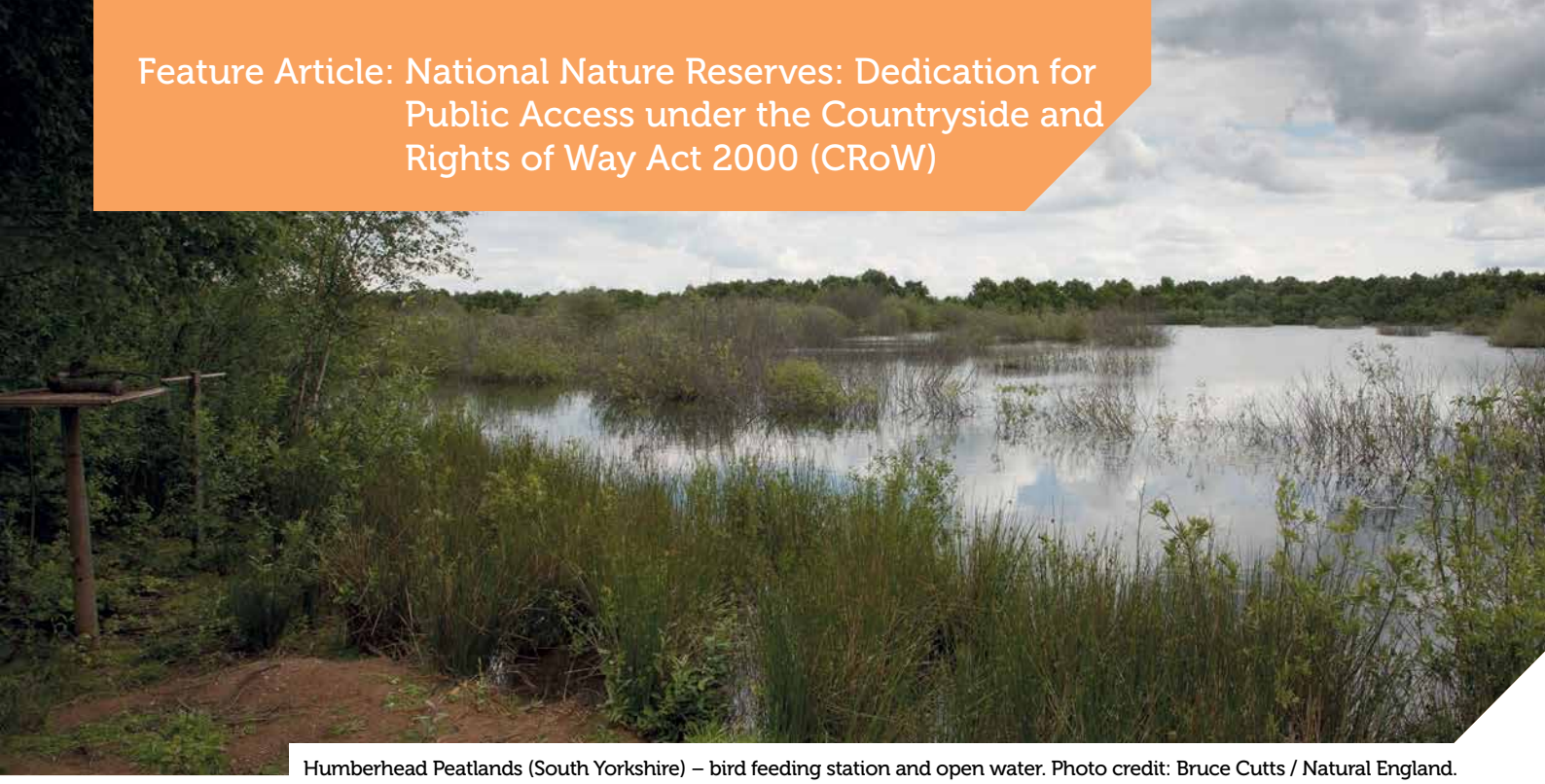

Humberhead Peatlands (South Yorkshire) – bird feeding station and open water. Photo credit: Bruce Cutts / Natural England.

National Nature Reserves: Dedication for Public Access under the Countryside and Rights of Way Act 2000 (CRoW)

Bruce Cutts
Natural England

Keywords: access, conservation, engagement, management, people

The Natural England National Nature Reserve dedication project aims to demonstrate that access and conservation management can co-exist. Improving access effectively, re-connects people with nature to establish long-term public support for conservation management.

It was once a common sight to see the term 'nature reserve' as shorthand for no access for people. Indeed in the early 1990s nature reserve "Keep Out" signs were not uncommon and were an accepted part of the access management toolkit for nature reserve managers and conservation organisations throughout the country.

When Natural England was vested in 2006 as a new integrated agency, we had an opportunity and a revised duty under the NERC Act to demonstrate how people and nature could flourish together, building on the experience of the implementation of the Countryside and Rights of Way Act (CRoW) and the work done by legacy bodies such as English Nature and the Countryside Agency. Experience suggests that people are more likely to value biodiversity if they are directly exposed to it and can share and enjoy it in person.

Natural England and NNRs

National Nature Reserves (NNRs) were originally established through the 1949 National Parks and Access to the Countryside Act to protect some of our most important habitats, species and geology, and to provide 'outdoor laboratories' for research. They now cover approximately 0.7% of England, and vary enormously in size and habitat. Representing the breadth of England's nature conservation interests including moorland, woodland, wetland and coast, over 95% of NNRs by area are designated as Sites of Special Scientific Interest (SSSI). Natural England manages 142 of England's 224 NNRs, with a range of management control afforded through ownership, leasehold, and Nature Reserve Agreements. Others are managed by organisations approved by Natural England, for example, the National Trust, Forestry Commission, RSPB, Wildlife Trusts and local authorities.

In 2006, the definition of 'Nature Reserve' given by section 15 of the National Parks and Access to the Countryside Act 1949 was amended by the Natural Environment and Rural Communities Act 2006 (NERC) to include a recreational

purpose "for the enjoyment of nature or for open air recreation" for NNRs "where that recreational management does not compromise their management for their conservation purpose".

The NNR Dedication Project

In an effort to demonstrate how the new agency was integrating its functions, and to work towards a more consistent approach to access provision on the Natural England freehold NNR estate, the Natural England Board considered a proposal in November 2011 to dedicate all of Natural England's freehold estate for public access under the provisions of section 16 of CRoW. This proposal built on a few earlier dedications of particular NNR areas by English Nature. The Board noted that dedication was consistent with Natural England's role as an integrated agency under our general statutory purpose, and with our wider objectives. The Board also noted that whilst the provision for access to the freehold NNRs was already generally good in practice, dedication would normally secure access as a public right in perpetuity and would act as an example to other landowners. This move echoed the decision taken by The Forestry Commission to dedicate all of its freehold estate during the early stages of the implementation of CRoW.

The Board accordingly authorised a four-year national dedication programme based on a presumption in favour of dedicating all parts of Natural England's eligible NNRs and similar holdings unless there were compelling reasons on particular sites not to do so. Examples of such compelling reasons might be major risks to public safety, or if we were unable to develop access proposals that would ensure appropriate protection for the qualifying nature conservation interest features on a particular NNR.

The freehold NNR estate

The core of the dedication project consists of 76 NNRs where Natural England has a freehold interest, i.e. NNR land held in public ownership. The extent of freehold ownership on individual NNRs varies, ranging between 2% and 100% of the site. Natural England ownership includes many NNRs that are robust and function as local greenspace, highly valued by local communities and visitors, through to those that are smaller, more isolated and fragile, and with less obvious traditional amenity value. Visitors to both the former and the latter often come with the desire to study the ecology of the sites and value the quiet contemplative nature of the reserves; Natural England takes this into account in the management of visitors to sites.

In addition, many of the freehold NNRs are the focus of research projects looking at a diverse range of issues, reflecting the statutory purpose of NNRs to provide special opportunities for scientific research and study. A network of long-term, environmental change monitoring sites; a coordinated surveillance programme for those species with the most restricted distribution in the UK; and over 80 other ongoing research and monitoring projects across Natural England's NNRs at any given time, all reflect the important 'specialist' qualities of many of these reserves.

Current access

While Natural England already had a first class track record of public access on its NNR estate through the years of work done by English Nature, the approach was inconsistent, often as a result of local traditions of site management. In 2012, Natural England developed a new set of 'Public Engagement Standards' for its NNRs, to bring some consistency to the expectations and provision of access, visitor engagement, and community participation. This has provided a foundation for further enhancing the visitor experience.

However, only 51% of Natural England's NNRs have public rights of way at present, and these often do not provide much useful access to large parts of the sites. Forty per cent of them already had some CRoW access land, covering over 11,000 hectares and accounting for 57% of the area of NNRs owned by Natural England. However, it is important to note that half of this existing CRoW access land is focused on two sites – Humberhead Peatlands in South Yorkshire and Moorhouse Upper Teesdale in County Durham.

Widening accessibility

The core aim of the NNR dedication project is to secure and improve the quality and consistency of access for visitors on foot. However, in addition, once the land is dedicated it is possible to relax the general restrictions that CRoW places on horse and cycle access to create revocable rights for these users. So, as part of the project we have looked in detail at the suitability of all existing paths for cycling and horse riding, and so far the project has delivered 21 kilometres of new higher rights access.

Another issue that can raise practical concerns on some NNRs is visitors with dogs. As a part of the dedication project we have worked closely with the access advisor for the Kennel Club to provide support and advice for our staff on changing the more problematic behaviours shown by some dog owners, and producing win/win solutions that improve dog access where possible without compromising the values of the site. A 'dogs toolkit' has been produced which provides NNR managers with a range of solutions and strategies to assist with some of the dog (and human) behaviour issues that they encounter.

Gait Barrows NNR (Lancashire) – on-site staff discussion around site sensitivities.
Photo credit: Bruce Cutts / Natural England.

Humberhead Peatlands (South Yorkshire) – popular managed routes through the NNR. Photo credit: Bruce Cutts / Natural England.

Compliance with UK and EU species and habitats legislation

A key feature of the NNR dedication project is that the specific arrangements we make for improved access are designed locally, site by site, in the light of the practical circumstances and requirements on the NNR and the sensitivity of its special nature conservation interest. There is discussion throughout the process between our access and nature conservation staff, starting at the earliest stage of development. Our initial access proposals are often iterative and modified as a result of this dialogue.

The modifications can be subtle and may simply include the addition of visitor information or the provision of access infrastructure to influence the way visitors use the site. This refinement process ensures we can develop access proposals with necessary forms of mitigation built into their design from the outset, to avoid unacceptable impacts. Such simple measures sometimes offer scope to reduce the impact that existing access may already be having on the sensitive features of a site.

Where necessary, we also have the option to impose a statutory exclusion or restriction of CRoW access rights, for example at a sensitive time of year for key wildlife features, or to avoid particular types of use that would have disproportionate impacts on the site. Such restrictions are possible either from the outset where risks are highly likely or in response to changing circumstances subsequently.

As the statutory nature conservation agency for England, Natural England must develop such measures in ways that comply with all relevant protective legislation including the Habitats Directive and Habitats Regulations in relation to European sites, as well as to domestic legislation on Sites of Special Scientific Interest (SSSIs). To ensure we get these judgements right and to clearly distinguish between our different statutory duties and roles, we have put a separation of duties in place between those officers responsible for putting forward proposals for improved access, and those responsible for advising on compliance with nature conservation legislation. In the event of any uncertainty, despite the integration of effective mitigation measures, we always apply the precautionary principle as necessary to protect the key features of each site.

Ownership and legal checks

We look in detail at the extent of the freehold ownership so that the appropriate legal checks can be made to confirm Natural England's ownership. Checks are also made to ensure that an NNR is not subject to any other legal interests that would impair our ability to dedicate. For example, anyone with the necessary legal interest would be asked to agree to the dedication; in effect, the process can't proceed without their agreement.

Completion of the dedication

The process ends with the production of the dedication instrument, which includes a map of the area of freehold that shows the area to be dedicated. Once this is signed the new access rights take effect six months after that date. During this time any work on the site is undertaken that has been agreed as a part of the appraisal process.

Overview

- The project to dedicate Natural England's freehold National Nature Reserves is now in its final months.
- So far about three quarters of our NNRs have been dedicated. We anticipate that by February 2016, some 14,000 hectares of NNR will have new access rights in place.
- Higher rights access for cycling and/ or horse riding has been agreed on around 21 kilometres of additional tracks and paths within the dedicated reserves.
- The project demonstrates how, through careful consideration, allowing people to access highly valuable natural habitats and associated wildlife can work well in practice, without compromising the key nature conservation objectives and obligations.

Below are two case studies that illustrate the solutions arrived at on two of the NNRs within the project.

Case Studies

Humberhead Peatlands

The Humberhead Peatlands NNR represents the largest area of raised bog wilderness in lowland Britain, at 2,887 hectares. The site is a Special Area of Conservation (SAC) for its habitat, and an internationally important breeding site for nightjar *Caprimulgus europaeus* and therefore a Special Protection Area (SPA).

More than 200 bird species have been recorded and approximately 75 have bred here. Winter visitors include whooper swans *Cygnus cygnus*, pink-footed geese *Anser brachyrhynchus* and short-eared owls *Asio flammeus*. From March to July a special summer visitor is the woodlark *Lullula arborea*. Oystercatcher *Haematopus* spp., lapwing Vanellinae spp., ringed plover

Saltfleetby and Theddlethorpe NNR (Lincolnshire) – walking along the back of the salt marsh. Photo credit: Bruce Cutts / Natural England.

Charadrius dubius and great crested grebe *Podiceps cristatus* can also be spotted around the lakes.

In addition, common cranes *Grus grus* have been using the NNR for the last few years. The site manager was concerned that the new access would limit his ability to manage people during the sensitive period when the visiting cranes were prospecting for a nest. Access case officers worked closely with the site manager to design access that mimics as closely as possible the current informal arrangements, with zoned statutory restrictions which can be activated at short notice, limiting access over pre-determined areas, without excluding the public from areas of no concern. This enables a flexible response that allows for the protection of the nature conservation interest while securing and improving public access to the site.

Mottey Meadows NNR

Mottey Meadows NNR in Staffordshire is one of the five most important sites for wildflower-rich floodplain meadows in the UK. Although owned by Natural England, it is looked after by graziers, whose families have managed the land traditionally for many years. The site is almost a living museum, with a hay cut being taken to help maintain the exceptional biodiversity. There is currently limited, managed public access to the site.

This traditional system of management is vital to the maintenance of the nationally important flora and the important ground-nesting birds on the site, especially curlew *Numenius* spp.. The management is complex, small scale and would be very difficult to replicate if continuing it became unattractive to the established graziers. The small scale of the site also raised concerns about trampling of the wildflowers and the fragile grassland community.

Given this combination of circumstances, Natural England concluded that the majority of the site should not be dedicated. The exception is a restoration meadow that is the most robust part of the NNR and is being slowly brought up to the standards of the rest. This meadow offers a great opportunity for explaining to the public the management of the rest of the NNR. The NNR staff will also look at the scope to improve managed permissive routes through the site over time.

About the Author

Bruce Cutts is Natural England's Senior Advisor on the NNR Dedication Project. Previous work includes periods with the Pennine Way and the Offa's Dyke Path national trails as well as with Northumberland National Park Authority. Bruce joined the Countryside Agency in 2001 working on the implementation of the CRoW Act. He worked on the development of coastal access proposals from 2005 until 2012 when he moved to manage the four-year programme of NNR open access dedication.

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How Participatory GIS Can Help Integrate People's Cultural Values into Landscape Planning

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Keywords: cultural ecosystem services, decision-making, interactive online mapping, Morecambe Bay, public perceptions, stakeholder engagement

The aim of this study, carried out by The Research Box and ADAS on behalf of Natural England, was to improve understanding of how the general public perceive and value landscape and ecology. A web-based tool was developed to capture these values spatially, potentially allowing their integration into decision-making alongside traditional environment data. The purpose of this article is to demonstrate how greater public engagement in landscape planning can be achieved in a cost-effective way using Participatory GIS.

In 2013, Natural England commissioned a pilot study to test different ways of capturing people's perceptions of the natural environment (Inwood *et al*. 2015). This was carried out in the context of an ecological network proposed for the Greensand Ridge, a Nature Improvement Area (NIA) which straddles Bedfordshire and Cambridgeshire. The study found that members of the public could separately identify individual cultural services (such as inspiration, beauty, tranquillity and the presence of wildlife) and locate these on a map. In late 2014, a follow-up pilot study was commissioned in the Morecambe Bay area to build on these findings and to develop practical advice and guidance on how cultural service information gathered from the public could best be used alongside natural environment data in landscape planning and decision-making.

Study approach

The study was carried out in three areas in and around Morecambe Bay – the Duddon Valley, the Arnside & Silverdale Area of Natural Beauty (AONB) and the Heysham-Morecambe-Lancaster triangle. A participatory workshop was arranged in each area. Participants were invited beforehand to record the cultural services they experience from the landscape and indicate the location of these experiences on a map. This was done through an online Participatory GIS (PGIS) tool or a smartphone Landscape App.

The PGIS tool (pgis.adas.co.uk) is an interactive website that can be accessed remotely by the public. The tool captures simple information about the user, including respondent demographic profile details (age, gender, home postcode), the frequency and purpose of their outdoor visits, and their environmental affiliations (e.g. wildlife memberships or land-based employment). A series of Ordnance Survey and satellite maps were provided on which people could place digital pins to denote locations where they experience cultural services. The cultural services examined in the tool comprised an agreed set of five themes: active outdoor recreation (walking, cycling, etc.); local history, heritage and learning; solitude, calm and tranquillity; beauty and inspiration; and wildlife and nature.

Participants were allowed to place as many pins as they wished within the map area. In addition to placing pins on the PGIS maps, people were able to record free-form notes against the pin locations to give an indication of the activities they undertake there, any landscape features of particular note, and the reasons why they find the place so special. The website also allowed users to upload pictures they may have taken of the place of interest. The location marked was recorded with explicit latitude/longitude coordinates but users were able to indicate if their pin was intended to be precise or if the services experienced were more representative of a wider area.

The Landscape App used in this study was an adaptation of commercially available survey software, designed to capture the nature and locations of cultural services experienced whilst users were engaged in activities in the countryside. The App asked the user a series of questions with answers provided on a 1-5 scale, and automatically logged the coordinates where those experiences were recorded using the GPS within the mobile device.

Workshop participants for each area comprised a mix of socio-economic groups, gender and age. They came from different towns, villages and rural locations within the locality and either lived or worked within the study area, or visited the area

for recreation. The workshop took a discussion format covering three major topic areas:

- Locations where cultural services were experienced and why they are special;
- Participants' experiences of using the PGIS tool and/or App; and
- Potential changes proposed to the local landscapes and people's reactions to them.

Findings

The PGIS tool provided a total of 385 location pins eligible for statistical and spatial analysis, placed by 46 users. In terms of the cultural services that the PGIS users selected as being important through their placement of pins, 50% of pins were for outdoors recreation; 16% for solitude, calm and tranquillity; 14% for wildlife and nature; 12% for beauty and inspiration; and 9% for local history, heritage and learning. A map of the pin locations by service type in the three focus areas is shown in Figure 1.

Shared cultural values of PGIS users

Pin placing through the PGIS tool was done by individuals in isolation. Those who subsequently attended a workshop were able to see an amalgamation of all participants' pins presented together on one map, and could therefore discuss the consistency of their PGIS choices.

Heat maps were produced showing the spatial density and distribution of cultural services in order to represent this 'shared value' (i.e. locations that were considered to be special by multiple users). Redder areas indicate higher number of pins per hectare, whilst greener represent lower density areas, with no colour meaning that no pins were placed. Figure 2 shows the heat map for Arnside & Silverdale and reveals a particularly high density of pins (0.25 / ha) by the hill known as Arnside Knott, though some other areas also stand out. The heat maps for the other two areas are not shown here but Williamson Park in the Heysham-Morecambe-Lancaster triangle was also a popular area. No specific area in the Duddon Valley had a particularly high concentration of pins, possibly suggesting that people value the wider landscape in this area and are less focussed on individual sites.

Participants' views on land-use change for ecological benefit

One of the aims of this participatory workshops was to identify how the general public perceived proposed changes to landscapes that are undertaken for ecological benefit. Those attending the workshops were generally supportive of the proposed changes to the landscape, including the planting of woodland on existing fell-land in Duddon Valley, so long as the planting is 'natural-looking' rather than plantation-style, not carried out on the very top of the fells (thus keeping their open and bleak appearance), and doesn't obscure views.

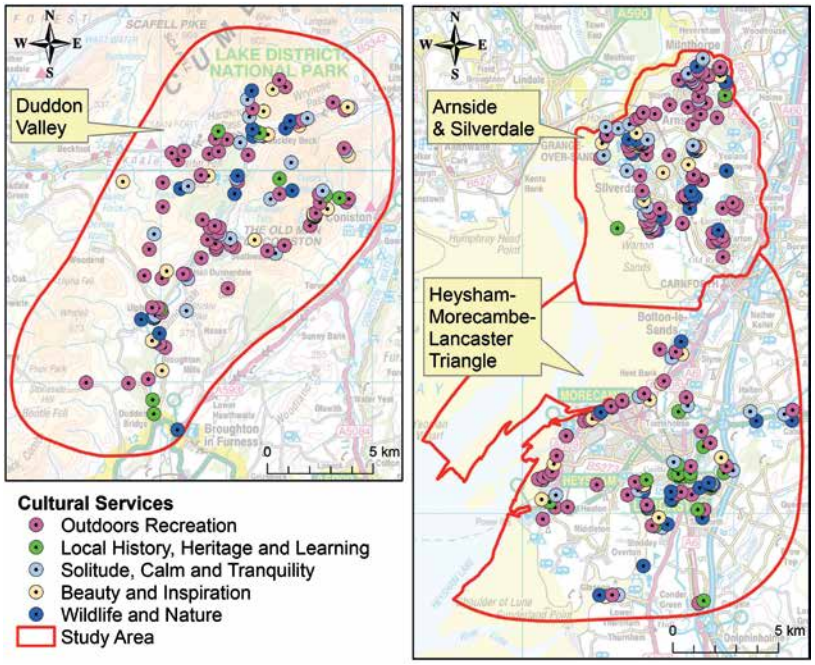

Figure 1. Pin Locations by Cultural Service Type. All Study Areas.

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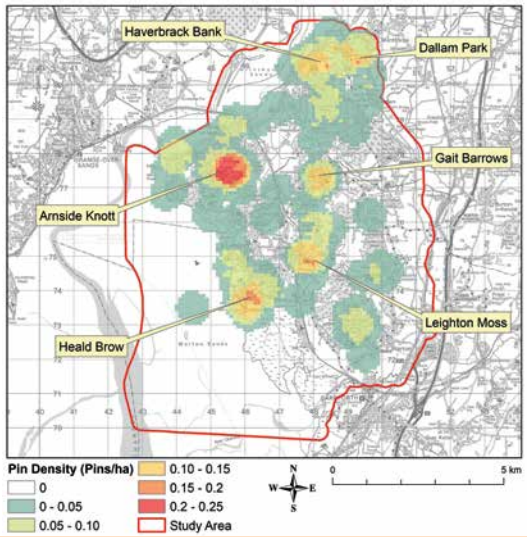

Figure 2. Heat Map of Cultural Services in Arnside & Silverdale AONB

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Relationship between cultural ecosystem services and land cover classes

Analysis was undertaken of the association between pin locations and land cover types from the 2007 Land Cover Map (NERC (CEH) 2011). This was to identify if people identify cultural services with specific land cover types more or less often than would be predicted from their proportional representation in the study area. Graphical representation of these findings is shown in Figure 3, where the "actual pins" means the number of pins placed in that land cover type and "predicted pins" means the number of pins that would be expected if participants placed their pins at random. The findings suggest that broadleaf and coniferous woodlands, rough and neutral grasslands, fen/marsh/swamp, montane, freshwater, supra-littoral sediment and urban land cover classes were particularly popular with the PGIS respondents. Other habitats, such as acid grassland, bog, salt water and littoral sediment were less frequently associated with participants' pins. Clearly, ability to access these areas may also be a contributing factor.

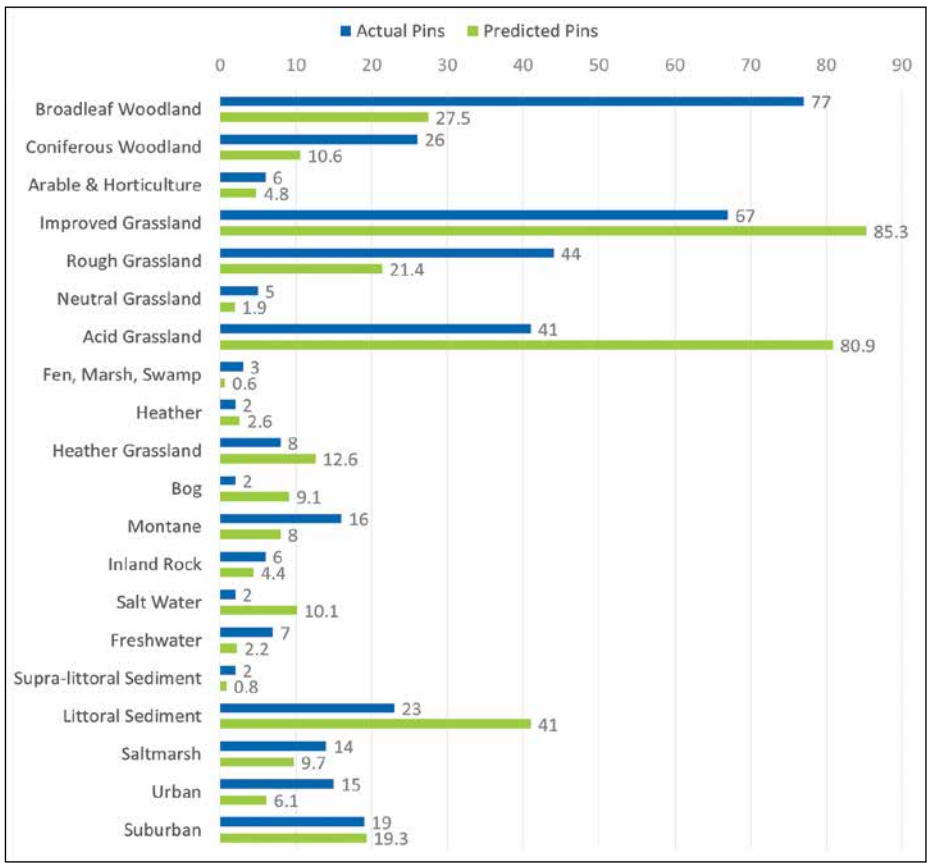

Figure 3. Pin Count by Land Cover Type. Actual vs Predicted.

Relationship between cultural ecosystem services and land under conservation management or environmental designation

The same analysis was performed between pin locations for cultural services and land under some form of conservation management or environmental designation. The findings are shown in Figure 4. Woodland designations were strongly represented as were historic environment features such as historic parks and gardens, listed buildings, and scheduled monuments. By contrast areas designated for biodiversity reasons (SACs, SPAs, and Ramsar) did not seem to be locations where people experienced cultural services. Again, access issues to Morecambe Bay may also explain why proportionally fewer pins were placed in these areas.

Further analysis was undertaken to investigate the different cultural services people experience in these areas. The breakdown across categories for a selection of conservation or environmental designations can be seen in Figure 5, with the breakdown for 'all pins' shown in the rightmost column as a comparison.

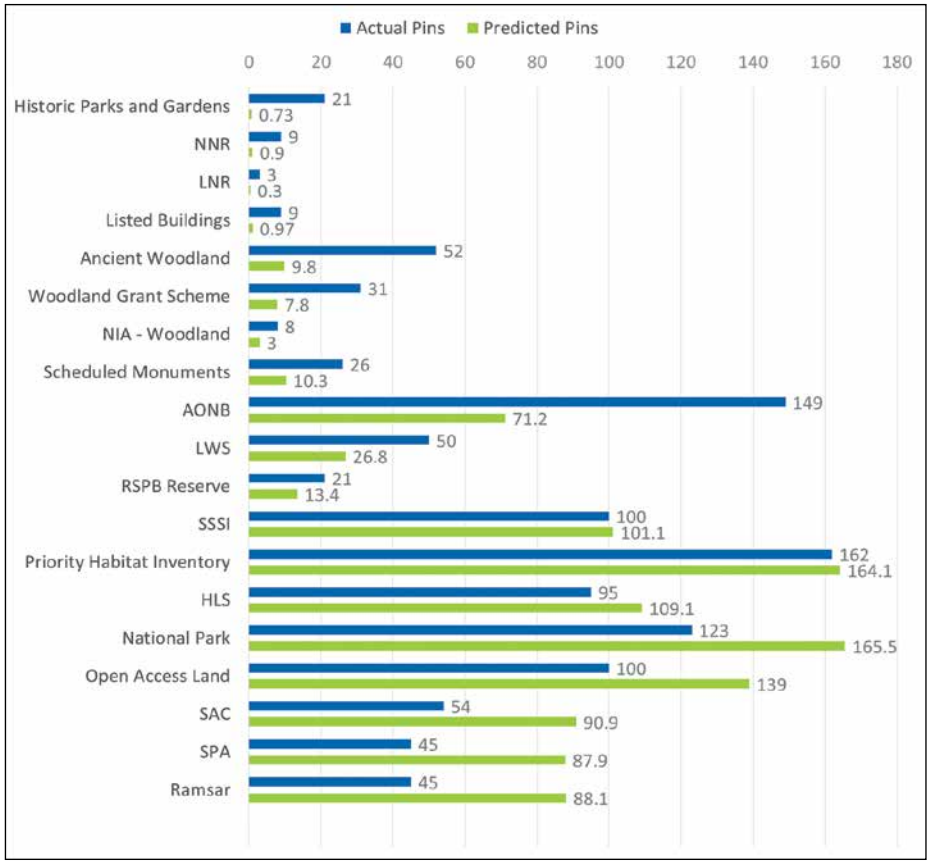

Figure 4. Pin Count by Environmental Designation or Conservation Management Agreement. Actual vs Predicted.

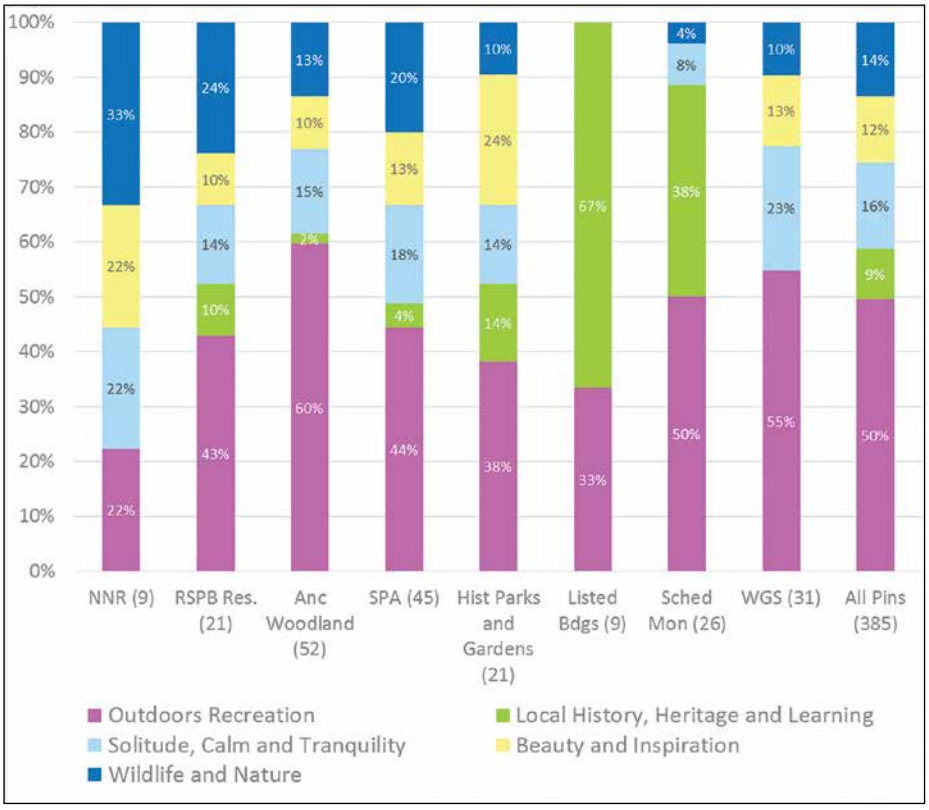

Figure 5. Percentage Pin Count – Selected Environmental Designation or Conservation Management Agreements by Cultural Service Type.

Cultural services and areas not under environmental designation or conservation management

Areas of land with environmental designations or under conservation management are generally already taken into consideration in planning decisions. The study therefore sought to identify any areas where people placed pins that were not covered by any particular designation or conservation management arrangement. This did not apply to the Duddon Valley or Arnside & Silverdale areas which are already entirely within National Park or AONB designations respectively. However, a material proportion (35%) of pins placed in the Heysham-Morecambe-Lancaster triangle were in areas outside the protection offered by designation or conservation management schemes. This suggests that local people still value these locations and there are potential implications for planning decisions which affect them. We discuss how local authorities could make use of this information below.

Issues faced

Users found the Landscape App difficult to use and insufficient data was collected to justify spatial analysis. The PGIS sample size was also relatively small due to the limited timeframe and budget of the pilot, so results may not be representative of the views of the overall population. Furthermore, as users were not restricted in the number of pins that they could place, the results are not strictly democratic. This does not mean that the spatial information captured in this study is any less valuable, but does provide insights on how data should be captured in future studies.

Incorporating the public's cultural values into decision-making

Mapping, using PGIS and other tools, is increasingly being used as a means of showing the value of specific geographical areas to the general public. PGIS tools also have the potential to illustrate trade-offs and conflicts between different ecosystem services and land uses. Several authors have already called for authorities to consider cultural services experienced by the general public when making land-use planning and management decisions (Brown and Kyttä 2014). However, perhaps due to its qualitative and somewhat intangible nature such information tends to be overlooked. So far there is little evidence that mapped cultural service data has actually been used in decision-making (Brown and Fagerholm 2015).

The results of the Morecambe Bay study have led to a number of recommendations for incorporating people's cultural service values into local decision-making processes.

The first step is to create a sufficiently large and representative cultural service dataset. The process used to obtain this data from the public needs to be democratic. It should also involve groups who rarely engage with the planning system, as well as those who may face social, physical, or psychological barriers to engaging with the outdoors and with computers. This will help to avoid 'white spaces' on a pin map (i.e. missing data) that may otherwise be perceived as having no cultural service value. Local authorities could use tools similar to those described in this study to collect pin data from all sectors of society across the whole district, borough or city (and into neighbouring authorities where appropriate).

Next, information on shared values must be obtained. This could be achieved through a heat map approach where multiple users' data is amalgamated; alternatively, public workshops could be held to gain consensus as to which areas people collectively attach greater importance. The accuracy and dimensions of these areas would then need to be verified by ground-truthing exercises.

Once the dataset has been created, it could easily be added to the local authority's existing GIS database. Like other data layers, it could then be used as part of the evidence base in strategic level planning as well as in development control decisions, neighbourhood planning and city region planning. The information could also be reflected in Supplementary Planning Documents, such as the planning guidance produced for managing London's strategically important views, which refers to 'Protected Vistas', and 'sight lines to Strategically Important Landmarks' (Greater

London Authority 2007). Alternatively, a new 'locally listed view' designation could be created to influence decision-making regarding proposals for development or other land use change that would significantly affect a popular view. Indeed, a recently published Green Paper calls for the Government to introduce a new designation of 'Areas of Outstanding Urban Beauty' to recognise visually appealing urban places, and a new class on the Community Asset register called 'local beauty assets' (Harvey & Julian 2015).

As well as contributing to development-related decisions, cultural services data could be used by landowners and land managers across all sectors to channel (limited) funding for landscape restoration towards areas of mutual benefit for people and wildlife. Plieninger *et al*. (2015) suggested that awareness of cultural services in landscape planning can improve transboundary management of sites, whilst they also reported that up to 47% of woodland owners in England are driven by these concerns, i.e. a desire to manage their woods for public or private recreation, aesthetics, or wildlife watching. Cultural service information could therefore contribute to the criteria used when assessing potential landscape changes alongside other economic, social and environmental criteria, using multi-criteria decision analysis or other decision-making techniques.

Acknowledgements

We would like to thank Bart Donato and Stuart Pasley of Natural England, Alison Fleming of The Research Box, and Mike Image and Antonio Calatayud of ADAS UK Ltd for their invaluable contribution to the project.

Conclusion

The Morecambe Bay study has confirmed and expanded the findings of the Greensands Ridge pilot. The results indicate that the general public does have awareness of distinct cultural services provided by the natural environment and that they can tie these experiences to particular features within the landscape. Certain types of land use and land cover have stronger associations than others, and not all of the places people value are currently protected by designation or conservation management agreement. This has important consequences for how decisions are made on land-use changes that may affect these locations. It has led to recommendations for how cultural services information can be captured and integrated with other GIS datasets for use in land-use and landscape planning.

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Habitats Regulations Assessment (HRA) of Plans

Manchester / Bristol
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The role and responsibilities of an Ecological Clerk of Works (ECoW) are introduced in this one day course. Training sessions consider construction site constraints and survey methods, how to ensure biodiversity features are protected from the types of activities encountered during construction and client liaison to avoid conflict with relevant legislation or planning consents.

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This training aims to provide professionals with the confidence to ensure ecology work is compliant with all aspects of this new British Standard by familiarising them with the content and structure of BS42020 and its application within the planning process. Led by Mike Oxford, Chair of BSI Technical Committee on Biodiversity and principal author for BS42020.

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The course gives an initial understanding of EcIA for those new to the subject and for practitioners only requiring an overview of the process. It will provide knowledge of the key stages, when EcIA is required and the policy and legal context. Teaching will be delivered through a combination of presentations and case studies discussed in small groups.

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This masterclass looks in detail at the current law on European Protected Species (EPS) and the implications of this legislation on providing robust EPS consultancy services to clients. Practical examples will be provided along with ample opportunity to discuss specific case studies, issues or problems experienced by attendees.

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London
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This seminar is designed for professionals requiring knowledge of key aspects of European and national Water Law. It touches on aspects of the Water White Paper, the implications of the Water Framework Directive, abstraction and impoundment, pollution of controlled waters, and permits and consents.

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A practical course aimed at those practitioners who have several years' existing experience of undertaking EcIAs. The course will focus on topics which can be more difficult to get to grips with: identifying important ecological resources, characterising impacts and determining significance.

www.cieem.net/training-events

Figure 4. Failed steel piles on Brownsea South shore in 2009. Photo: T. Flux

Caring for the Coast.... the Next 100 Years

Tony Flux
National Trust, Coast and Marine Adviser (SW)

Keywords: adaptation, coast defences, erosion, natural coastal processes, National Trust (NT), 'roll back', Sea Level Rise (SLR)

There are strong indications that sea levels will rise by at least 50 cm between 2060 and the end of the century, with the UK amongst those countries most affected. The National Trust has developed a number of proactive strategies to facilitate adaptation to these projected changes and to build resilience to the consequences. The guiding principle throughout is to try to work with the forces of nature and natural coastal process wherever practicable, and to do this for the benefit of people and wildlife.

The National Trust is responsible for approximately 10.5% of the coastline of England, Wales and Northern Ireland, with only the Crown Estate responsible for more coast and foreshore. This article outlines some of the adaptation strategies currently being developed by the National Trust and gives three examples of locations where they have been implemented, and where local communities have been involved with the planning discussions and decision-taking from the outset.

Introduction

The first piece of coastline was gifted to the National Trust in 1895. It comprised some two hectares of cliff at Dinas Oleu, above Barmouth, Mid-Wales. The donor, Mrs Fanny Talbot, made the declaration: *"I have long wanted to secure for the public for ever the enjoyment of Dinas Oleu, but wish to put it to the custody of some society that will never vulgarise it, or prevent wild nature from having its way"*. The Trust has been faithful to this expectation and Dinas Oleu is the same today as it was 120 years ago.

Balancing the differing needs of nature and people is a skilful business: the Trust has 120 years of experience in managing a diverse portfolio of coastal locations. This portfolio includes 1250 km of coastline

in England, Wales and Northern Ireland, the greatest proportion of which is undeveloped 'open coast' that is heavily designated. In the West Country, the Trust has responsibilities towards maintaining in good order a number of Special Areas of Conservation (SAC), Special Protected Areas (SPA) and Ramsar sites, and virtually the entire open coast of the Southwest is designated as a Site of Special Scientific Interest (SSSI).

A unique characteristic of the National Trust is that the land it manages becomes inalienable. This means that once in Trust care, it cannot be bought or sold; it belongs to the Nation (i.e. it is legally held in trust, in perpetuity, for the nation by the National Trust), no matter how challenging the future management may become. This arrangement brings great benefits in terms of opportunities for long-term planning but it also means that long-term perils must be considered because sale or disposal of 'problem' locations is never an option.

The National Trust's Coastal Zone Management strategy has its challenges and there are contradictions. Intuitively, 'maintaining the *status quo*' seems a desirable course of action – from the human perspective at least – but the coast is a highly dynamic environment where change is both natural and inevitable. This is largely because the global 'coast' is the principal place on earth where the three great elemental forces of land, air and water all meet. Furthermore, we have to realise that the conventional coast defence pattern of 'build-defend-repair-rebuild' will become increasingly unsustainable, especially from a financial standpoint. The Trust has evolved a number of strategies and programmes to deal with storm events and other exigencies as they arise. Climate change coupled with progressive sea level rise is at the forefront of the National Trust's concerns and work. This article outlines the issues and contingency planning techniques currently under development to address problems associated with natural change and climate change at the coast.

Sea Level Rise: What is the evidence?

If sea levels are rising, there will be consequences in terms of increased coastal erosion and flooding. Storms and storm surges will exacerbate the problem.

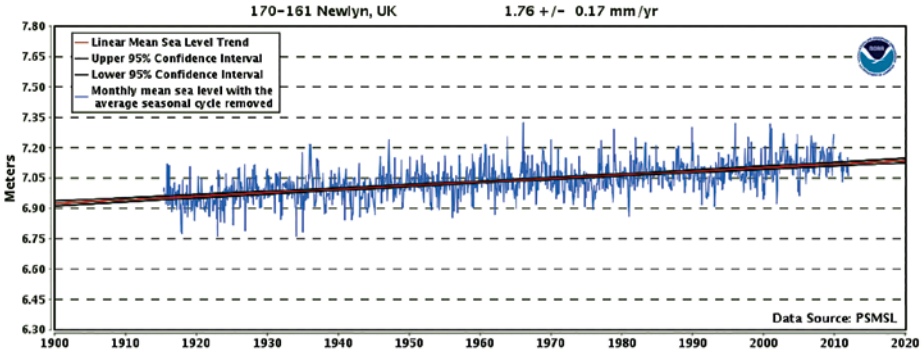

Figure 1. The 98-year sea level chart for Newlyn, Cornwall. Source: Permanent Service for Mean Sea Level, part of the National Oceanography Centre[1].

Many organisations have produced analyses of sea level rise and associated trends. One of the longest and most reliable data sets comes from Newlyn in Cornwall where an accurate tide gauge was installed in 1915 and has given daily recordings ever since. Figure 1 shows a mean rise in sea level of 18 cm in 100 years in Cornwall. However, looking at similar data over a longer period and a wider geographical region, the upward trend appears to be accelerating (Figure 2). Research over the last decade suggests that a further 500 cm of sea level rise is highly probable within the next 100 years (Nicholls *et al*. 2011).

The Marine Climate Change Impacts Partnership report card for 2013 stated: *'Projected sea-level rises including the effect of vertical land movement for London over the interval 1990–2095 are estimated to be in the range 21–68 cm. Due to the spatial pattern of crustal movement, slightly larger sea-level rises are projected for southern parts of the UK with smaller increases for the north.'* (Horsburgh and Lowe 2013).

78% of the UK population live within 50 km of the coast[3], therefore many people will be placed at risk from coastal erosion or fluvial and tidal flooding as the century unfolds. The open coast landscape, coastal agriculture, and both terrestrial and marine wildlife will all be increasingly susceptible to climate change impacts. Such changes will inevitably affect wildlife as much as it will people.

One of the tangible impacts of sea level rise on coastal beaches will be the migration landwards of the High Water Mark. Waves will attack the toe of cliffs more readily and beach volumes will be reduced. Beaches will become lower as sediment is drawn down, erosion will be more evident and there will be a higher likelihood of tidal flooding. On defended shorelines, the engineered beach is unable to migrate landwards (as it would on an undefended beach) so beach lowering and underscouring of the defences is probable.

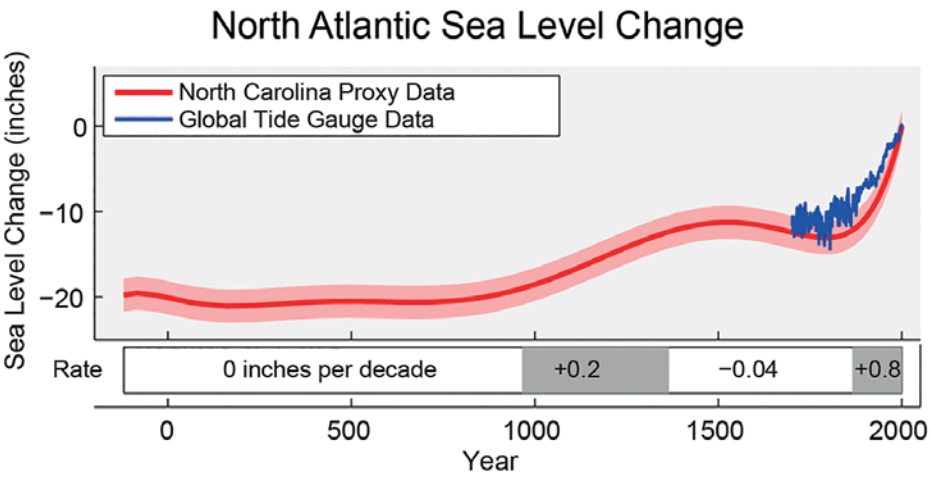

Figure 2. Sea Level Rise (North Atlantic) over 2000 years. Source: Kemp *et al.* 2011[2]. Note that the vertical scale takes sea level today as zero hence lower sea levels of the past are shown as negative.

Coastal Risk Assessments

In 2004, the National Trust commissioned research to investigate how many of its coastal properties were at risk from flooding and/or coastal erosion within the next 100 years. The purpose was to identify 'hotspot' properties in advance of any climate change impacts so that appropriate and practical adaptations, and strategies that enhance the resilience of those locations, could be implemented in a timely manner.

The results revealed that 279 km of coastline in the southwest of England are at risk from erosion and some 850 ha of Trust land are at risk from tidal flooding. The list of 'high risk' sites included iconic locations such as Studland Peninsula, Brownsea Island, Mullion Harbour, St Michael's Mount and Godrevy in North Cornwall.

A more detailed analysis followed in 2005. Coastal Risk Assessment [stage two] embraced a larger set of parameters. The audit included: vulnerable buildings, coastal defences, flood defences, access paths, infrastructure, utilities, revenue, employment and insurance, amongst many others factors. On completion, 79 properties had been identified nationally where significant, long-term issues existed and where 'adaptation' was clearly necessary. The key message was that *"it's becoming increasing unrealistic to think that we can 'engineer ourselves out of trouble'."* For a Nation proud of its engineering heritage, this might appear an admission of defeat but is actually the pragmatic approach. Whilst defending vulnerable locations will always be a consideration, the most sustainable approach will be to work alongside nature rather than interfering with it.

In recognition of the fact that what the National Trust was facing was mirrored across much of the UK coast (and in order to open up the debate with government, other NGOs and local stakeholders), the Trust produced a series of widely disseminated and easily understood documents called *'Shifting Shores'* (National Trust 2014).

'Shifting Shores'....in essence, what does it say?

Five key principles are highlighted:

1. **Long-term planning is essential.** If species/habitats, buildings, infrastructure and people have to be relocated and re-established in safer locations, it will take time and perseverance. There may be reluctance within communities to countenance upheaval, displacement or relocation. Regarding wildlife, food sources may become disrupted and life cycles out-of-phase. In all cases, making timely provision for 'change' makes sense. Adaptation strategies may require finance and may involve planning permission, all of which takes time. Time is also needed for good ideas to evolve and take root.
2. **Work with nature, not against it.** The National Trust understands that working with nature is invariably the most sustainable approach. In nature, coastal sediment transport and erosional processes attempt to find equilibrium. This means finding a balance between loss and erosion on one hand and accretion/deposition on the other. When we interfere with natural systems there are consequences: a sea defence in one location will probably trigger accelerated erosion in another; a substantial groyne on a beach will retard the movement of sediment on the upstream side and create a lowered beach on the sheltered side.
3. **Think and act in a wider context.** The sea and land take no notice of our artificial ownership boundaries. We should work with the idea of 'coastal cells' in which a self-contained suite of processes operate naturally. It is this wider spatial, geophysical sphere in which future planning should be embedded. Landscape-scale strategies are less likely to create difficulties for neighbouring locations. Terrestrial land planners need to be made more aware of this approach.
4. **Solutions need partnership.** The impacts of climate change will be felt everywhere and working in isolation is no answer. We must work with neighbours, local authorities, statutory agencies, other NGOs and governments so that decisions are taken democratically and all parties have a genuine stake in the outcome.
5. **Involving the public is critical.** Building consensus takes time. Raising public awareness of climate change issues is a slow process but effective adaptations cannot work unless people see, understand and accept the rationale. From the experiences of National Trust coast staff, adaptive plans need to be discussed gradually over time and have to be reviewed and repeated. Community engagement can be a rewarding exercise as the 'Living with a Changing Coast' project illustrated recently.

The 'Living with a Changing Coast' (LiCCo) Project

LiCCo was a three and a half-year EU-funded project (2011-2015) involving communities in five coastal locations in northern France and two in southwest England, namely the Poole Harbour conurbation and the Exe Estuary. The National Trust masterminded the Poole Harbour work. The objective was, firstly, to raise awareness of coastal change and the need to adapt to new conditions and, secondly, to develop and evaluate methods of communicating ideas to small communities where the impacts will be most keenly felt (Figure 3,[4]).

The LiCCo Project has taught the National Trust some key lessons. Firstly, coastal management plans have to be developed in conjunction with local communities in order to be effective. The whole process requires a lot of time, especially

Figure 3. Some of the LiCCo interpretation and engagement ideas.

to build trust and confidence within the community. Ideas generated within the community are especially useful because then the community takes some ownership of the issue. Equally, fresh, innovative communication ideas are worth considering and using future-facing scenarios can be particularly helpful. Employing neutral facilitators for meetings and workshops also helps to achieve a balance between the community and the LiCCo team members.

National Trust Coastal Adaptation Strategies (2009-ongoing)

Following the successful Coastal Risk Assessment programme, the Trust has asked each 'hotspot' property team to develop their own bespoke Coastal Adaptation Strategy to devise 'next steps' towards an aspirational / optimum outcome. All relevant factors will be considered based on a detailed appreciation of specific issues likely to be relevant at the location. A series of core topics have been specified including any primary sea defences such as sea walls, groynes or rock armour; any vulnerable infrastructure including sewage systems and cabling, roads and access paths, buildings and car parks; and any archaeological and historical assets.

The time horizon for planning optimum outcomes is 50 years. This may seem unreasonably long but there is little point in developing short-term strategies that are overtaken by climatic events in, say, 10 years.

One important aspect is the need to calculate the residual working life of buildings vulnerable to flooding and/or erosion. For example, the encroaching sea will render the quayside buildings on Brownsea Island untenable by about 2040. Therefore, initial ideas regarding relocation are being considered and it may well require the next 25 years to plan, finance, design, gain permissions, commission and build the infrastructure and buildings before they can finally be occupied.

Future Coast (2014-2015)

This innovative project focusses upon 'hotspot' properties where moderate to high levels of coastal change have been identified through GIS mapping techniques and the Coastal Risk Assessment and Coastal Adaptation Strategy processes. Specifically, sites likely to encounter more than 0.5 m annual erosion rates and those situated in the 1:200 (0.5% annual probability) coastal flooding risk zone are automatically included.

The key idea is to identify locations where habitats and wildlife are vulnerable to loss or coastal 'squeeze' and then to devise contingencies. Termed 'roll back', this means ensuring that space is provided for habitats and species to relocate in a safe and timely fashion. By quantifying both opportunities and constraints in spatial terms, it is possible to identify National Trust land that could be utilised effectively for nature conservation and for people to enjoy.

Case studies

1. **Porlock, Somerset.** The barrier beach has traditionally been re-profiled and realigned after major storms. Repeated efforts to strengthen the ridge using timber groynes and replenishing the shingle eventually proved ineffective and the last time repairs were made was in 1990. In October 1996, the barrier breached yet again and after discussions with local residents, Natural England and neighbouring landowners, a decision was taken to allow the breach to remain open allowing the sea to flood the low-lying fields behind the beach. Now, nearly 20 years later, the salt marshes are maturing and the area enjoys SSSI status. This 'working with the grain of nature' approach is termed 'managed realignment', a phrase coined during the production of the Defra-led Shoreline Management Plan reviews of 2008-2012.
2. **Birling Gap, East Sussex.** The famous chalk cliffs of Sussex and Kent are continually eroding. At Birling Gap, approximately 75 m of land have been lost to the sea since 1905; almost 7 m were lost in just two months during the winter of 2013/14. There was a row of nine cottages running perpendicular to the sea and the National Trust owned the ones closest to the cliff edge. With foresight, the Trust decided to proactively demolish the most perilous ones in advance of any sudden dramatic loss. There was no appetite to attempt to retard erosion here by using hard engineering methods such as building concrete defences under the cliffs. That would have been a costly and unsightly exercise on

a beautiful and iconic stretch of English chalk coastline. In line with the general principle of working with natural processes, this was the right decision to take because the cliff has now receded to the point where those cottages would have fallen over the cliff and onto the beach spreading debris over a wide area of unspoiled beach.

3 **Brownsea Island, Dorset.** In the 1970s, a series of low-impact defences were installed along a 2.5 km stretch of the south shore of the island. The intention was to slow down rates of cliff erosion but by 2009 these defences were failing (Figure 4). In 2010, in consultation with Natural England, it was decided that all the defences should be removed and not replaced. Erosion rates were expected to accelerate… and they did. However, the newly released sediment nourished the beach and foreshore making the whole system more stable again. Whilst there was clearly an expenditure (partly covered by grants from Natural England and Defra), the decision means the National Trust has recreated the self-regulating, self-sustaining system that existed before the 1970s interventions. As a bonus, the beach is more attractive and welcoming for visitors.

Figure 5. The National Trust conservation strategy for the next 50 years.

Conclusions

We cannot expect to resist all the inroads the sea will make on our land over the next century. Whilst devising adaptations to future changes might be complex, it is unwise to deny the obvious. We have the opportunity to make sure we minimise the worst excesses and maximise the opportunities that climate change might bring as long as we act now. Maintaining a vibrant, self-regulating system that can benefit wildlife and people alike is essential

The National Trust is still developing and fine-tuning its ideas and policies, especially in the light of likely climate change impacts. A new visionary document explains more of the philosophy being advocated by the Trust to an ever-widening audience, including the UK Government (Figure 5).

Feedback from surveys at coastal properties owned by the National Trust repeatedly shows that people derive great pleasure – and possibly health benefits – from visiting the coast, walking the coast path and simply observing their surroundings. The National Trust recognises that the coastline of Britain is held in very great affection by the population and aims to ensure that physical, educational and intellectual access to the coast and its many natural delights is readily accessible and available to all.

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Tony Flux has worked for the National Trust for nine years and is currently the Coast and Marine Adviser in the SW of England covering the four counties of Cornwall, Devon, Somerset and Dorset. Tony advises on matters involving access, coast defences, flooding and resilience issues as well as promoting awareness of likely climate change impacts and sea level rise implications for National Trust properties. He previously worked for the Dorset Coast Forum after an earlier career as a Field Biologist trialling and developing agricultural pesticides. Tony lives near Weymouth in Dorset.

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Preliminary Ecological Appraisal of Low Impact, Large-scale Transport Infrastructure Schemes

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Keywords: localised constraints survey, Phase 1 Habitat Survey, Preliminary Ecological Appraisal, remote sensing, transport infrastructure

Ecological specialists play a crucial role alongside engineers in the design and construction of transport infrastructure renewals and upgrades. The need for ecological assessment of high-impact new build is obvious. However, ecologists are often called upon to provide an assessment of the effects of renewals, upgrades or maintenance works over long railway or highway schemes where the impacts of the works are localised and intermittent. In these cases, is an Extended Phase 1 Habitat Survey of the whole scheme appropriate and justified, or should the level of survey be proportionate to the potential impact of the works? It is argued here that targeted and localised constraints survey, backed up by a thorough desk study, would be more efficient and just as informative.

Typical motorway verge habitat on the M25 in Surrey

This article explores an approach to Preliminary Ecological Appraisal (CIEEM 2012) of large-scale, linear transport infrastructure projects where impacts are localised within the transport corridor. Examples include renewals and upgrade of railway signalling infrastructure, or installation of new gantries and technology on motorways, which can be intermittent but extend for many miles. For these schemes, the impacts on the semi-natural habitat is localised, and the effect on the conservation status of notable habitats or protected species is rarely significant. In these cases, a less intensive field survey methodology could be more suitable.

Safety issues

The safety of the surveyors is an important issue when planning survey of transport infrastructure. The nature of rail and road infrastructure means that the risk of accident is very real. To visit railways or highways requires appropriate training, authorisation, and safety planning. Access to some locations may require rail or road closures, often at night when a visual ecological survey is inherently difficult. There can be steep verges, uneven ground, and thorny bushes to contend with, which makes full access difficult without walking in unsafe areas such as the railway or the hard shoulder. With these safety considerations to take into account, the possibility of completing a field survey of the entire scheme is diminished.

Desk Study and Remote Sensing

A great deal of information can be gained from a thorough desk study, including

locations of known populations of protected species, connectivity of the landscape, and potential biodiversity hotspots. The desk study is a particularly important stage for this approach, and the intention is that field surveys will confirm evaluations made at this early stage. It is recommended that wildlife records within an appropriate distance from the route (1 km for designated sites and 500 m for notable habitats and species records) are obtained from county record centres. The Government's MAGIC website[1] should be consulted for geographic information about designated sites and notable habitats. Ordnance Survey (OS) maps will reveal adjacent habitats, such as ponds, streams and woodland. Additional useful information can be found on old, large-scale OS maps such as the County Series from the 1800s (1:2500). These maps are available to view at local libraries or for purchase online[2,3]. The old maps will show which habitats are well established, and will often show how original features, such as the course of a river or stream, have been altered.

Relatively up-to-date aerial photographs are now freely available online[4,5] and can include features such as 'Bird's-eye View' and 'Street View' which give much more clarity of the landscape than overhead, two-dimensional photos. High-resolution aerial photographs and 'drive-through' video footage are increasingly being commissioned for large-scale transport projects, and these may be available to consultants. With a little experience, habitats can be recognised from good quality aerial photos. Some features may be easy to identify from aerial photos, such as a wetland or rush pasture; recognition of others is more difficult, such as unimproved grassland, with a characteristic yellow-brown colour; ponds are often hard to detect as they may be shrouded with scrub or trees, but they can be identified with practice.

Ground-Truthing and Habitat Mapping

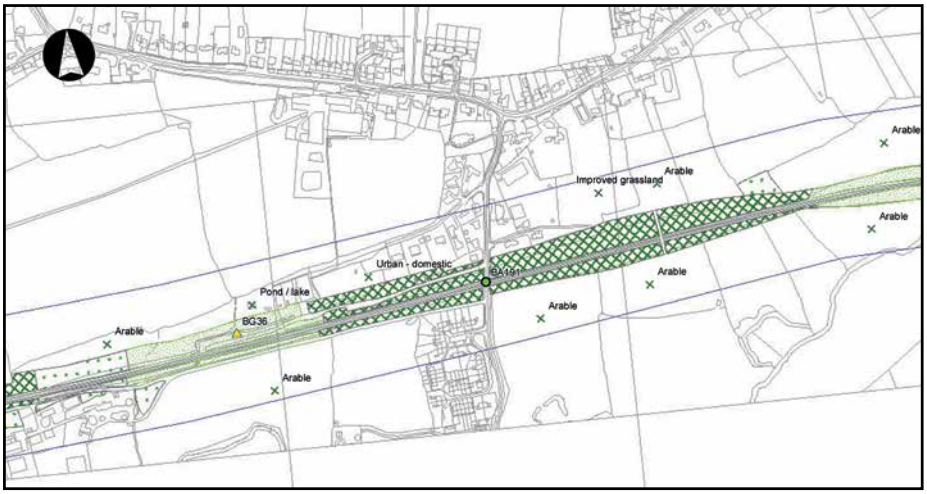
A useful next step is to 'ground-truth' potentially important ecological features previously identified during the desk study. Ground-truthing is a process of confirming during walkovers the presence of potentially important features, but full Extended Phase 1 Habitat Survey is not undertaken. During this process, notable habitats are identified and an assessment of the suitability of habitats for protected species is carried out. Ground-truthing is undertaken remotely from outside the railway or highway boundary, thereby avoiding safety issues. Access may be restricted to publically accessible sites and footpaths, but a good view of railways or highways can often be obtained from over-bridges.

There are disadvantages in using standard JNCC Phase 1 habitat mapping (Joint Nature Conservation Committee 2010) for these linear schemes. In order to produce a complete Phase 1 habitat map, the entire survey area must be accessible, which, for reasons explained, is not always possible. Railway lines and road verges are long and narrow and Phase 1 habitat mapping at normal scales is cluttered. Printing at a larger scale produces a high number of plans for a long scheme. The Guidelines for Preliminary Ecological Appraisal (CIEEM 2012) allow for alternative ways of recording habitat information. Broad habitat types (Jackson 2000) can be mapped without losing much of the descriptiveness. Alternatively, only notable habitats or those with potential for protected species (e.g. calcareous grassland, grassland/scrub mosaic with potential for reptiles, or broadleaved woodland suitable for dormice) can be mapped.

Building a Database

The use of GIS (Geographical Information System) is beneficial for large-scale, linear schemes as the information from the desk study and ground-truthing exercise can be added to it, and the results viewed at various scales, and overlain on OS maps, aerial photos, etc.. The background database upon which the GIS map is based can easily be edited, and the data can be built up and corrected for accuracy over time. The ecological data can be presented either as maps at any scale or as an electronic database available to the client or contractor throughout the project as part of an overall Environmental Management Plan (EMP). Hand-held

Survey of rail corridor using safety staff



Example of broad habitat mapping for rail corridor

Global Positioning System (GPS) mappers/ data-loggers (see review in Franklin *et al*. 2015) can save time as the data can easily be downloaded to a GIS mapping programme. GPS will indicate the position of the surveyor on a blank map, enabling a feature to be mapped accurately.

Localised Constraints Survey

The final stage of this approach to Preliminary Ecological Appraisal is to carry out a targeted localised constraints survey. This involves visiting specific locations within the infrastructure where access has been arranged, to carry out a detailed survey of notable habitats, and record evidence of protected species or invasive plants (such as Japanese knotweed *Fallopia japonica*) that cannot be identified remotely. The locations for this targeted survey will be determined from a preliminary assessment of the impacts of the works. The most significant effects from low-impact, large-scale, linear transport schemes occur at the locations of new signals, gantries or similar structures that require civil engineering works to create the foundations. The greatest damage to natural habitats may not be caused by the foundations to the structures themselves but by the earthworks, and re-profiling of cuttings and embankments that may be required to fit in the foundations. Relatively minor works, such as the installation of cables do not usually have significant ecological effects. However, localised constraints survey can be targeted to where designated sites, notable habitats, or populations of protected species are present or adjacent, and there is the potential for more serious impacts. Evidence of protected species (such as a badger sett or bat roost) outside the localised constraints survey may be missed initially, but where the works are small-scale or of short duration, the impacts on protected species are likely to be minimal. It is important to note that precautionary methods of working should be employed by the contractor when operating within habitats suitable for protected species.

Conclusion

This article is intended to contribute to the discussion on the use of Extended Phase 1 Habitat Survey for Preliminary Ecological Appraisal where it is arguably not appropriate. It describes a more proportionate and cost-effective approach to Preliminary Ecological Appraisal for large-scale, low-impact, linear transport schemes. This approach is based on a prediction of potential ecological constraints formulated during a desk study, supplemented by ground-truthing and confirmed during localised survey. This method should only be carried out by experienced ecological surveyors. Outputs from this appraisal should make use of GIS databases, and the report should summarise the constraints and make recommendations for mitigation and further surveys, if necessary.

There may be situations where this pragmatic approach is not appropriate. The transport schemes described are delivered under powers of Permitted Development, but Local Planning Authorities may require specific Preliminary Ecological Appraisals for planning applications. Ecological Impact Assessment (EcIA) and protected species licence applications will require more detailed survey in order to accurately assess the impacts of the scheme. However, this approach provides a pragmatic and innovative service for transport organisations facing the challenge of providing efficient ways of maintaining and upgrading the railway and highway networks.

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Meet the Author – Mathew Frith

What do you do?

I am the Director of Conservation for London Wildlife Trust, responsible for our nature reserves portfolio, our involvement with the planning system, and conservation communications and campaigns. I also lead on the Trust's strategic policy and advocacy to help ensure nature remains an essential part of the city's design and management (all wrapped up in the current paradigms of green infrastructure strategies, catchment planning, climate change adaptation, etc.).

What or who first inspired you to get into ecology?

Being allowed by my parents to rummage around as a young boy on a hidden chalky scrubby scrape not far from home in Croydon. I sought lizards, crickets and small coppers, and brought them home to watch in a vivarium. I also distinctly remember watching a line of peacock butterfly pupae hatch along the top of our old television one summer. Nevertheless, school soon pushed this aside…. and when undertaking a zoology degree the focus on biochemistry and genetics pummelled much of the remaining spirit out of me.

How did you get to where you are today?

My 'Damascene conversion' was at the Greater London Council in 1986, when I met someone working for a team of ecologists there. I was working to pay for rehearsal studios (I had a band I was developing), but was captivated by this notion of people being employed to help conserve nature in the city. Within 18 months I was working with that team, then shown a window to London Wildlife Trust which led to another flame being lit allowing my legs to get bloodied and nails dirtied managing Sydenham Hill Wood. A devotion to 'the cause' and a love of London helped.

What have been the most important steps along the way?

Working with dedicated and highly expert colleagues, and the ability to bring about positive changes no matter how small. Realising the disconnection of so many people from nature has continually driven me – whether the 8-year-olds from Limehouse who thought that tigers lived in the Wood, or the residents of Peabody estates who were crying out for a bit of beauty (aka flowers – but without those stinging bees) by their doorstep.

Are there any 'must-have' qualifications and/or experience?

In hindsight my degree has only served to get me interviewed, but has been of little direct use other than fostering an ability to write. It's more important to listen and get to know the people one's work might affect, and have the humility to accept that your view is but one in this world, no matter how 'professional' we might see ourselves. Working in Sydenham Hill Wood for 5 years gave me an insight as to how to understand the nature of a place and how best to work with the grain of nature. Patience is a virtue.

Do you have any advice for someone setting out on a career in ecology and environmental management?

Learn to write as a poet and think as a painter; we are there to inspire hearts and minds – not bamboozle with technical jargon (it has its place – keep it there). Remember what an animal or plant means to you – it's rarely 'scientific' – and this is important in shaping any decision we make.

What's the best thing about your job?

Working with others that have a passion for nature, and being able to make a difference (at least some of the time).

What's the downside?

The forever bureaucracy, and the feeling that one has been trying to say and do the same thing for years, but explaining it to different people requires constant re-packaging. Plus London has changed significantly in the past 5 years, and not necessarily for the better as far as nature (or people) is concerned.

What's next for you?

London Wildlife Trust has some exciting projects emerging which have been great to help shape; I look forward to assisting these come to fruition. I'm also keen on writing a book about the people that have shaped nature conservation in London, intertwined with stories of some of the key animals, plants and wild places that find their home here.

What is your top tip for success?

Be politically astute, be sensitive to the audiences your work may impact, and don't lose the natural curiosity of your inner child.

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Synthetic Biology and Ecology: A New Frontier

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While debates on ecological restoration and rewilding rage back and forth, hardly a week goes by it seems without reports of some new advance or development in DNA research and genetic engineering. Indeed, the whole field is moving forward so rapidly that we, as a profession, will be soon be faced with such a great variety of tricky issues that we ought to start thinking about them now.

Just to put things in a little perspective, there are members of CIEEM for whom the final elucidation of the DNA double helix by Watson and Crick in 1953[1] happened around the time of their birth; school biology in the late 1960s was still teaching the genetics of Gregor Mendel; universities in the 1970s were just getting electron scanning microscopes and mapping cellular structures; the first genetically modified food – the ill-fated Flavr Savr long-lasting tomato – went on sale in 1994[2]; the overall human genome was published in 2004[3]; today there are clubs whose members ('biohackers') routinely manipulate genetic material using components purchased online; and now we are entering the era of synthetic biology in which organisms could be built to order[4].

With this pace of innovation, where could genetic engineering go in the next 40 years (one cycle of a Sitka spruce plantation) and what might be the implications for ecology and environmental management? A few possibilities are sketched out here, but as Niels Bohr said when discussing the impact of the arrival of quantum physics, it is exceedingly difficult to make predictions, particularly about the future.

Research and Technical Applications

Some areas of DNA research advance are firmly in the benign category. The well-established polymerase chain reaction (PCR) is a powerful yet relatively simple technique that can amplify fragments of DNA and allow statistical software to piece them together as a genome, or allow key sequences to be analysed. It is already making an impact on disciplines as diverse as taxonomy, historical ecology, species identification, testing for presence of elusive species such as great crested newts *Triturus cristatus*, and marking or labelling organisms to track movements or detect illegally harvested products. What CIEEM field surveyor would not welcome the successful development of a Star Trek-like handheld device, recently proposed by the University of Leicester[5], that could perform nanopore sequencing of DNA, compare its results to a 'barcode' database, and yield a species identification in an hour or so!

De-extinction: Going Back to the Future

A more controversial category of genetic endeavour is de-extinction, meaning any attempt to create some proxy of an extinct species or subspecies through any technique, including methods such as selective back breeding, somatic cell nuclear transfer (cloning), and genome engineering. In June 2015, the IUCN Species Survival Commission sent out for review draft guiding principles on de-extinction for conservation benefit[6]. This document, which could well form a useful starting point for CIEEM thinking, considers the potential, ethics, risks, practicalities and legal framework surrounding the de-extinction and release of (recently) extinct species. The feasibility of species de-extinction via cloning, but also via the reading of ancient DNA and the reconstruction of extinct genomes scaffolded on extant species using the new Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) techniques, has become a reality and the question of undertaking de-extinction has moved from *'Could we?'* to *'Should we?'*.

The definition of 'recent' extinction ranges from after 1500 AD[7] to within the last 130,000 years when humans became a wide-ranging species[8]. How far back can we go? The sequencing of entire genomes of woolly mammoth *Mammuthus primigenius*, passenger pigeon *Ectopistes migratorius* and of an Ethiopian male human ('Mota') who lived approximately 4,500 years ago[9], among others, already show the degree to which even current techniques have progressed. Indeed, the US-based NGO Revive and Restore has already drawn up a list of candidate de-extinction species[10].

Ecogenetic Management

In the distinctly threatening category, DNA sequence editing techniques such as the efficient CRISPR-Cas9[11] can be applied to any genome. It will be one of the main ways of potentially creating a proxy of an extinct species by inserting and deleting sequences in the genome of a near relative prior to cloning. It and similar techniques are widely used in the biotechnology field to modify (or even create) microbes such as *Saccharomyces cerevisiae* that can produce molecules from human insulin to isobutanol[12].

Imagine a scenario, then, where a population is coming under stress and rapidly declining from some indirect human (or even natural) cause (pollution, climate

Common name	Scientific name	Range	Extinction
Passenger pigeon	*Ectopistes migratorious*	North America	1914
Carolina parakeet	*Conuropis carolinensis*	Eastern USA	1918
Cuban red macaw	*Ara tricolor*	Cuba	1864
Ivory-billed woodpecker	*Campephilus principalis*	Southeastern USA	(1944)
O'o	*Moho nobilis*	Hawai'i	1934
Elephant bird	*Aepyornis sp/Mullerornis sp*	Madagascar	(1800s)
Moa	*Dinornis spp.*	New Zealand	(1400s)
Huia	*Heteralocha acutirostris*	New Zealand	1907
Dodo	*Raphus cucullatus*	Mauritius	1662
Great auk	*Pinguinis impennis*	North Atlantic coasts	1852
Auroch	*Bos primigenius*	Europe, Asia, North Africa	1627
Pyrenean ibex, Bucardo	*Capra pyrenaica pyrenaica*	Iberian Peninsula	2000
Thylacine, Tasmanian tiger	*Thylacinus cynocephalus*	Tasmania, Australia	1936
Woolly mammoth	*Mammuthus primigenius*	Northern steppes	(6400 ybp)
Mastodon	*Mammut spp.*	North and Central America	(10 000 ybp)
Sabre-toothed cat	*Smilodon*	North America	(11 000 ybp)
Steller's sea cow	*Hydrodamalis gigas*	North Pacific	1768
Caribbean monk seal	*Monachus tropicalis*	Caribbean	1952
Baiji, Chinese river dolphin	*Lipotes vexillifer*	Yangtze River, China	2006
Xerces blue butterfly	*Glaucopsyche xerces*	San Francisco, USA	1941

change, predation by introduced alien species) and the proposal comes: we can make this species resistant to the impact by inserting a gene or two from possibly even unrelated species (as happens frequently in crop plants). Or the de-extinction route might make it be possible to engineer a new type of herbivore that could mimic the function of an extinct one in order to restore or maintain a certain vegetation type. Would this just become another tool in our conservation kit – a mere extension of relocating threatened populations from one island to another, or training raptors to change their prey, or *ex situ* breeding of species extinct in the wild?

Implications for CIEEM

The Institute is increasingly seen as the leader for providing guidance on best practice in ecology and environmental management. It seems only a matter of time (and perhaps not much of it) before attempts are made to create, through genetic engineering, some version of great auks or distinctive British populations of extinct insects. Some private interests could seek to set up a 'Holocene Park' with proxies of woolly mammoths and sabre-toothed cats. Although existing British legislation and international conservation agreements (such as the Cartagena Protocol) would militate against these kinds of initiatives, sentiments could change or exceptions be made.

The issues, for and against, require careful consideration. In addition to the IUCN guiding principles of de-extinction, a joint workshop between the Massachusetts Institute of Technology and Woodrow Wilson Center last year set out seven key areas for further research[13]:

1. **Comparators:** producing novel organisms challenges the established practice by risk analysts of comparing a modified organism to its wild-type 'parent'. How does the lack of a wild type comparator affect risk assessments? What alternative testing schemes are needed for 'no analog' organisms, possibly even in 'no analog' ecosystems?
2. **Phenotypic characterisation:** How can one identify and prioritise synthetic traits and/or synthetic organisms of concern? Which phenotypes are most relevant for assessing ecological interactions and consequences of such organisms in the short- and long-term?
3. **Fitness, genetic stability, and lateral gene transfer:** These properties contribute to and are affected by the interaction of organisms with their environments. How does one measure these properties and interactions in organisms produced using synthetic biology with consistency, reliability, and confidence? What metrics are needed for measuring these properties?
4. **Control of organismal traits:** What degrees of biological and physical control should be required in advance of deployment of a modified organism? How do environmental conditions affect the need for intrinsic and external controls for organisms produced using synthetic biology? Which types of environmental releases are likely to be irreversible?

5. **Monitoring and surveillance:** Is it feasible to monitor these organisms and their ecological/evolutionary effects? Should monitoring be broad-based, targeted or both? How can existing systems of monitoring and surveillance be used in this effort? What new systems of monitoring and surveillance are needed? What role should baseline data play in these efforts? Who manages and curates the data? Who manages access?
6. **Modelling:** What Modelling tools exist for synthetic organisms and are they sufficient for situations where organisms produced using synthetic biology are released into the environment? Can existing models be combined across disciplines, or are new approaches needed to integrate natural, physical, and social sciences with engineering?
7. **Standardisation of methods and data:** What research is needed in order to standardise testing methods, data reporting, and organism characterisation for ecological evaluations? How should data collection and integration be handled? Who is responsible for developing, promoting, and enforcing standards?

At a minimum, we need to make it clear to the general public and media that the possibility of de-extinction, whatever that turns out to be, is not a substitute for conserving wildlife in the wild.

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CIEEM Awards 2016

Our Awards: the perfect chance for our profession to collectively celebrate the achievements of our colleagues and organisations in ecology and environmental management.

Year on year, the CIEEM Awards grow and with that so does the recognition of the hard work our profession contributes to a more sustainable future. This year, there has been a furore of activity around connecting people with nature, in 2016 we intend to engage the public more with how our members continue to work in order to support this ideal and the CIEEM Awards are how we showcase these achievements.

All Awards categories are now open for entry and we hope that, whether considering submitting your own project for an award or nominating someone else, you will take this opportunity to highlight all the good work being done to protect and enhance our natural environment.

This year there are 14 categories:

1. CIEEM Medal
2. Best Practice Awards
   a. Practical Nature Conservation (Large-scale)
   b. Practical Nature Conservation (Small-scale)
   c. Innovation
   d. Knowledge Sharing
   e. Stakeholder Engagement
3. Tony Bradshaw Award (NB: For winners of a Best Practice Award category only)
4. Corporate Achievement Award
5. NGO Impact Award
6. Student Project Award (Undergraduate)
7. Student Project Award (Masters)
8. Promising Professional Award
9. CIEEM Members' Award
10. *In Practice* Award

All shortlisted projects and individuals are invited to attend the Awards Luncheon at the Birmingham Botanical Gardens on 30 June 2016 where the winners will be announced. Winners receive a trophy and certificate (Student Project winners receive a £250 cheque, trophy and certificate) and the runners-up receive certificates. This is an exciting opportunity to highlight and celebrate the achievements of our profession so check the eligibility criteria for each award, check the deadline and then get your entry (or entries) in.

For more information please check the website below or contact awards@cieem.net.

www.cieem.net/awards-2016

Sponsorship

We are planning for the Awards 2016 to surpass those of 2015, with more media coverage and member engagement; your organisation could be part of this. To be associated with the Awards as a category sponsor you can enhance your reputation as being a well-respected market leader within the environment sector, supporting the achievements within the profession and contributing to celebrating their success. The categories left for sponsorship are on our website (www.cieem.net/awards-sponsorship) or alternatively please email emmadowney@cieem.net, who will be on hand to discuss the right sponsorship opportunities for your organisation.

Submitting Your Project for the Best Practice Awards:

A Guidance Note for Nominees

David Tyldesley FCIEEM
Chair of the Judging Panel for the CIEEM 2015 Best Practice Awards

This guidance note has been prepared using the experience of the judges of the 2015 Best Practice Awards for the five project-related categories. It is intended to improve the standard of submissions, so that their fit with the criteria is improved and, ultimately, to ensure that the best projects amongst those submitted are short-listed for awards.

If you are considering making an entry, and we hope that you are, you should assume that for all categories there will be several other entries. Just because only one project may have been short-listed does not necessarily mean it was the only project submitted for that category. It may have been the only application that the judges considered to meet the criteria and to be of an award-winning standard *on the basis of the information submitted.* Applicants may have submitted a very worthy project, but if the judges are not given adequate information and clear supporting evidence, in accordance with the criteria, that project cannot be short-listed. It is therefore important that you follow the instructions, prepare the application carefully, with attention to detail, and use the opportunities to promote your project to the full.

An Introduction to the Judging Process

All the judges are volunteers. The Institute invites one volunteer to act as chair of the panel, to help to coordinate the work of the panel and, if necessary, to initiate discussion as to the judging procedure and criteria. All judges must declare any conflict of interest or prior involvement in any of the projects when the list of projects is first circulated by the Institute and before any judging commences.

For each of the five Best Practice categories the Institute sets three criteria. Each of the judges then independently scores each nominated project against each of the three criteria on a scale of 1 (low) to 10 (high). Thus, for each project there are a maximum of 30 points per judge. Each judge also comments as necessary on each project. A summary is circulated to all of the judges who then discuss the scores and the comments by teleconference. For each category, up to three projects are considered for short-listing. The judges decide whether to recommend to the Institute to award a prize and whether to award any commendations and if so, whether they should be 'highly commended' or 'commended'. The panel is guided by the scores but awards are decided following intensive discussion about each of the projects and their fit with the criteria, especially whether they represent 'best practice'. After this task is completed the panel advises the Institute as to whether the Tony Bradshaw award for *outstanding* best practice should be given that year.

Category Specific Guidance

Large-Scale and Small-Scale Practical Nature Conservation

The first two categories share the same criteria for eligibility, namely that either the large-scale or small-scale (as defined in the application form) project: enhances biodiversity, ecosystem functioning and sustainable development; please note the 'and'. Although it may achieve some of these better than others, a winning project should do all of these things. The application should demonstrate this by reference to the specific criteria as follows:

a. Contributes to the conservation and enhancement of biodiversity (again please note the 'and';
b. Contributes to enhancement of ecosystem functioning and services;
c. Embodies and advances the principles of sustainable development.

It is acknowledged that some of these terms are broad in nature. This is intentional, so that a wide range of project types are eligible, rather than being constrained by over-prescriptive criteria. So it is up to the nominee to describe and demonstrate how you think the criteria are met – for example, how the project embodies and advances the principles of what you would describe as sustainable development, in the context of the submission. A mere assertion that it is consistent with the generality of this and other criteria is of no value to the judges. For this category it is particularly

important to provide a proper and adequate description, supported by other documentation such as specifications, plans, maps, photographs, etc. Any results of monitoring and an explanation as to how the project met its objectives – or is expected to do so in the future – are potentially of great value to the judges. If a submission is part of a wider project or group of projects this should be made clear and where necessary the effects of other parts of the group should be explained. For example, if a project is actually a compensatory scheme under Article 6(4) of the Habitats Directive, this should be made clear. The nominee should provide an explanation as to the harm that the scheme is seeking to compensate for. It is misleading to present only the positive side of a scheme, as if it is a wholly beneficial habitat creation or management scheme.

Innovation

Submissions for the 'innovation' category need to demonstrate how it contributes to the profession by way of addressing the three criteria which are:

a. It displays innovation in its approach, methods or outcomes; here note the 'or';
b. The extent to which the project is replicable and can advance best practice within the profession;
c. It demonstrates the role of ecologists and environmental managers in delivering sustainable benefits for society.

Self-evidently a project in this category should be innovative, original and/or represent or demonstrate a new idea, methodology, approach or result. The project is more likely to be short-listed if it is clear to the judges how the project can be used to improve or advance best practice in the future, whether in its original or an adapted form. The third criterion should be addressed fully, in order to show that the project has lasting benefits.

Knowledge Sharing

Submissions for the 'knowledge sharing' category need to demonstrate how it contributes to knowledge exchange, training and education within the profession of ecology and environmental management, by way of addressing the three criteria which are that the project:

a. Successfully communicates its objectives, approaches and findings to both project stakeholders and a wider audience (of course this may depend on the project);
b. Has the potential to influence research and policy agendas favouring best practice in ecology and environmental management;
c. Promotes opportunities for training and education within the profession.

However commendable they may be, projects which comprise wider environmental education for the public, or site interpretation, will not, therefore, meet the criteria. Documentary evidence from stakeholders or others who have come into contact with the project should be provided in light of the first criterion. Mere assertion that communication helped to share knowledge will be particularly unconvincing in this category. The judges will also be looking for a clear explanation as to how the project will be influential (second criterion) and how that influence may be disseminated through targeted and effective training and education opportunities in the profession (third criterion).

Stakeholder Engagement

Submissions for the 'stakeholder engagement' category should demonstrate effective and inclusive (note the 'and') involvement of all relevant stakeholders by producing evidence in relation to the three criteria that the project is:

a. Based on transparent and timely access to information, with sufficient time to fully understand and incorporate concerns and recommendations of all stakeholders;
b. Culturally appropriate so as to facilitate dialogue and exchange of information and allow consensus building;
c. How potential tensions or conflicts were anticipated and if relevant, how they were resolved or taken into account in appropriate ways.

Again, mere assertion that stakeholders were effectively engaged will be particularly unconvincing and evidence from them will usually need to be submitted. The criteria also require a sufficiently detailed timeframe to be submitted. The judges would find it particularly helpful to see how differing stakeholders may have been treated appropriately, where necessary. It will be noted that the latter criterion is broader than the third criterion for the previous awards. This was because the judges felt that greater scope should be given to demonstrate how tensions or conflicts were anticipated and dealt with. The previous criterion stated *"Impartial, accessible and fair mechanisms for grievance and conflict resolution are available to all stakeholders"*.

Additional General Guidance

The judges are looking for a full description of the project in the context of the category and the criteria, with plenty of strong evidence – sound and objective (not just hearsay or anecdotal). The nominee should ensure that the submission explains the success and significance of the project in relation to the criteria. Just because a project was completed does not mean that it was successful and represents *best practice*. The judges are eager to select and promote best practice. So it is incumbent upon nominees to show that the project is not merely run-of-the-mill; or indeed just another example of routine good practice, which we should all be achieving.

Each category is likely to have a winner, though the judges can decide that no submission merits an award. There will often be projects which are 'highly commended' or 'commended'. Given that these are short-listed in 'best practice awards' their merits should not be underestimated. Particularly in a category where the standards are very high, exceptional projects, which in another year may have won, will receive such commendations and recipients should be proud of their achievement.

Some further tips to improve your submission:

- Include a full and adequate description of the project, not just a few sentences that provide headlines or a summary.
- If you use pre-prepared material make sure it is suitable for this purpose, experience shows that it is rarely a substitute for carefully addressing the criteria!

- Do not assume that the judges will know all about your project, no matter how widely it may be known in your field/area.
- Include background information as to why your project was needed, its scale, how long it has been running, whether it has been completed and how much longer it might run.
- Explain why you think your submission represents best practice, not just routine good practice; what makes it stand out?
- Explain what the project is achieving on the local and wider scale with evidence for this.
- Avoid repetition especially when addressing the different criteria, each criteria is there for a reason. The judges need to know how you think it meets them, with supporting evidence.
- Make sure that your submission is well written, using appropriate language and style, avoid spelling mistakes, poor grammar and incorrect punctuation. This may seem elementary but it is part of being professional and carelessness gives entirely the wrong impression.
- Use the total allowance of words to the full, it is up to you to be sure you have made the best possible case for your submission.
- Supplementary material is encouraged but is not a substitute for answering the questions. Additional material must be limited to four pages.
- Make sure that supplementary material is relevant, focused, fit for purpose and reasonably accessible and readable, in a reasonable period of time, for the judges. Simply attaching material and documents prepared for a different purpose will rarely help the judges reach their conclusions.
- Be innovative, bold and ambitious. To the judges, some submissions look much the same as all of the others. They welcome a variety of ways of demonstrating why your project should be short-listed.
- Do not be shy about telling the judges why your nomination should win. The judges welcome presentations delivering the 'wow' factor about a project, especially where other material provides underpinning evidence.

Supporters

The supporters play a vital role and should provide the judges with a meaningful endorsement, based on actual knowledge about the project, which is independent, impartial and relevant to the nomination. Again the judges are looking for evidence; but where supporters can only express an opinion as to the merits and achievements of the project, and the evidence is already in the submission, the judges need a clear and unequivocal professional opinion, with a coherent explanation supporting it.

More Information

For more information on the CIEEM 2016 Awards, including nomination and entry forms, please see www.cieem.net/awards-2016 or contact awards@cieem.net.

Charging Ahead at Natural England

Joanna Carter
Commercial Services Team, Natural England

Getting environmental advice on your planning proposals should now be easier, thanks to an expansion of services offered by Natural England.

Are you thinking of applying for planning permission and need information about the potential impacts on protected areas or wildlife? Whether you are just scoping out a project, or have an application yet to be determined, if you need advice on how best to avoid or mitigate impacts on protected sites or species, you may be able to take advantage of our chargeable advice services.

We first launched our chargeable advice services in 2012; the Discretionary Advice Service (DAS) for planning proposals, and the Pre-Submission Screening Service (PSS) for advice on European Protected Species licence applications. We are now expanding the scope and availability of these services to better meet the demand from customers for early advice.

DAS was set up originally to provide advice on potential impacts on protected sites and landscapes, but the scope is now being extended to cover early advice on protected species licensing issues. Customers will also still have the option of using the Pre-Submission Screening Service for draft licence applications and we are taking steps to increase the availability of this service to meet customer demand.

You may be wondering why Natural England, as a public sector body, is charging for advice. Charging has allowed us to retain a well-respected and in-demand advice service that secures environmental benefits and enables sustainable development. Our optional chargeable services are part of a larger package of reforms and innovations.

For example, we are looking at ways to ease regulation and reduce costs to customers. One illustration of this is a new approach we've created with partners to establish whether Great Crested Newts are present by using eDNA surveys. The eDNA technique is quicker and cheaper for developers, saving up to £1000 per pond surveyed; and it contributes to a better understanding of the distribution of Great Crested Newt populations.

As an organisation responsible for safeguarding and improving England's environment, we decided that any chargeable service should have two bottom lines: it should help us achieve better environmental outcomes and offer an improved customer service. Developers have told us they appreciate having access to expert advice at an early stage in the planning of a project, reducing the risk of delay or additional costs later on. We've had good feedback from users of the service, one of whom explained they found DAS to be *"a simple to use optional service… which guarantees early and meaningful advice to an agreed timescale."*

Anne Armitstead, who works for Natural England on the East Coast, has been advising an energy company who are looking into putting a new pipeline under a SSSI, and also near a Marine Protected Area. *"Ultimately the company said we saved them time and money. We were able to show how to avoid pitfalls so they could put forward a coherent application to the planners. The company got the advice they wanted – and we were able to set out the parameters we could work in – so it reduced the amount of time everyone had to put in to get a good result."*

In the East Midlands, a developer working with Andy Walker, Principal Ornithologist for Arcus Consultancy Services used the Discretionary Advice Service to get guidance from our Senior Ornithological Specialist, Richard Saunders, and his colleague Ryan Hildred. The development proposed is an onshore wind farm, close to a Special Protection Area and a Ramsar site that supports Marsh Harriers and wintering waterbirds. Following discussions, the location of turbines was modified in order to avoid areas of highest Marsh Harrier activity. Richard says *"We are now working with the developer and consultant on a proposal to create new habitat to mitigate for the displacement of Dark-bellied Brent Goose, Golden Plover and Lapwing. The advice will also help the District Council to undertake their Habitats Regulation Assessment."*

To find out more about this advice service, please go to the web pages at www.gov.uk/NaturalEngland and search for 'Discretionary Advice Service'. If you are interested in accessing the service, you can fill in the online request form. Potential customers can also discuss their application with a Natural England Adviser by emailing: consultations@naturalengland.org.uk.

Thames Valley

In the Thames Valley, a developer proposed building 400 new housing units, which risked disturbing a nearby Site of Special Scientific Interest. A Discretionary Advice Service contract enabled consultants on behalf of the developer to engage with Mary Tomlinson and Graham Steven in Natural England's Thames Valley Team. The result of discussions with all partners was a substantial increase in greenspace within the development and funding for a part-time warden who will raise awareness of the importance of the SSSI, and enable the development to go ahead.

For further information

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The Consultants Portal:

Helping Consultants Share Biological Data

Ella Vogel and Rachel Stroud
National Biodiversity Network

"When preparing advice and reports members shall wherever possible, make scientific data collected during the course of their professional duties available to others such as records centres."
CIEEM Code of Professional Conduct 2013

The National Biodiversity Network (NBN), in partnership with CIEEM, has built an online data management portal (www.consultantsportal.uk) for ecologists and environmental consultants to facilitate and enable the management and sharing of their biological data.

Sharing biological records helps create knowledge about the environment which can then be used in environmental decision-making, in education and in reversing declines in native wildlife. All those who observe, record and collect biological information, including all ecological consultants in the UK, have a responsibility to share their data and so contribute to an increasingly complete picture of the state of our environment.

The NBN is the largest partnership for nature in the UK and its membership includes most organisations involved in biological recording and wildlife conservation in Britain. Network members are committed to the collection and sharing of biological data to educate people about nature, inform environmental decision-making, aid conservation management and to monitor the changing state of our environment. Together network members have shared over 110 million biological records via the NBN Gateway (https://data.nbn.org.uk/) to create one of the largest biodiversity databases in the world for any country.

Although an extraordinary achievement, the NBN Gateway still has data gaps; certain geographic areas and taxonomic groups are underrepresented, surveys may be unstructured so affecting potential uses, and duplication of survey effort sometimes happens. Any data gap has implications for environmental management, for educating people and for understanding ecological change. Professional ecologists and environmental consultants can play a significant role in plugging some of these data gaps.

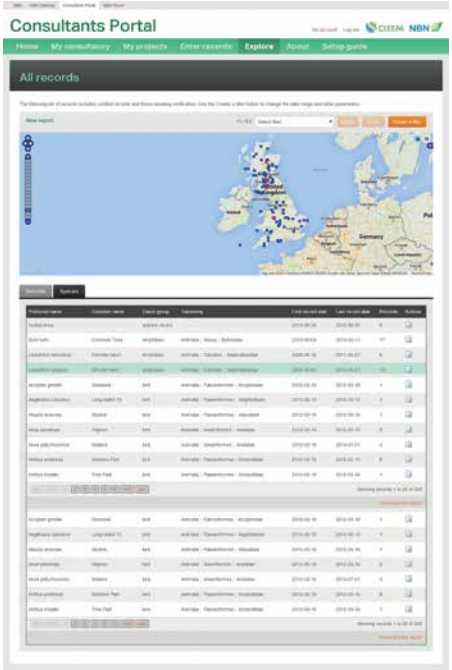
Improving data flows so that they can be used more than once to inform environmental decision-making is a high priority for the NBN. That is why the NBN and CIEEM have worked to create an online data management portal for ecologists and environmental consultants to aid the efficient sharing of biological data.

Some consultants already share their biological data, either with Local Environmental Records Centres (LERCs), with the NBN, or with a county recorder or national biological recording schemes. However, the vast majority of these data remain hidden from view within client reports, used once and then lost or forgotten. Furthermore, the time and cost of digitising biological records is often cited as a barrier to sharing. Consultants also have privacy concerns that affect the likelihood of records being shared.

CIEEM and the NBN have created the 'Consultants Portal' as a free data management and sharing tool for consultancies of all sizes. With spreadsheet upload tools, the capacity to add photos to records and the ability to view and download spreadsheets and maps of your records, the Consultants Portal will especially help CIEEM member consultants to achieve their duty to *"make scientific data ...available to others"*, as is stated in the CIEEM Code of Professional Conduct.

The Portal also acts as a storage cloud, as records can be added and accessed from computer, tablet or phone. Consultants will save time managing data by using downloadable data summary tables and maps through being able to collate records from multiple members of staff.

The NBN Secretariat has worked closely with the Association of Local



Environmental Records Centres (ALERC) to ensure the Consultants Portal meets their needs and that biological records submitted via the Portal will be disseminated via LERCs and National Recording Schemes as required.

The NBN Secretariat is offering free training and support in using the Consultants Portal, either remotely or at your place of work. Please contact the NBN (contact details below) if you would like to know more about the Portal or the training on offer, and how we can support your use of this new data sharing platform.

For all enquiries and further information on the Consultants Portal please contact us at consultantsportal@nbn.org.uk. Finally, if you would like to join the Network, please see our website membership pages at nbn.org.uk.

For further information

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Meeting the favourable conservation status test for European Protected Species:

Natural England's response to Penny Simpson's different approach

Matt Heydon MCIEEM
Natural England

Natural England welcomes Penny Simpson's recent article advocating a strategic approach to European Protected Species licensing[1]. Indeed, as many *In Practice* readers will be aware, Natural England is already piloting a strategic approach to the licensing of great crested newts *Triturus cristatus* in Surrey in collaboration with Woking Council[2].

Under this new approach the conservation status of newts and the impacts of planned development are assessed at a 'landscape' scale[3]. Sufficient compensatory habitat for the scale of development anticipated in a local authority area plan will be put in place in advance by the planning authority, which may recoup the cost from developers who choose to participate in the scheme. By doing so, developers will reduce or completely remove their need to undertake surveys and on-site mitigation measures, including trapping and relocating newts, thereby avoiding the delays and uncertainties sometimes associated with the current individual site-based approach.

This landscape approach to licensing does not require a reinterpretation of the Habitats Directive[4], as Penny advises in her article. Penny argues that Natural England (and the European Commission) too narrowly applies the Favourable Conservation Status (FCS) test to the population of a European Protected Species present on the site of a development. This is not the case. We consider all scales of the population, from 'site' to biogeographic scale, but in practice, the critical scale is the population (i.e. the *"group of individuals of the same species that live in a geographic area at the same time and are (potentially) interbreeding (i.e. sharing a common gene pool)"*[5]) or, if it makes more ecological sense, the meta-population of the species impacted by the proposed activity[6]. In the case of great crested newts we consider the meta-population to be the optimum scale, and in most situations this will be a larger spatial area than the development impact site. This interpretation is consistent with the European Commission's guidance on interpreting the Habitats Directive, which states "… *the impact of the destruction of a breeding site in a rather fragmented amphibian habitat may be better evaluated on site or at meta-population level.*"[7]

It is true nonetheless that licensed mitigation is typically carried out at a site, rather than a metapopulation scale. This isn't, however, because Natural England too narrowly or incorrectly interprets the Directive; it is because licence applications typically describe only the 'population' (or portion of a population) of a species found on the development site itself, and do not provide a wider perspective which would allow the FCS test to be judged at a meta-population scale. In the case of the great crested newt, we hope that the development of the eDNA survey technique will make it easier to map meta-populations for this purpose.

There are also good ecological reasons for seeking solutions that avoid or, failing that, minimise harmful impacts on a population of a protected species where it is currently found – rather than simply opting for off-site compensation as the solution of first choice. This is reflected in both the National Planning Policy Framework's 'mitigation hierarchy'[8] and by the 'no satisfactory alternatives' derogation test in the Habitats Directive. In line with these, the starting point for any analysis of potential solutions necessarily considers options that avoid or minimise the impact on the existing population. We are well aware that there are situations, however, when an off-site solution may offer a more positive conservation outcome than seeking to retain individual animals on or adjacent to a development site. New habitat for great crested newts can be created relatively quickly and straightforwardly which makes the newt an exemplar of a species where an off-site solution may provide better long-term prospects for a local population or allow spatial targeting of new habitat where it will create a more robust or cohesive meta-population[9]. We are discussing scope to amend species licensing policy with the Department for Environment, Food and Rural Affairs to make it simpler to licence off-site solutions where these offer better conservation outcomes. These new policies will be an integral component of the new approach we are currently piloting in collaboration with Woking Council.

Finally, I would like to briefly touch on the evidence cited in Penny's article that the current approach to newt mitigation licensing is failing. The source evidence for this claim is research[10] commissioned by Defra on our behalf to investigate the effectiveness of mitigation methods for newts and inform future improvements. The study examined 12 development sites for which species licences were issued in 2004. When re-surveyed in 2012-13, in three cases (all small size classes) the population had apparently become extinct and in four others it had declined. In the remaining five cases the population was stable or fluctuated too much during the study to determine its status. Eleven sites were judged to require action to maintain 'local FCS' although we don't know if this reflects a deterioration in status, and neither do we know if these populations have fared better or worse than other populations in similar environments over the same period. It is clear, however, that we need to achieve better outcomes to maintain FCS of populations. Indeed, this study reinforces the importance of well-designed mitigation plans, including post-development habitat management and maintenance and monitoring of populations. It vindicates steps taken by Natural England since 2007, following changes to the law which enabled legally enforceable licence conditions with powers of inspection, to improve standards and quality of licensed mitigation plans.

It is also worth reflecting that if the conservation status of great crested newts nationally was judged to be favourable then obtaining a licence to permit activities impacting newts could become considerably less complicated and time-consuming than it is at present.

The landscape approach we are currently piloting in Woking exemplifies Natural England's longstanding commitment to securing improved conservation outcomes for vulnerable species. It is a strategic approach of the kind which Penny advocates, although it is improved knowledge of populations rather than a different interpretation of the law that will be the key to unlocking its potential. We share Penny's enthusiasm for developing a strategic approach and are confident that it will lead to tangible improvements in the outcomes secured for great crested newts and for development.

Notes

1. Simpson, P. (2015). Meeting the favourable conservation status test for European Protected Species: A different approach?' *In Practice – Bulletin of the Chartered Institute of Ecology and Environmental Management,* **89**: 36-40.

2. Woking Council (2015). *Pilot project aims to help Great Crested Newts and reduce construction delays*. Press release 24 August 2015. Available at: www.woking.gov.uk/news?item=000055DAD6D5.C0A801BA.00001869.0016 [Accessed: 19 September 2015]

3. At a 'landscape' scale we are considering an area large enough to assess ecological networks between populations or meta-populations of a protected species. See Opdam, P., Steingrover, E. Vos, C. and Prins, D. (2002). *Effective protection of Annex IV species of the EU Habitats Directive: The landscape approach*. Alterra report No. 590, Wageningen. www.ocs.polito.it/biblioteca/ecorete/590.pdf

4. Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive').

5. EU Commission (2007). Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. Page 60 paragraph (43). http://ec.europa.eu/environment/nature/conservation/species/guidance/pdf/guidance_en.pdf

6. see note 5: Page 18 paragraph (50) and Footnotes 34 and 115.

7. see note 5: Page 61 paragraph (46).

8. National Planning Policy Framework, paragraph 118: Available at: http://planningguidance.planningportal.gov.uk/blog/policy/achieving-sustainable-development/delivering-sustainable-development/11-conserving-and-enhancing-the-natural-environment/#paragraph_118 [Accessed: 18 September 2015]

9. see note 3.

10. Lewis, B., Griffiths, R.A., Wilkinson, J.W. and Arnell, A. (2014). *Examining the fate of local great crested newt populations following licensed developments*. Defra Report WM0321. Available at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=17856

For further information

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Letter from Member

EPS Licensing – An Unsatisfactory Situation

Peter Middleton MCIEEM
Middleton Ecological Consultancy

One of the most difficult jobs for a consultant ecologist is European Protected Species (EPS) licensing. It is a procedure that I find very difficult, however, I am not alone. Indeed, some ecologists have given up on it altogether and admitted defeat in favour of sub-consultancy work in order to avoid the difficult, complicated and indeed flawed procedure that operates in England. In spite of recent changes to the process for bats, consultants remain frustrated and disappointed.

Nevertheless, recent changes have been welcome, especially in regard to the new method and reasoned statements, and at least it appears that Natural England are aware that there is a need for change. However, in reality, the changes are not good enough to appease disgruntled ecologists like myself.

The new Low Impact Class Licence is a step in the right direction, but even this has been implemented in a way that has come under considerable criticism. Why, when the purpose of this is to deal with low numbers of common species should Natural England require lots of experience from applicants, and therefore is the Earned Recognition policy (with input from CIEEM) really appropriate? The process needs to be made easier for all consultants. Furthermore, some areas of the new Low Impact Class Licence are a real cause for concern, especially the apparent shift away from mitigation. It has therefore gone more than full circle. Consultant ecologists were once told that bat boxes were not sufficient mitigation and there should be no net loss. However, with the new Low Impact Class Licence, surprisingly, no mitigation is required. And whilst the planning system under the aims of chapter 11 of the National Planning Policy Framework could potentially fill this gap, as everyone knows, once planning is approved, the biodiversity recommendations given in ecology reports are rarely delivered. Therefore, why should anyone believe that it can work in this case? This new policy that is threatening the conservation of bats is a terrible retrograde step. Conservation should always be paramount and the changes that are required are for a less onerous procedure that is much simpler for everyone involved but with conservation at the centre of its ethos.

With the standard EPS licence application there appears to be no flexibility and Natural England wildlife advisors rigidly follow a set of rules that do not lend themselves to a discipline like ecology. However, on the other hand, one of the biggest problems with the Natural England processing of EPS applications is inconsistency, and two identical licence applications can result in a different outcome, one being returned for further information, whilst the other is approved. This cannot be right.

I have often vented my frustration at Natural England licensing staff and I have openly disagreed with some of their decisions, especially recently as there appears to be a whole new meaning to the word 'proportionate' and what appears to be a deliberate dilution of mitigation in general. Worryingly, this is the thin edge of the wedge and unless you can prove the presence of a maternity roost, nothing else matters. It is also apparent that Natural England staff are no happier with the system than are consultant ecologists and I have a great deal of sympathy for them because they have to try and implement a process that is just not working. It is too time consuming for them as well as us because it can take two days for an ecologist to prepare a EPS licence application and who knows how many hours for Natural England staff to process it. This is not good for bat conservation, ecologists, Natural England resources or indeed the paying client.

So what needs to change? Firstly, I would like to see CIEEM be more influential and lead an initiative that will result in a less onerous licence application procedure that can deliver the simple aims. Indeed, considering the impending referendum of EU membership, it would be prudent to make the changes sooner rather than later, because if we were to leave the European Union, it would be difficult to argue the case for protecting species in the aftermath using the present system as an example. Rather we get it right now, because the risk is too big to take. This should therefore begin by forming a working group of a variety of people with participants from Natural England, CIEEM, Bat Conservation Trust and the ecology sector (consultant ecologists). With the most important members being the latter two. The ensuing changes would result in less stress in all of our lives, but more importantly, it should result in a fit for purpose licensing procedure capable of delivering the conservation of bats, which is indeed the fundamental principle of protected species licensing.

Response from Natural England overleaf.

Response from Natural England

Natural England welcomes the opportunity to respond to Mr Middleton's points about the protection of bats. We are pleased that he recognises the improvements that we have recently made to the licensing system. Mr Middleton wants us to go further still. It's an ambition that we share! We recognise the strengths of a strong, workable system drawing in full on the contributions of all parties to good effect to achieve the favourable conservation status of bats.

The information required by the licensing system can be demanding. But it is important that the information supplied enables the proper scrutiny of projects in which the detail makes all the difference to EPS. The challenge in improving the system is to focus the detail it requires on the cases which may have greatest impacts on EPS. We aim to make the application process more streamlined, so that the level of information required on any project and the depth of assessment better matches the level of risk.

The Bat Low Impact Class Licence (BLICL) is, of course, a big step in that direction. It requires far less information to be presented than that for an individual mitigation licence. It places a high level of trust in registered consultants to undertake appropriate survey and assess impacts. It gives them flexibility in how works are undertaken on the ground yet provides them with strong protection against legal challenge. Mr Middleton expresses concern that the eligibility requirements for being registered as a consultant in the BLICL are too onerous and, at the same time, that the changes have watered down requirements for mitigation. In fact, BLICL has not changed requirements for mitigation. We believe we have got the balance right, creating a robust and efficient class licence, which is risk based and rewards good compliance by reducing the regulatory burden on customers. But we will, of course, continue to monitor its use and make any necessary changes stemming from that monitoring and from feedback generally.

We note Mr Middleton's concern about consistency. Again, we are satisfied that the system we have in place assures that. To impose additional checks and reviews would act against the flexibility which Mr Middleton also values and which enables licences to be tailored to fit the specific circumstances of individual cases.

In terms of future changes, we are currently working with Defra to consider how licensing policy and decision making can be improved in line with legislation, as well as the National Planning and Policy Framework. We are keen to work closely on this with CIEEM, notably for instance through Defra's Great Crested Newt Task Force, as a precursor to more detailed discussion. We therefore welcome Mr Middleton's suggestion of joint working with CIEEM and wholeheartedly agree with him on how essential that is.

Nathusius' pipistrelle © Paul van Hoof

Impact Risk Zones, SSSIs and EIA

A Clarification for Ecologists and Planners

Claire Wansbury
FCIEEM CEcol CMLI CEnv
Atkins

Michael Knight
Natural England

Natural England's new Impact Risk Zones (IRZ) were described in the March 2015 issue of *In Practice*[1].

These were created to assist Local Planning Authorities in judging whether a proposed development in a particular location might have a negative impact on a Site of Special Scientific Interest (SSSI) and whether Natural England should be consulted on the application. The boundaries of IRZ are freely available on the MAGIC website[2]. IRZs are also very valuable to assist ecologists when applying their professional judgement in considering whether negative impacts could arise from a proposed development on a SSSI. Each SSSI can have several IRZ varying in distance from the SSSI, from 50m to 10km, depending on varying types of development and the sensitivities of the individual SSSI.

Screening to decide whether development requires Environmental Impact Assessment (EIA) depends on the type of development and other factors, including whether it is within a *"sensitive area"*. The creation of IRZ resulted in uncertainty about their status among planning colleagues as to whether the IRZ themselves should be considered *"sensitive areas"* as well as SSSIs, a critical decision in EIA screening. The confusion arises because the predecessor of IRZ, the rarely used formal Consultation Zones, was considered a *"sensitive area"* as defined in the Highways (Assessment of Environmental Effects) Regulations 1999[3], due to the reference to them in the Regulations to Article 10 of the Town and Country Planning (General Development Procedure) Order 1995[4].

SSSIs are *"sensitive areas"* in EIA terms. However, IRZ are not. This is because Article 10 of the T&CP (GDP) Order 1995 has been superseded by the Town and Country Planning (Development Management Procedure) (England) Order 2015[5]. This has removed the requirement to consult Natural England on proposals within notified consultation zones around SSSIs. The requirement in Schedule 4 of the 2015 Order, Table (w) is now to consult on *"development in or likely to affect a site of special scientific interest"*[6]. Further information on EIA screening and the definition of sensitive areas[7] is available in the Planning Practice Guidance on Environmental Impact Assessment[8].

Natural England's advice is that Impact Risk Zones around SSSIs are a tool to guide planning and highways authorities and developers in considering whether a development proposal is likely to affect an SSSI. The IRZ themselves have no formal status and do not therefore fall within the definition of a *"sensitive area"* under the current EIA Regulations.

Notes

1. Middlehurst, S. and Knight, M. (2015). Impact Risk Zones: Natural England's new online tool to assess development risks to Sites of Special Scientific Interest. *In Practice – Bulletin of the Chartered Institute of Ecology and Environmental Management*, **87**: 28-31.

2. http://magic.defra.gov.uk/

3. The Regulations referred to areas notified to Local Planning Authorities in accordance with Paragraph (u)(ii) in the table in Article 10 of the Town and Country Planning (General Development Procedure) Order 1995, which states: *"development within an area which has been notified to the local planning authority by the Nature Conservancy Council for England… and which is within two kilometres of a site of special scientific interest of which notification has been given or has effect if given as aforesaid"*.

4. http://www.legislation.gov.uk/uksi/1995/418/contents/made

5. http://www.legislation.gov.uk/uksi/2015/595/contents/made

6. http://www.legislation.gov.uk/uksi/2015/595/schedule/4/made

7. http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment/screening-schedule-2-projects/interpretation-of-project-categories/#paragraph_032

8. http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment/

For further information

Contact Claire at:
Claire.Wansbury@atkinsglobal.com

Update from the CIEEM Advisory Forum:

Improving Professionalism within Ecologists

Karen Colebourn FCIEEM and David Tyldesley FCIEEM

The two issues which piqued most interest at the Oct 2015 Advisory Forum both related to CIEEM's continuing efforts to nurture our profession to maturity. The first ostensibly addressed increasing membership and began by (re)considering ways the Institute could attract new members by emphasising the benefits of being a Member. However, the tempo increased when David Tyldesley made the very good point that the value of a professional institute should be self-evident to all ecologists, as it appears to be to planners and landscape architects.

Whichever part of the profession we serve, we all should not only be eager to join, but be actively seeking ways to assist the Institute to deliver training, guidance and standards – for the sake of biodiversity if not our own professional standing. Non-members should not be asking *"What can the Institute do for me?"* but rather *"What can I do for the profession and the Institute?"* He offered to lead on an article aimed at pricking the conscience of those parts of the profession which are under-represented, so watch this space.

The second stimulating debate was about our long-held, but as-yet-unrealised ambition to develop our technical expertise by learning more from each other, especially in respect of building on our individual professional experiences of mitigation measures that appear to work well, and those that do not. Having examined various existing approaches, the Professional Standards Committee and Governing Board recommended that CIEEM should seek to work more closely with Professor Bill Sutherland and his online journal *Conservation Evidence*.

We agreed that Bill should be invited to write an article for *In Practice*, encouraging members to contribute. However, the point was made that *Conservation Evidence* only publishes scientific papers setting out the results of trials comparing the effectiveness of different conservation interventions. Many of CIEEM's members will not have the opportunity to undertake such experimental work, but might have case studies which they could share. The Advisory Forum felt that these too could provide useful information for members, if properly edited. If members submitted even anecdotal evidence of success, or otherwise, in measures that are widely used, or which were innovative, patterns may emerge that could add significantly to the value of more conventional and rigorous research, or help to focus future research on areas of uncertainty. The Forum urged the Governing Board to look into how this may be taken forward, for example by development of a case study part of the website and a technical group to manage the content.

Please contact the following members of the Forum if you have any observations about the points above, or would like the Forum to consider a particular issue.

For further information

Contact Karen at:
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Contact David at:
david@dt-a.co.uk

Raising Standards Project – The (Almost) Final Report

In 2012 the CIEEM Professional Standards Committee (PSC) launched a project to turn anecdotal evidence of significant poor standards of professional practice within the industry into tangible evidence of the scale and nature of the problem which could then be addressed through targeted action. The project sought to obtain views from members and non-members, including those of statutory authorities and non-governmental organisations, through online surveys and through facilitated workshops held throughout 2013 in England, Ireland, Scotland and Wales. Participants were asked to explain not only as to the principal causes for poor standards of work but, importantly, the measures they thought could be put in place to raise these standards.

The results from the surveys and workshops were collated into an interim report that was presented by PSC to the Governing Board in January 2014. In summary there was little hard evidence of a significant issue of poor standards of professional practice, only isolated instances. However the fact that a substantial number of respondents perceived there to be a problem, and that this coloured their view of the profession, did suggest that a) action could be taken to improve the areas of most concern, and b) we needed to be more positive about the good that the profession does. It should also be acknowledged that there are likely to be many people who, because they did not perceive there to be a problem, did not take part in the consultation.

A list of possible actions and initiatives was constructed from the consultation responses and reviewed by the Governing Board's three Standing Committees – Membership Admissions Committee (MAC), Training, Education and Careers Development Committee (TECDC) and PSC – since they would be responsible for overseeing many of the agreed actions. The Governing Board was gratified to note that many of the ideas and project proposals had either recently been implemented just prior to the consultation or were in the process of being implemented. However there were also some new suggestions such as guidance to educate clients on what to expect from their ecological surveyor and finding ways to share evidence on effective mitigation. Box 1 (overleaf) shows all of the initiatives that have been implemented since January 2013 that are contributing to raising standards.

Some ideas, whilst welcomed by the Governing Board, are more challenging to implement. They may be beyond the resources of CIEEM or difficult in practice to undertake effectively. Examples include:

- Reviewing evidence of work/reports as a free or chargeable service to members and/or as part of ongoing monitoring of members work.
- Encouraging enforcement of planning conditions and EPS licence requirements by LPAs and SNCOs.
- Ensure that guidance produced by others is consistent, simple and proportionate – although we do try!

Raising standards is an ongoing process. It is part of CIEEM's *raison d'etre* and, if you look at the Strategic Plan (www.cieem.net/strategic-plan), you can see that there are a number of planned initiatives over the next three years that PSC and the Governing Board believes will continue to help members improve their practice. But we would also like to know what members think **now** about the standards of practice within the profession and any further ideas you may have for work that CIEEM could do to raise standards

If you would like to share your thoughts please do so via the following online survey www.surveymonkey.co.uk/r/raisingstandards. The deadline for responses is 16 January 2016.

Box 1: Actions and Initiatives Implemented Since January 2013 Which Contribute To Raising Standards

When	What
January 2013	Launch of new Competency Framework to provide clarity on what levels of competence are expected of members working in different roles
February 2013	New degree accreditation scheme launched, promoting programmes with good track record in practical fieldwork, including species and habitat identification skills
April 2013	Contract Advice Notes 1 updated and Contract Advice Notes 2 published as part of the members' Professional Guidance Series
June 2013	Revised Code of Professional Conduct published
August 2013	New British Standard supported by CIEEM, *BS42020: Biodiversity – Code of Practice for Planning and Development*, is published by the British Standards Institute
September 2013	New Chartered Ecologist (CEcol) award launched with applicants required to demonstrate high level of competence as set out in the Competency Framework. CEcol complements the existing Awards of CEnv which has been awarded to over 900 CIEEM members
October 2013	New CPD requirement introduced (30 hours rather than 20 hours) and new random auditing process introduced. Failure to comply with audit or CPD requirement now deal with as a potential beach of the Code of Professional Conduct
November 2013	New higher profile Awards scheme launched to celebrate more good practice in ecological and environmental management
November 2013	Training in proper use of biodiversity data is introduced
December 2013	New Guidance on Good Working Practices published
April 2014	Criteria for membership applications/upgrades changed to be based on assessment of competence levels in Competency Framework
May 2014	Commence work with Natural England on opportunities for Earned Recognition for ecological consultants in respect of EPS licensing
June 2014	Revised Disciplinary Procedures published
December 2014	Bats Low Impact Class Licence Scheme launched with CIEEM support
February 2015	New Guidelines on Ecological Report Writing published and new training courses introduced by Autumn 2015
March 2015	Work begins on strategies for sharing evidence in effectiveness of mitigation
April 2015 onwards	Expansion of Professional Development Programme to cover more areas of the Competency Framework and to continue to improve geographical coverage of courses
September 2015	Guidance for homeowners and smaller developers on different bat survey requirements and what they can expect from a CIEEM member is published. More generic guidance currently being drafted.
November 2015	Coaching and Mentoring training introduced
Ongoing	Online CPD recording and CPD planning tool launched for members
Ongoing	Regular articles in *In Practice* to raise awareness of professional standards issues and provide advice to members
Ongoing	Guidance on undertaking data surveys is in draft

Chartered Members

100 Chartered Ecologists!

It is with great pleasure that I can report that we have now awarded individual Chartered Ecologist status to 104 of our members. This is a significant achievement. The award provides professional recognition for the high level of standards and attainments demanded of registrants and it provides additional credibility and standing between different professions. It demonstrates a high performance standard giving others confidence in your abilities. The high standards setting the bar for being a Chartered Ecologist in turn enables holders to demand higher standards of others and to be proud of their career as a professional ecologist. Those of you who are Chartered Ecologists are very important to CIEEM – helping us to demonstrate the highest standards of professionalism in our sector. We look forward to welcoming more of you to Chartered status in the future.

Penny Anderson
CEcol CEnv FCIEEM
Chair, Chartered Ecologist Registration Authority

Challenges for Conservation: The views of the first Chartered Ecologists

The award of Chartered Ecologist status recognises the skill, knowledge and effective application of ecology by senior professionals, who are expected to be among the most experienced members of the profession. They should have a deep understanding of ecology, be capable of the critical evaluation of scientific evidence, and be able to communicate key ecological concepts and ideas to a wide range of audiences.

As part of the process of applying for Chartered Ecologist status, applicants are interviewed by existing Chartered Ecologists. These test applicants' skills and capabilities, and applicants are asked to identify one of the biggest challenges facing ecology (and ecologists), explain the challenge and identify some means to tackle that challenge. This enables interviewers to gauge the applicant's knowledge and understanding of an issue, but it soon became apparent that the range of answers was interesting in itself. We now have over 100 Chartered Ecologists, and it seemed an appropriate time to assess the 'hot' ecological issues of our time, based on the views of ecologists working (mostly) in the UK. This echoes the work of Bill Sutherland and colleagues (e.g. Sutherland *et al*. 2009 *Conservation Biology* **23**: 557–567) in using expert groups to identify major ecological challenges.

To undertake this assessment, CIEEM staff summarised interviewers' notes from each application, and provided anonymous answers for analysis. These ranged widely in detail and complexity; some offered single-issue challenges, some combined several concepts and issues. The analysis was simple; the primary issue was assessed and categorised first, then secondary issues were categorised and added to the overall listing, though issues that ranked highly as primary issues changed rank little with the addition of the secondary 'marks'.

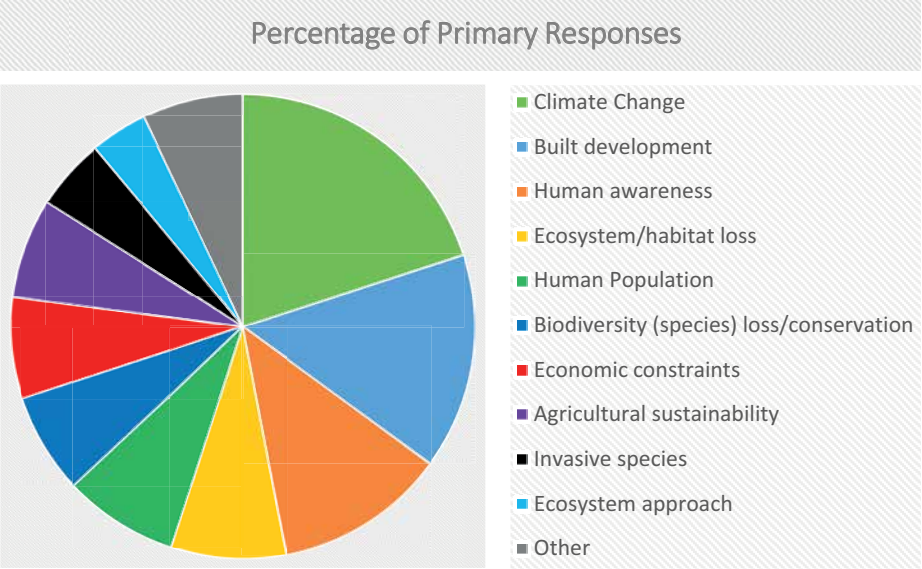
So, what are the Chartered Ecologists' top ten hot topics?

1. **Climate Change** (20% of primary responses). We were perhaps surprised that as few as 20% selected climate change. It may be simpler to base a five minute explanation on more specific issues with more direct links to the specific expertise of the interviewees.
2. **Built development** (15%). Many of the early CEcols are involved in development management and control, as consultants or contractors, and they offered very specific views on changes needed to tackle the problems in this area.
3. **Human awareness** (12%). Applicants suggested that we have a major challenge in getting the public (from politicians to land users) to understand ecology, and what we are doing to our planet. The message is clearly that without human awareness, we face an uphill struggle.
4. **Ecosystem/habitat loss** (8%). Applicants seemed quite specific in separating habitat and species conservation issues. Often the tools proposed for habitat conservation revolved around an ecosystem approach, as opposed to more specific targeted work for species conservation.
5. **Human Population** (8%). This 'unspoken' big issue was raised by eight brave applicants, but more in the context of UK population pressures on biodiversity conservation.
6. **Biodiversity (species) loss/ conservation** (7%). Raised in both general and specific ways, species conservation is undoubtedly the daily subject area for many ecologists, even in these days of the ecosystem approach.

7. **Economic constraints** (7%). Raised very much in the context that we cannot tackle major issues in the absence of the finances required to do so.
8. **Agricultural sustainability** (7%). Clearly recognised as unfinished business, the challenge of producing our food sustainably remains substantial.
9. **Invasive species** (5%). Described by the Convention of Biological Diversity (CBD) as the second biggest conservation issue, this lower rank perhaps reflects the specificity of the matter in the UK.
10. **Ecosystem approach** (4%). Summarised as: How do we make use of the ecosystem approach (and natural capital) as a means of developing the concept of sustainability?

Other challenges raised were: management of ecological data/information, land use management, use of the Natural Capital concept, tackling the ecological skills gap, effective habitat creation and management, and nitrogen deposition, as well as habitat fragmentation, soil erosion, deforestation, and freshwater ecosystem damage. These latter tended to be used as proximate examples of a problem; specific issues raised in respect of climate change or built development, for example.

So, as ecologists we have a huge range of challenges to tackle; maybe this analysis will help us prioritise our activities. In this short note, we can only scratch the surface of the responses; more detailed analysis may follow after the first 200 Chartered Ecologist awards.



Ian Bainbridge FCIEEM
Member, Chartered
Ecologist Registration Authority

New Chartered Members

New Chartered Ecologist Members:
Mrs Jenny Roberts CEcol MCIEEM
Mr Mark Woods CEcol MCIEEM
Ms Victoria Forder CEcol CEnv MCIEEM
Dr William Trewhella CEcol MCIEEM
Ms Elaine Richmond CEcol MCIEEM

New Chartered Environmentalist Members:
Mr Simon Wiltshire CEnv MCIEEM
Mr Richard Gowing CEnv MCIEEM
Dr Joanne Holland CEnv MCIEEM
Mr James Davies CEnv MCIEEM
Ms Helen Craig CEnv MCIEEM
Dr Gemma Bell CEnv MCIEEM
Mr Roger Martin CEnv MCIEEM
Mrs Lorna McDonald CEnv MCIEEM
Miss Katherine Harrington CEnv MCIEEM
Mrs Ruth Voigt CEnv MCIEEM
Miss Penelope Foster CEnv MCIEEM
Dr Sarah Randall CEnv MCIEEM

New Registration Officer

We are very pleased to welcome Katherine Birch as the new Registration Officer.

Katherine supports the Chartered Institute's work as part of the Membership Team by managing the administration and assessment of applications to join the Register of Chartered Ecologists and the award of Chartered Environmentalist.

Prior to joining CIEEM in September, Katherine spent the last few years working as an administrator in a busy school environment and also as the Clerk to the Board of Governors.

The 100th Chartered Ecologist

Will Trewhella CEcol MCIEEM

Principal Ecologist, Arcadis

I started my career as an applied ecologist working on the population dynamics of foxes and badgers in relation to their role in the spread of wildlife disease, worked on the conservation of fruit bats in the tropics for three years, have been involved in developing computer-mediated biodiversity education resources, and finally settled on a life in consultancy. I am based in Stroud (working in a beautiful Cotswold former mill building in the world's first Bee Guardian town, though I seem to have spent most of the last few years on the Suffolk coast or the side of the A40 in south west Wales) working for Arcadis, a major UK and Global consultancy, with ecologists in other UK offices including Bristol, Cardiff, London and Warrington.

Why did you join CIEEM?

I joined CIEEM in 2010 as it seemed to be the nearest thing to a trade union for ecologists. The CIEEM mission statement – *To raise the profile of professional ecological and environmental management and to promote the highest standards of practice for the benefit of nature and society* – neatly sums up why we should all be members.

Why did you apply for Chartered status?

At Arcadis all our senior staff are Chartered so, having been instrumental in helping develop the Competency Framework for CIEEM in 2012, I had no excuse not to go for it and use the Framework personally to assess my competency as a potential Chartered Ecologist. The company bonus scheme for being Chartered was, of course, totally irrelevant…

What was the process like?

I contemplated applying for Chartership in the first phase of applications at the end of 2013, and made an initial stab at the process but found it a bit challenging at the time and so did not submit. When I came to apply properly this spring, once I actually sat down and read through the application forms thoroughly, I realised, it was not actually too daunting a process. That is not to say it was easy – it was not and I guess should not be – and it was challenging to come up with the full suite of completed competencies, but the whole process is clearly laid out and well-structured.

Having successfully got through the Stage 1 process, I felt that if I could not talk enthusiastically about my work as an ecologists and justify what I have achieved over more than 30 years in the business, I should not have applied. It was actually difficult to prepare the answer for the first question from the review panel to last only five minutes – having come up with the idea of answering this question with reference to topical news items, my first draft of this would have gone for over 10 minutes. So it took a bit of frantic editing to come up with my final statement. It was reassuring, having been able to prepare this and get it behind me successfully, I was more relaxed for the rest of the interview. I was the first person to face the interview panel via Skype, rather than face to face, but this proved to be a straightforward and undaunting process, having had the opportunity to check out the technology and connectivity in advance.

How has achieving Chartered status impacted on the types of work you undertake?

It has not yet – but I live in hope that I may be doing fewer mid-summer dusk and dawn bat surveys in the future.

Would you recommend applying for CEcol to your peers and colleagues?

Yes definitely – I think having been initially reticent about the process (the amount of work involved and feeling that I might struggle to achieve all the competencies) I would like to reassure my colleagues that it is worth the effort and that they should apply when they are ready.

What is the best thing about your job?

The first great crested newt of the season, any time I hear a horseshoe bat on a bat detector, compliments on our work from clients (they do sometimes happen), and a pint with my work colleagues and friends (they can be the same people!) at the end of the week.

If you are interested in submitting your own profile please contact the Registration Officer (KatherineBirch@cieem.net). Katherine is particularly keen to hear from Chartered members working in academia and the statutory agencies.

Earned Recognition in Practice

Jane Morton
Senior Adviser, Customers and Communications, Natural England

Natural England has been working in partnership with CIEEM to complete a pilot project which embeds an earned recognition approach in species licensing.

Earned recognition for species licensing delivers a range of benefits including better quality licensing regimes proportionate to the level of risk, reduced regulatory costs and speedier decisions.

CIEEM and Natural England working together

Natural England's close work with CIEEM over recent years, coupled with CIEEM's proven track record in improving professional standards in the ecological and environmental management fields, made them the natural choice to work with in developing an Earned Recognition project.

The partnership of CIEEM and Natural England staff was supported by a grant from the Regulatory Innovation for Growth Programme (overseen by the Better Regulation Delivery Office) to test earned recognition.

Initially, we worked to understand likely customer demand for an earned recognition approach, explored which areas of species licensing might benefit, and sought to determine the feasibility of benchmarking the skill and experience levels consultants would need to hold licences based on earned recognition. The final report recommended developing the approach for two class licences: the Bat Low Impact Class Licence (BLICL) and Bats in Churches class licence.

Focus on the Bat Low Impact Class Licence: An Earned Recognition Approach

Following the partnership's recommendations, the decision was made to develop the earned recognition approach for the BLICL. A pilot of the licence had already taken place to test the robustness of the streamlined process for lower risk, low impact activities, and to understand the cost savings it could deliver to customers.

Over the 12 months of the initial pilot, this was estimated to be in the region of £190k, with 444 weeks of possible delays to development avoided.

Responding to feedback from this pilot, Natural England refined some internal processes and made minor licence modifications, before arranging training for those interested in registering as consultants under the licence.

The BLICL permits activities for lower risk, low impact activities, replacing the need to apply for some individual licences for bat roosts of low conservation significance, affecting small numbers of no more than three of the more common bat species. This risk-based approach streamlines the licence process whilst ensuring legal compliance, and maintaining the favourable conservation status of the licence species.

Registered consultants are expected to undertake sufficient surveys, and provide minimal information when applying to register a site under the class licence. In addition, they must make a judgement about when it is appropriate to register a site under the class licence and when an individual licence should be applied for. If the consultant is satisfied the site is suitable they submit a site registration form to Natural England for assessment. If the licensing tests are met, the site is registered. During the pilot, the aim was to turn around registrations in 10 working days; the actual average was six working days, considerably less time than for individual licence applications.

The application process to register for the training assessed competence and skill, with the training providing the specific elements needed to enable registration for this new licence.

Initially, three two-day training events were held, delivered by an external consultant, with Natural England specialists providing technical support. Those attending shared their opinions on everything from the selection criteria to the interpretation of the three licensing tests. Their feedback was invaluable in further refining the earned recognition approach.

A further three training events have been held more recently; feedback from these will be considered in any further review of the application, selection and licence processes.

A total of 181 sites are now registered, with 105 consultants having successfully passed the assessment and registered to use the class licence.

Next steps

Natural England is now developing the second stage of earned recognition for BLICL, which will include compliance checking and continued professional development for registered consultants.

A third series of training is pencilled in for early 2016, and will be advertised in Natural England's EPS newsletter (www.gov.uk/government/publications/wildlife-licences-european-protected-species-newsletters). We're also looking at putting in place a consultant waiting list, with courses running when there is sufficient demand.

Earned recognition – the future

Natural England is now looking at other opportunities to take an earned recognition approach and plans to introduce a similar great crested newt class licence next year.

A pilot class licence for Bats in Churches will be launched in December; this will be a higher-risk licence to manage bats in high conservation status roosts. Natural England will also issue a class licence for developments involving badgers (summer 2016).

Natural England uses an earned recognition approach when developing Organisational Licenses, which takes into account the recruitment, training, supervision and quality assurance processes in place in an organisation, as part of an assessment of their suitability to operate the licence. The next step is to investigate how a similar approach might be developed for consultancies and individual consultants.

Safe and Responsible Use of Social Media

Jason Reeves MCIEEM
Policy and Communications Manager, CIEEM

Ellie Strike CEnv MCIEEM
Environment Agency
Co-Chair of CIEEM's Professional Standards Committee

Phil Baarda CEcol CEnv MCIEEM
Policy and Advice Officer – Land Use and Woodlands, Scottish Natural Heritage
Member of CIEEM's Professional Standards Committee

Introduction

Social Media has become a part of daily life for many of us. There are huge benefits to engaging with social media, but also risks. Your organisation, if you're part of one, may have its own policy about use of social media. You may, of course, be using social media in a private capacity, but even so, as a professional, the fora you use to communicate with other professionals will still require adherence to a certain standard of approach and use. There is a wealth of guidance on social media 'etiquette' available online but this article reminds members of some of the things to be aware of so that we can make the most of the benefits, whilst avoiding the pitfalls.

For our purposes, 'social media' means web-based sites and applications that enable you to create and share content, or to participate in social networking. This includes, but is not limited to, Twitter, LinkedIn, Yammer, Facebook, Google+, MySpace, FourSquare, Pinterest, YouTube, Vimeo, Reddit, Bebo, Flickr, Instagram and blogs.

Each social media platform has its own strengths and weaknesses in terms of their ease of use, content type, popularity, privacy and user expectations. CIEEM currently uses: LinkedIn, Twitter (@InstEcolEnvMan), YouTube and Vimeo.

Benefits

Last year OfCom reported that: *"The average UK adult now spends more time using media or communications (8 hours 41 minutes) than they do sleeping (8 hours 21 minutes – the UK average)"* (The communications Market Report, Ofcom, August 2014 – http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr14/uk/). As a result social media clearly has huge potential for the Institute and its members, in terms of its reach for both communicating and engaging with a much wider audience. These benefits include:

- Promoting and raising awareness of CIEEM and its benefits to members, prospective members, related professions and the general public.
- Contributing responsibly to live debates on issues relevant to our profession.
- Encouraging active engagement with the Institute, for example, through committees, events and training.
- Supporting the development and maintenance of networks amongst our membership, and more widely.

Risks

With the rapid growth of social media, some of the checks measures have not always been in place before risks have emerged. There has been much public discussion about the potential risks to personal safety, and data security, but there are also risks in a professional context.

Most social media interaction can start innocently enough, but where the written word is open to interpretation – just as with email and any other written communication – things can quickly escalate and result in reputational risks. Sometimes this is limited to the individual, but it can also reflect on their employer or other affiliated organisations. Insensitive remarks can jeopardise personal and/or professional relationships.

The 'worst case' scenario is that ill-thought out communication in such a public arena could result in, or be part of, a legal case. Alternatively it could result in a case being brought before the Information Commissioner, or may result in CIEEM pursuing disciplinary action against members. For any individual, or organisation affected this may have knock-on financial and business delivery implications. Remember that social media moderators reserve the right to remove improper and inappropriate posts.

It is also worth being aware of the time it can take to maintain an effective online presence. It can become very distracting, and quite addictive!

Usage

Many of the rules that apply to using traditional forms of communication and engagement also apply to social media. So, when thinking about using any form of social media it is important to consider who your audience is, and what you want to achieve by engaging with them. This will help you to prioritise and choose the

platforms that will have maximum effect, as they all have slightly different applications. For example, Facebook is less formal and may be more appropriate for personal use, whereas LinkedIn tends to be more formal, and may be better in a professional context.

Think about the capacity in which you are engaging. For example, if you are using a personal account you may feel you have more freedom to express personal views. If you are using a work account, or are identifying yourself as a CIEEM member (this may apply to some personal accounts too), you will need to think more carefully about the views you are expressing, and the impact they may have for you, your organisation and/or the Institute's reputation.

It is important to consider the reach and instantaneous nature of social media. It is an effective way of communicating to a lot of people quickly, but the written word can be open to interpretation, and it is not so easy to 'un-say' something once it is out there. Read through what you have written and think about its potential impact before hitting that button.

If you are knowingly representing CIEEM (or could be perceived to be), or are acting in a professional capacity (including communicating about the profession), remember that your Code of Professional Conduct applies. Members must not knowingly or recklessly post anything on a social media site that may bring the Institute, or our profession, into disrepute, or otherwise be a breach of the Code of Professional Conduct. This does not mean that challenging discussion and debate cannot be aired on social media (indeed it is one of the most interesting uses of the tool) but rather that good judgement needs to be used in how a subject is aired. Common sense goes a long way, and a useful check may be to ask yourself *"would I be happy saying this to the individual/group face-to-face, or in a room with my boss or an audience present?"* If they are your personal views and not those of your organisation – have you made that clear? Is it potentially harmful or offensive to others? Are you sure of your facts? Or does it mean that maybe you'd be better saying nothing at all? Be aware of potential conflicts of interest.

Issues relating to nature conservation are often of interest to the general public and the media. It is therefore important to recognise that anything you post on a social media site may be obtained and published elsewhere, and could be misreported or misinterpreted, even if you had intended the content to be uncontroversial.

Recent legal cases have established that anything posted on a social media site, regardless of the intended recipient, may be considered public information. Remember that messages that are intended to be private, or for a particular person, can be forwarded on or published without your consent. Take care what you post, when and to whom, and always be confident that if a message were to be published it does not leave you, or others, open to criticism or legal liability.

You should always consider your own personal safety, and the security of your/your organisation's information when using social media. Think twice before divulging personal information, and be careful about what other information you share. Some data and information may have very specific legal requirements surrounding its sharing, and you should be particularly careful about sharing information about, or belonging to, third parties.

Any discrimination, harassment, bullying or the posting of false, defamatory, copyrighted, obscene, deliberately misrepresented or legally objectionable information may leave you open to legal, or disciplinary, action. So you should, as far as is reasonably possible, be certain of the accuracy and legitimacy of any information before posting it.

Avoid direct criticism of people, or their work. Think about how you can word feedback so it is viewed as constructive and respectful. Again, it can be helpful to think about how you might read comments if you were on the receiving end. In some instances it may be better to communicate directly with those concerned, rather than in a public forum.

If in doubt, then it may be safer not to post your views. And remember that the world of social media is ever-evolving, so keep up to date with new and revised guidance on usage as it emerges.

Having said all of the above, there are huge benefits to using social media. Overall the benefits far outweigh the risks in most instances, and social media is an invaluable tool for personal and professional development. As with everything, employ your professional judgment and take a risk-based approach – don't be afraid to join the debate, embrace this exciting way of communicating to help build and promote our profession.

About the Authors

Jason Reeves is CIEEM's Policy and Communications Manager. He uses a variety of social media platforms; personally he uses Twitter, Facebook, Google+, Flickr, Youtube and Vimeo; and professionally he uses LinkedIn and Twitter (@InstEcolEnvMan).

Contact Jason at:
jasonreeves@cieem.net

Ellie Strike (née Seaborne) works for the Environment Agency where she has been for the last 7 years in a variety of roles. Before that she worked for the Berks, Bucks & Oxon Wildlife Trust for several years, and for RPS Group as a consultant. She also used to work for the National Radiological Protection Board as a Radiochemical Analyst! She has sat on the Professional Standards Committee for over 3 years, and became Co-Chair in September 2014.

Contact Ellie at:
eleanor.strike@environment-agency.gov.uk

Phil Baarda has been with SNH for 8 years, and is an ecologist providing advice on woodlands, though has a wider interest in functional and spatial ecology across landscapes and across habitats. Phil has been involved with CIEEM for many years, and currently sits on the Professional Standards Committee. Previously Phil has worked for the then BTCV, East Dorset District Council, VSO, and the NGO Highland Birchwoods. Outwith SNH, Phil is a playwright and has had some small successes on the stage and on radio, and is taking a play to this year's Edinburgh Fringe (#TheRhumPlants). Phil is new convert and enthusiast of Twitter @PhilBaarda

Contact Phil at:
Phil.Baarda@snh.gov.uk

Complaints Update

Breaches of the Code of Professional Conduct

Case 1

Gail Quartly-Bishop MCIEEM (self-employed) was found to have breached the following clause of the Code of Professional Conduct: 7.iv

This breach related to:

- Using inappropriate language and taking insufficient care to check the accuracy of comments published on social media.

Ms Quartly-Bishop has been reprimanded with advice.

Case 2

Barrington Kauffman-Wright ACIEEM (The Wildlife Man Consultancy) was found to have breached the following clauses of the Code of Professional Conduct: 7.ii and 7x

This breach related to:

- Failing to provide evidence of having undertaken Continuing Professional Development in accordance with CIEEM's requirements.

Mr Kauffman-Wright has been reprimanded.

CIEEM Chartered Institute of Ecology and Environmental Management

Call for Papers

CIEEM Spring Conference 2016

Advances in Ecological Impact Assessment

23 March 2016, London

Please contact enquiries@cieem.net for more information or to submit a proposal. The deadline for submitting a proposal is 6 January 2016.

www.cieem.net

An Easy Path to Recruitment

Emma Downey
Marketing Officer, CIEEM

When a position in your organisation becomes vacant, filling it with the perfect person quickly is key to avoiding unwanted disruption immediately and in the future. CIEEM have posted job vacancies on our website for over 5 years and as the quantity of organisations wishing to advertise to our professional network increases we have made some significant changes to meet these demands and ensure we are offering the best packages we can to advertisers. We aim for our job listings to be the 'go-to' place for potential employees looking for the next step in their career within the ecology and environmental management sectors.

As part of the launch of our new job packages, we are offering 10% discount on bookings made in January and February 2016. These listings must be paid for in full by 29 February 2016 but can be delayed in posting any time until 30 June 2016. This is to give organisations with seasonal vacancies the chance to take advantage of the offer. The 10% offer can be redeemed by contacting emmadowney@cieem.net and quoting the code: **AdvantageJob2016**

Standard Package

- Listing on CIEEM website for minimum 2 weeks
- 500 word job description
- 250 word company information
- Link to company website
- £120+VAT (additional weeks at £40+VAT)

Enhanced Package

- Listing on CIEEM website for minimum 2 weeks
- 500 word job description
- 250 word company information
- Weblink to company website
- Company logo included on listing
- Posted in CIEEM LinkedIn Group (with over 5,000 members)
- Posted weekly on Twitter (with over 3,000 followers)
- £220+VAT (additional weeks at £60+VAT)

CIEEM 'STEM Ambassadors' Wanted!

The STEM Ambassadors Programme (www.stemnet.org.uk/ambassadors) is a 30,000-strong network of volunteers across the UK, all with a passion for Science, Technology, Engineering and/or Mathematics. STEM Ambassadors inspire young people to continue studying STEM subjects, helping them to explore the applications of their studies in the wider world. They broaden career horizons, raise aspirations, and build understanding of the role that these subjects play in everyone's lives.

STEMNET, in partnership with CIEEM, is encouraging all ecologists and environmental managers to join the STEM Ambassadors Programme, taking part in at least one activity each year for a minimum of three years.

STEM Ambassadors work with more than 90% of state-funded secondary schools (and large numbers of primaries as well). Activities could be classroom workshops or talks, supporting an out-of-hours club, helping at large events and careers fairs, or working with non-schools audiences such as Guides or Scouts. You can watch some STEM Ambassadors in action at http://training.stemnet.org.uk/support/videos.

STEM AMBASSADORS ILLUMINATING FUTURES
Nationally coordinated by STEMNET

As well as benefitting students and teachers, being a STEM Ambassador can also benefit you. As well as being immensely enjoyable, volunteering with young people can build your own skills and count towards your annual CPD requirement.

To become a STEM Ambassador, register online at https://db.stemnet.org.uk and select the area of the UK where you will do most of your volunteering. Your local STEMNET contact will then email you about the next steps.

CIEEM will be developing some specific activities for its members to utilise, by registering as a **CIEEM STEM Ambassador** (see instructions for existing ambassadors below), we can keep you informed as these resources come online. If you are interested in helping to produce these activities, please get in touch with the CIEEM Professional Development Team by emailing lexiemunro@cieem.net.

Already a STEM Ambassador? Let CIEEM know!

Update your profile by logging in at http://db.stemnet.org.uk and clicking "Edit and update my personal details", followed by the "Edit Profile" button. On the "Qualifications & Interests" tab, you should select CIEEM in the "Professional Institution" box. If you are happy for STEMNET to share personal details and information about your STEM Ambassador activities with CIEEM, then on the "Admin/Data Protection" tab, please tick the box next to "Professional Institution".

Support 'Year of Fieldwork' – A Call to Members

At the launch of the 'Year of Fieldwork' initiative in September 2015, CIEEM pledged its official backing, badging the Autumn Conference last month as a supporting event with its resonating theme of reconnecting people and nature.

Fieldwork and other out-of-classroom learning experiences are increasingly being recognised across the curriculum as a highly valuable tool in raising standards and skills in participants of all ages. The 'Year of Fieldwork', which will run over the academic year 2015-2016, brings together a range of partners to celebrate these skills and opportunities and to offer support to those who wish to develop these further.

CIEEM is asking you, the members, to raise awareness of the initiative amongst your wider networks and to celebrate the varied fieldwork activities that you as ecologists and environmental managers carry out within your work or free time. Part of the Year of Fieldwork is encouraging 'Fieldwork Fridays'. If you are doing any fieldwork-related activities on a Friday please share it on Twitter with #fieldworkfriday. You can also pin your favourite fieldwork location to an interactive map or highlight fieldwork events you are involved in organising.

As the initiative develops throughout the academic year, CIEEM will post updates via the e-newsletter and Twitter on how you can get more involved.

www.fieldwork.org.uk

The British Ecological Society

Richard English
Communications Manager, British Ecological Society

The BES's mission is to generate, communicate and promote ecological knowledge and solutions. We can't do that alone, which is why we seek to collaborate with a breadth of ecological communities.

We pride ourselves in offering something for everyone involved in ecology – whether that be our world-renowned stable of journals (just £42 to access all current articles across our five subscription titles), our grants portfolio, extensive careers resources, European policy activities, public engagement initiatives or our diverse events calendar – the flagship being our Annual Meeting.

Over the past few years, *Journal of Applied Ecology* has sought to bridge the gap between applied ecological research and practical environmental management in two ways. *Practitioner's Perspectives*, launched in 2011, enables people who are involved in hands-on management of ecological resources to explain what is needed to ensure effective take-up of research results. *Policy Directions*, launched earlier this year, aims to inform and improve policy over a wide range of subjects by providing a broader policy context for the topic and relating it to the wider issues around constrained decision making.

Almost every new issue of *Journal of Applied Ecology* contains at least one of these article types: our latest *Practitioner's Perspective* is 'Science, statistics and surveys: a herpetological perspective' by Richard Griffiths, Jim Foster, John Wilkinson and David Sewell. All *Practitioner's Perspectives* and *Policy Directions* are free to access online (go to www.JournalofAppliedEcology.org and select the headings in main menu for summaries of all these articles). We heartily encourage CIEEM members to submit to them too!

We published a Virtual Issue on Wildlife Monitoring in October. The papers are drawn from *Journal of Applied Ecology*, *Journal of Animal Ecology* and *Methods in Ecology and Evolution* and provide examples of the latest monitoring research. The papers cover a broad range of animals including fish, mammals, invertebrates and birds.

We have also produced a free *Guide to Data Management*, which joins our other titles: *Guide to Peer Review* and *Guide to Getting Published*. You can access them all for free here: www.BritishEcologicalSociety.org/BESGuides

Our Annual Meetings are a perfect way of networking with an international mix of over 1,000 people from the ecological community. From 13-16 December 2015, we will be getting together in Edinburgh; you can look forward to a packed agenda including 12 parallel sessions, 16 thematic topics, world-renowned plenary speakers, informal social events and 16 workshops. This year, those workshops include:

- Playing games to resolve conservation conflicts: game theory in research and policy
- The future of data archiving
- How to be a better citizen's scientist

Our topical thematic topics include:

- Using ecology to guide public health policy
- Ecological and evolutionary risks to agriculture and food production
- Hidden herbivory: ecosystem consequences of soil-plant–herbivore interactions
- Making best use of ecological evidence
- The ecology of disturbance in a conservation context

At Easter 2016, we have our first symposium of the year – 'Making a difference in conservation: improving the links between ecological research, policy and practice' – on 11-13 April 2016 in Cambridge.

This meeting is held jointly with the Cambridge Conservation Initiative, along with support from DICE and the RSPB Centre for Conservation Science. We aim to bring together those involved in policy and government and the ecological research community, to assess the value and applicability of a range of techniques for improving the decision-making process. By working together, we aim to enable delegates to get greater impact from their research, and to improve policies and practice.

We'd love to hear how we can collaborate, so please get in touch or chat on Twitter with @BritishEcolSoc.

We hope to see you in Edinburgh but, if you're unable to join us, you can follow the conversation on Twitter with #BES2015 or join us in Liverpool for our 2016 Annual Meeting!

ecologyconsultancy

Ecology and Evolution Open Access

Functional Ecology

Journal of Animal Ecology

Journal of Ecology

Journal of Applied Ecology

Methods in Ecology and Evolution

For further information

Contact Richard at:
Richard@BritishEcologicalSociety.org

CIEEM's Member Networks:

Geographic Sections and **Special Interest Groups** are run by members for members to provide opportunities to network, share knowledge and learn more about the science and practice of our profession. There is also a role to play in promoting professional standards, feeding into consultations and representing the views of members at a local, national and international level.

For further information about Member Networks and how you can get involved, please visit www.cieem.net/get-involved.

SOUTH WEST ENGLAND

Gloucestershire Glow Worms

South West Section CIEEM members were in for a treat at the glow worm *Lampyris noctiluca* walk organised at a Victorian cemetery in Stroud on 27 July 2015. Thanks to the county glow worm recorder Denise Gibbons, we learnt about this fascinating insect's life cycle, sexual dimorphism, slug-eating habits and how to manage habitats for glow worms.

Read more about this event and see a short video of a Gloucestershire glow worm in action at www.cieem.net/south-west.

Glow worm *(Lampyris noctiluca)*. Photograph by Misho Baxendale.

SOUTH WEST ENGLAND

Beavers in the Cotswold Water Park

Lakeside beaver holt

It was a beautiful evening when we joined Ben Welbourn, Estates Manager at the Cotswold Water Park to hear all about their local beavers. The population is contained by an electric fence around one of the many lakes in the area and evidence of their activity was not hard to find, with branches and small trees chewed off at a characteristic angle. We saw their lakeside holt and admired their tooth-work before retiring to a hide with binoculars to try and spot these elusive mammals.

Read more about this event at www.cieem.net/south-west.

SOUTH EAST ENGLAND

Esher Commons SSSI: guided site visit

8 August 2015

The Esher Commons SSSI, off the A34 in Surrey, contains a rich variety of habitats including heathland, grassland, scrub, woodland and areas of marsh, bog and open water, with an exceptional range of plants and animals. Dave Page, Countryside Estates Officer for Elmbridge Borough Council, led a group of 17 CIEEM

members around the site on a sunny Saturday morning, discussing the issues around management of an intensively used site within the M25 ring.

Read more at www.cieem.net/south-east.

SOUTH EAST ENGLAND

Bird Ringing and Water Vole/ Reptile Translocations

8 September 2015, London Wetland Centre

A bird ringing demonstration at the London Wetland Centre, led by Bill Haines, provided the opportunity to see 15 species of bird, with a demonstration of how birds are aged, sexed and ringed. This was followed by a talk and tour to discuss water vole and reptile translocations at the Centre by Richard Bullock of the WWT.

Read more at www.cieem.net/south-east.

Bill Haines demonstrates bird ringing

EAST MIDLANDS

Seeking new Committee members

The East Midlands Section Committee is a small but enthusiastic group of volunteers who would very much like to enlist a few more members to help them take forward some great new projects and events in the East Midlands region. If you are an East Midlands member and have even a little time you could offer to support your Committee, please visit www.cieem.net/cieem-committee-vacancies to find out more.

IRELAND

Irish Section Members' News

The new-look Irish Section Members' Newsletter includes details of CIEEM's activities across the whole of Ireland and all the great work of the Irish Section Committee, with the help of the new Irish Section Support Officer, Kate Flood.

Read more at www.cieem.net/ireland.

SOUTH EAST ENGLAND

Deer Rut in Richmond Park

26 September 2015

We had amazing weather for the visit to Richmond Park, led by Adam Curtis the Deputy Director. This made it very pleasant for us but did reduce the deer activity as, although bellowing regularly, most of the stags were minding their harems while they all rested in the shade. However we were lucky enough to see a young stag sneak up to try his luck, being noticed and chased off by the dominant one.

The veteran trees in the Park are also very impressive and the management needed to maintain these was explained.

Read more about this event at www.cieem.net/south-east.

Exploring veteran tree management in Richmond Park

SCOTLAND

Scottish Section Conference and AGM 2016

Wildlife Crime in the spotlight: a closer look at wildlife crime fighting initiatives in Scotland

27 January 2016, Glasgow

This conference will explore what constitutes wildlife crime and what wildlife protection legislation means to environmental practitioners. Case studies will look at crime involving raptors, bats and plants, and there will be a look at the role of the Ecological Clerk of Works.

Further details and a programme will be available soon at www.cieem.net/scotland.

EAST OF ENGLAND

Large scale habitat creation and enhancement to Abberton Reservoir SPA

22 September 2015, Abberton

Essex & Suffolk Water (ESW) and Essex Wildlife Trust (EWT) led a fantastic event on the Abberton Enhancement Scheme. Seventeen people attended, from various different environmental disciplines, to hear talks on the background to the Abberton Scheme, how planning permission was sought to develop an SPA, the challenges that arose during construction, the improvements made to the site for ecology and the role of EWT at Abberton.

Read more at www.cieem.net/east-of-england.

IRISH SECTION CONFERENCE AND AGM 2016

Advances in Technology and Analysis in Ecological Assessment

10-11 February 2016, Glenview Hotel, Co. Wicklow

This conference will focus on the latest developments in methods, technological aids and data analysis techniques for use in ecological survey and assessment. The day will include talks, workshops and practical demonstration in the beautiful grounds of the Glenview Hotel in Co. Wicklow.

For further details, including a conference programme and opportunities for exhibitors, please visit http://www.cieem.net/irish-section-conference-and-agm-2016.

The Irish Section Committee looks forward to welcoming you there.

Grounds at the Glenview Hotel

SOUTH WEST ENGLAND

South West England Section Conference and AGM 2016

Promoting a Landscape-Scale Approach to Wetland Biodiversity

15 December 2015, Exeter

This one-day conference promises to be a thought-provoking and stimulating event that explores current thinking in wetland biodiversity conservation at a landscape-scale, exploring current and future policy, and the need to consider historic and present trends when deriving new policy. It will showcase several exciting studies in the south west that focus on the conservation and restoration of priority wetland habitats and species. It will also challenge some of the current thinking and priorities for conservation.

You can find further details, including a conference programme and bookings details, at www.cieem.net/south-west-england-section-conference-and-agm-2015.

Look out for upcoming events in your Section at www.cieem.net/geographic-sections and keep up to date with what's been going on at www.cieem.net/member-network-news. For information on vacancies on your Section Committee visit www.cieem.net/cieem-committee-vacancies.

New Members

The decision on admission is usually taken by the Membership Admissions Committee under delegated authority from the Governing Board but may be taken by the Governing Board itself.

CIEEM is pleased to welcome the following individuals as new members:

ADMISSIONS

Full Members

Mr Mike Alexander, Miss Abigail Bartram, Mr Simon Breeze, Mr Maxwell Burrell, Mr Sean Gallagher, Mr Brian Henry, Mrs Catherine Hunter, Dr Peter Jackson, Mr Rory Jones, Mr Paul Lupton, Mr Thomas Owens, Mr Stephen Ray, Mr Paul Rowntree, Ms Hayley Wallis, Ms Lauren Williams, Mrs Janice Winder.

Upgrades to Full Membership

Mr Liam Atherton, Mr Alexander Baldwin, Mr Phil Bolton, Mr Richard Chilcott, Mr Ryan Oakley, Miss Dawn Thompson.

Associate Members

Mr Aaron Davies, Ms Cara Donovan, Mr Colin Heaslip, Miss Katie Lloyd, Miss Robin Searle, Mr Paul White.

Upgrades to Associate Membership

Mr Michael Ashford, Mr Christopher Crow, Miss Faye Midmore, Mrs Lorna Roberts, Mr Jake Robinson, Miss Hannah Rose, Miss Alice Shoebridge.

Graduate Members

Mr Daniel Best, Miss Grace Burdge, Mr Liam Byrne, Mr Carl Capewell, Mr Jonathan Carter, Mr Benjamin Carver, Miss Alexandrea Clark, Ms Gemma Costin, Mr Joseph Dance, Miss Katie Davies, Mr Darren Denmead, Mr Bradley Fairclough, Mr Jethro Gauld, Mr Ewan Gibson, Miss Colette Gibson, Miss Robyn Guppy, Ms Elizabeth Hall, Ms Beverley Hall-Jones, Miss Christina Hellevik, Miss Charlotte Hewitt, Miss Lori-Leah Holes, Miss Charlotte Houlker, Ms Stephanie Kershaw, Mr Aran Leaf, Mr Patrick Leatham, Miss Polly Lockyer, Ms Julie Miller, Mr Mark Mulqueeney, Ms Kirsty Nelson, Miss Hannah Norman, Miss April Park, Mr Benjamin Rees, Miss Catherine Shaw, Mr Gregory Surgenor-Aldridge, Mrs Donna Tubridy, Ms Grace Turner, Miss Rebecca Turner, Miss Charlotte Wade, Mrs Josephine Wells, Ms Tracy White, Miss Elizabeth White.

Upgrades to Graduate Membership

Mr Timothy Body, Miss Alice Palmer.

Student Members

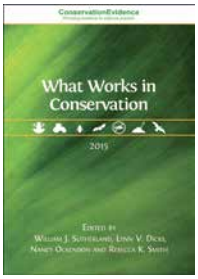
Mr Christofer Ahlgren, Miss Faye Balmer, Miss Sally Bavin, Miss Olivia Benson, Mr Stuart Burbidge, Mr Tom Burr-Hersey, Miss Jennifer Carter, Miss Helen Cradduck, Miss Shona Crawford-Smith, Miss Rebecca Dick, Mr Ross Donnelly-Swift, Miss Laura Duggan, Mr Nathan Duszynski, Miss Elise Fox, Mr Charles Gardiner, Mr David Gilbert, Mr Rory Glackin, Mr Christopher Greensmith, Miss Lacy Grimes, Miss Kate Islip, Mr James Lamb, Miss Angela McIntyre, Mr Alex Newnes, Mr Obonyilo Obonyilo, Mr Adrian Orrell, Miss Dominique Rhoades, Mr Alexander Richardson, Miss Fiona Scott, Miss Nicola Snow, Mr Joshua Styles, Mr Andrei Teaca, Mr Luke Titus, Miss Molly Toal, Miss Victoria Wallace, Miss Rebecca Yearsley, Miss Viola Zanetta.

Qualifying Members

Mr Leo Brogan, Mr Andrew Fear, Ms Josephine Frewin, Mr Fabio Ghiandai, Mr Christopher Hayes, Mr Edward Lane, Mr Nathan Melson, Mr Troy Paterson, Mr Lorne Thomson, Mr John Young.

Supporter Members

Ms Lynsey Kidd, Mr Crawford Kidd, Mr Stuart Leith, Miss Amie-Beth Sabin.



What Works in Conservation

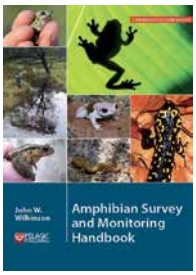
Editors: William J. Sutherland, Lynn V. Dicks, Nancy Ockendon and Rebecca K. Smith

ISBN: 9781783741595

Price: free PDF download

Available from: www.openbookpublishers.com/product/347/what-works-in-conservation

This book provides an assessment of the effectiveness of 648 conservation interventions based on summarized scientific evidence relevant to the practical global conservation of amphibians, reducing the risk of predation for birds, conservation of European farmland biodiversity and some aspects of enhancing natural pest control and soil fertility. It contains key results from the summarized evidence for each conservation intervention and an assessment of the effectiveness of each by international expert panels. The volume is published in partnership with the Conservation Evidence project and is fully linked to the project's website where more detailed evidence and references can be freely accessed.



Amphibian Survey and Monitoring Handbook

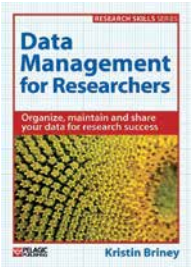
Author: John W. Wilkinson

ISBN: 9781784270032

Price: £29.99

Available from: www.pelagicpublishing.com/amphibian-survey-and-monitoring-handbook.html

Key amphibian survey techniques are discussed with reference to published examples of successful surveys. Tips on optimizing your survey effort and handling amphibians in the field are also included. Whether carrying out a student expedition project or seeking information to support the management of a protected area, this book contains essential advice from an amphibian ecologist who has encountered the same sorts of decisions you face when planning your surveys.



Data Management for Researchers: Organize, maintain and share your data for research success

Authors: Kristin Briney

ISBN: 9781784270117

Price: £24.99

Available from: www.pelagicpublishing.com/data-management-for-researchers.html

This is a comprehensive guide to everything scientists need to know about data management, and is essential for researchers who need to learn how to organize, document and take care of their own data.

Green Infrastructure: Incorporating Plants and Enhancing Biodiversity in Buildings and Urban Environments

Authors: John W. Dover

ISBN: 9780415521246

Price: £44.99

Available from: www.routledge.com/products/9780415521246

The principal aim of this book is to synthesize the disparate literature on the use of vegetation in the built environment and its multifunctional benefits to humans. The author reviews issues such as: contact with wildlife and its immediate and long-term effects on psychological and physical wellbeing; the role of vegetation in removing health-damaging pollutants from the air; green roofs and green walls, which provide insulation, reduce energy use and decrease the carbon footprint of buildings; and structural vegetation such as street trees, providing shading and air circulation whilst also helping to stop flash-floods through surface drainage.

Other Publications of Interest

Nature's Conscience: The Life and Legacy of Derek Ratcliffe
Des Thompson FCIEEM, Hilary H. Birks, John Birks MCIEEM

Routledge Handbook of Forest Ecology
K.S.H. Peh, R.T. Corlett and Y. Bergeron

Inglorious: Conflict in the Uplands
Mark Avery

Conservation for Cities: How to Plan & Build Natural Infrastructure
Robert I. McDonald

Lakes, Loughs and Lochs (New Naturalist)
Brian Moss

Tales from Concrete Jungles: Urban Birding Around the World
David Lindo

The Native Woodlands of Scotland: Ecology, Conservation and Management
Scott Wilson

Estuarine Ecohydrology: An Introduction (2nd Ed.)
E. Wolanski and M. Elliott

Few and Far Between: On the Trail of Britain's Rarest Animals
Charlie Elder

Assessing the performance of EU nature legislation in protecting target bird species in an era of climate change

Sanderson, F.J. *et al*.

Conservation Letters 2015, doi: 10.1111/conl.12196

International legislation forms a cornerstone of conservation, yet its efficacy is rarely quantified. The study authors assess whether species listed on Annex I of the EU Birds Directive differ systematically in their short-term (2001-2012) or long-term (1980-2012) population trends from those of non-Annex I species. In both periods, Annex I species had more positive trends than non-Annex I species, particularly in countries that joined the EU earlier. There were additional signatures of climate change and life history strategy in the trends of species in one or both periods. Within Annex I species, long-distance migrants fared significantly worse than other species, suggesting that enhanced protection on the breeding grounds alone may be insufficient for these species. The authors conclude that the EU's conservation legislation has had a demonstrably positive impact on target species, even during a period in which climate change has significantly affected populations.

http://onlinelibrary.wiley.com/doi/10.1111/conl.12196/epdf

Reframing the land-sparing/land-sharing debate for biodiversity conservation

Kremen, C.

Annals of the New York Academy of Sciences 2015, doi: 10.1111/nyas.12845

In this review, the author evaluates the land-sparing/land-sharing framework – does the framework stimulate research and policy that can reconcile agricultural land use with biodiversity conservation, or is a revised framing needed? The author suggests that the dichotomy of the land-sparing/land-sharing framework limits the realm of future possibilities to two, largely undesirable, options for conservation. Both large, protected regions and favourable surrounding matrices are needed to promote biodiversity conservation; they work synergistically and are not mutually exclusive. A "both-and" framing of large protected areas surrounded by a wildlife-friendly matrix suggests different research priorities from the "either-or" framing of sparing versus sharing.

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The downside of eDNA as a survey tool in water bodies

Roussel, J.-M. *et al*.

Journal of Applied Ecology 2015, 52: 823–826. doi: 10.1111/1365-2664.12428

Detection or non-detection of species-specific DNA fragments in a water sample does not automatically imply the presence or absence, respectively, of the target species. Before successfully becoming an efficient tool to assist proper management policies for monitoring of aquatic species, eDNA surveys must implement sampling strategies that allow estimating detection rates and scaling up information from water samples to larger spatial areas. The effects of discharge variations and dendritic organization in running waters require particular consideration.

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Applications and limitations of measuring environmental DNA as indicators of the presence of aquatic animals

Rees, H.C. *et al*.

Journal of Applied Ecology 2015, 52: 827–831. doi: 10.1111/1365-2664.12467

Roussel *et al*. (2015) (see above) claim that analysis of this author's 2014 paper and other publications highlights the downsides of the method, and they suggest that some conclusions should be toned down. Many of their arguments were covered in the original 2014 paper; however they make the point that modelling approaches should be encouraged and we fully agree with this suggestion. Roussel *et al*. (2015) reiterate many of the points made in the original paper but do cover some additional areas that improve the debate on the use of eDNA. Both the comment and this author's rebuttal highlight that detailed laboratory protocols and rigorous field sampling design are crucial factors which require sufficient reporting in the literature to allow for experimental comparison and replication. Any development of a new method for eDNA detection should be compared directly with established 'gold standard' methods for the detection of the species or habitat under investigation.

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Local and landscape-level floral resources explain effects of wildflower strips on wild bees across four European countries

Scheper, J. *et al*.

Journal of Applied Ecology 2015, 52: 1165–1175. doi: 10.1111/1365-2664.12479

Growing evidence for declines in wild bees calls for the development and implementation of effective mitigation measures. Enhancing floral resources is a widely accepted measure for promoting bees in agricultural landscapes, but effectiveness varies considerably between landscapes and regions. This study shows that the effects of wildflower strips on bees are largely driven by the extent to which local flower richness is increased. The effectiveness of this measure could therefore be enhanced by maximizing the number of bee forage species in seed mixtures, and by management regimes that effectively maintain flower richness in the strips through the years.

In addition, for bumblebees specifically, the study highlights the importance of a continuous supply of food resources throughout the season.

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Forthcoming Events 2015-16

For information on these events please see *www.cieem.net*.

Conferences and Other Events		
Date	Title	Location
23 March 2016	CIEEM Spring Conference 2016: Advances in Ecological Impact Assessment	London

Training Courses		
19 January	Habitats Regulations Assessment (HRA) of Projects (England/Wales and their territorial waters)	Manchester
20 January	Habitats Regulations Assessment (HRA) of Plans (England/Wales and their Territorial Waters)	Manchester
21 January	Professionalism and Environmental Ethics	London
26 - 27 January	Developing Practical Skills in Ecological Impact Assessment (EcIA)	London
28 January	British Standard BS42020 Biodiversity – Code of Practice for Planning and Development	Cardiff
28 January	Ecological Clerk of Works	Leeds
29 January	Environmental Advisor for Construction Sites	Leeds
2 February	Introduction to Ecological Impact Assessment (EcIA)	Birmingham
4 February	European Protected Species for Consultants	London
9 February	Habitats Regulations Assessment (HRA) of Projects (England/Wales and their territorial waters)	Bristol
11 February	Ecological Clerk of Works	Inverness
12 February	Environmental Advisor for Construction Sites	Inverness
23 February	Habitats Regulations Assessment (HRA) of Plans (England/Wales and their Territorial Waters)	Bristol
23 - 24 February	Developing Practical Skills in Ecological Impact Assessment (EcIA)	Leeds
1 March	Professionalism and Environmental Ethics	Cardiff
4 March	Water Environment – The Legal Framework	London
8 March	Advanced Ecological Impact Assessment (EcIA)	Birmingham
10 March	Ecological Clerk of Works	Manchester
11 March	Environmental Advisor for Construction Sites	Manchester

Geographic Section Events		
15 December 2015	South West England Section Conference & AGM 2015: Promoting a Landscape Scale Approach to Wetland Biodiversity (sponsored by South West Water)	Exeter
15 December 2015	North East Section AGM 2015: Water, Ducks and Dumper Trucks	Gateshead
27 January 2016	Scottish Section Conference & AGM 2016: Wildlife Crime in the spotlight: a closer look at wildlife crime fighting initiatives in Scotland	Glasgow
10-11 February 2016	Irish Section Conference & AGM: Role of Technology and Analysis in Ecological Assessment	Co. Wicklow

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