

inpractice

Issue 94 | December 2016

Working in Partnership

In this issue

Cross-Sector Partnerships:
Setting Up For Success

Partnerships in Action

Brexit Legal Update

Welcome

From Our Chief Executive Officer

Welcome to the latest edition of *In Practice*, where you will find a wide range of interesting articles on **Working in Partnership**. The theme is very appropriate given that, as our 25th year draws to a close, our Institute's first 25 years has benefitted greatly from partnership working with other professional bodies, learned societies and other fora.

Working in partnership is not always as easy as it sounds. It involves trust, compromise, understanding your partner's priorities and ways of working and, above all, a shared commitment to getting things done and resolving issues. Some of the articles in this issue describe great examples of partnership working and offer some useful learning points.

But back to our 25th anniversary. Such milestones are always worth celebrating and this autumn we held a series of Anniversary Celebration Lectures to reflect on the health of ecological and environmental management in the UK and Ireland. As you can imagine, the continuing debate post-Brexit referendum provided much food for thought and material for some of the speakers.

We kicked off in Ireland where well known author and environmental journalist Paddy Woodworth spoke passionately about 'Novel Ecosystems: New Normal or Red Herring?' to an audience of practitioners, decision-makers and other stakeholders at the Royal Irish Academy in Dublin.

Next up was Professor Sir John Lawton who addressed an enthusiastic gathering in London. Sir John reflected on the interesting times in which we currently find ourselves, the wisdom (or otherwise) of recent Government decisions with regards to the environment and the absurdity of spending money on dealing with the consequences of environmental mismanagement rather than on prevention (using air quality and human health as an example). He talked about the challenges and opportunities in a post-Brexit world and the role of the profession in shaping that future.

Jane Davidson, Director of INSPIRE at the University of Wales Trinity St David, led the Welsh celebrations. As one of the architects of the innovative *Well-being of Future Generations in Wales* legislation, Jane was well placed to talk about the important role the profession must play in achieving the vision of such ground-breaking legislation.

We ended our celebrations in Scotland, where former MSP and current President of the Scottish Wildlife Trust, Robin Harper, spoke at Edinburgh City Chambers. His lecture focused on (fittingly for this edition of *In Practice*) partnerships and how organisations need to work together, including those we might disagree with.

In an earlier edition of *In Practice* we featured the reflections of the four CIEEM Vice Presidents on the Institute's first 25 years – our achievements and the challenges and opportunities ahead. Perhaps my favourite 25th anniversary initiative, though, has been the articles written by Graduate members. Their thoughts for the future, their optimism for the profession they have recently joined, their awareness of the issues that will influence their work and their aspirations for CIEEM are, to my mind, thoughtful and inspiring.

Coming back to the theme of this edition of *In Practice* – the need for us to work in partnership with others in order to achieve our goals – there is no excuse now!

Sally Hayns CEcol MCIEEM

Chief Executive Officer

Information

In Practice No. 94
December 2016
ISSN 1754-4882

Editor

Dr Gillian Kerby (gillkerby@cieem.net)

Internal contributions coordinator

Mr Jason Reeves (jasonreeves@cieem.net)

Editorial Board

Mr Jonathan Barnes, Dr Kate Bayley,
Dr Andrew Cherrill, Mr Dominic Coath,
Mr Neil Harwood, Dr William Latimer,
Dr Caroline McParland, Mrs Kate Morris,
Mr Paul Rooney, Mr Paul Scott,
Miss Katrena Stanhope, Mr Darren Towers

Opinions expressed by contributors to *In Practice* are those of the authors and not necessarily supported by the Institute. Readers should seek appropriate professional guidance relevant to their individual circumstances before following any advice provided herein.

Information on advertising, including rates and deadlines, can be found at www.cieem.net/ip-advertising. The Institute does not accept responsibility for advertising content or policy of advertisers, nor does the placement of advertisements within *In Practice* imply support for companies, individuals or their products or services advertised herein.

CIEEM Office

**43 Southgate Street, Winchester,
Hampshire, SO23 9EH, UK**

T: 01962 868626

E: enquiries@cieem.net

W: www.cieem.net

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

© Chartered Institute of Ecology and Environmental Management

Front cover image: Lichens are the epitome of working in partnership; a symbiotic relationship between algae and fungi allowing them to survive in places where neither could do so individually.

Contents



PG 08

Cross-Sector Partnerships: Setting Up For Success

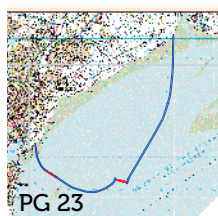
Darren Towers



PG 13

Partnerships in Action – Europe and Beyond

Debbie Bartlett



PG 23

Using the Evidence Plan Process in Wales – A Partnership Approach in Action

Jo Pickard



PG 27

The Mountains & The People – Partnership in Practice

Tom Wallace



PG 32

Fingringhoe Wick Managed Realignment – Successful Partnership Between the Essex Wildlife Trust and the Environment Agency

Andrew May and Merle Leeds



PG 37

Developing Community Nature Conservation: The Case for Working in Partnership with the Community

Paul Phillips

02 Editorial

03 Contents

04 Chartered Institute News and Activities

06 News in Brief

Feature Articles

- 08 – Cross-Sector Partnerships: Setting Up For Success
Darren Towers
- 13 – Viewpoint: Partnerships in Action – Europe and Beyond
Debbie Bartlett
- 16 – Viewpoint: How Inclusive Are You When Working
With Others?
Claire Vetori
- 19 – Working in Partnership to Improve the Consideration
of Biodiversity in the Planning Process
Catherine Wyatt
- 23 – Using the Evidence Plan Process in Wales
– A Partnership Approach in Action
Jo Pickard
- 27 – The Mountains & The People – Partnership in Practice
Tom Wallace
- 32 – Fingringhoe Wick Managed Realignment
– Successful Partnership Between the Essex Wildlife Trust
and the Environment Agency
Andrew May and Merle Leeds
- 37 – Developing Community Nature Conservation: The Case
for Working in Partnership with the Community
Paul Phillips

41 – Meet the Author – Debbie Bartlett

42 – Meet the Editorial Board

Professional Updates

- 45 – Brexit: Potential Impacts On Our Natural Environment
Legal Framework
Penny Simpson
- 51 – Viewpoint: A Brexit Heretic
David Lowe
- 53 – Bats and Transport Infrastructure
Chloe Delgery
- 56 – Promising Professionals
Sally Mousley and Mark Webb
- 58 – CIEEM Celebrates 25 Years with National Events
Kate Flood and Jason Reeves
- 60 – Is it Time to Upgrade Your Membership to the Next Level?
- 61 – Advertise Work Experience Opportunities for FREE!
- 62 – CPD Annual Audit – Are You Prepared?
- 62 – Complaints Update
- 63 – Chartered Membership
- 64 – CIEEM Membership Update
- 65 CIEEM's Member Networks
- 67 New Members
- 68 Recent Publications and Journals
- 72 Diary
- 73 External Advertisements

CIEEM and Brexit

The CIEEM Secretariat and Brexit Working Groups have been incredibly busy over the last few months. The Working Groups have set out their concerns and issues for each of their seven topic areas. These have since been used as the starting point for further discussion at a high level meeting with Patrons, Past Presidents and other senior members in October. The seven Working Groups have now been reformed as five Task Groups (Marine Environment and Resources; Habitats and Species; Land Management and Funding; Air Quality; and Water Resources) and have started work on their immediate priorities and activities. Further work also continues in collaboration with external partners, and the CIEEM Brexit webpage (www.cieem.net/eu-referendum) continues to be updated as a resource for both members and the public.

If you would like to be involved in CIEEM's Brexit activities please contact policy@cieem.net.

CIEEM Awards 2017 Open for Entries

We are pleased to launch the 2017 CIEEM Awards; celebrating professional achievement in ecology and environmental management. All Awards categories are now open for entry.

Each year, CIEEM presents a series of Awards with an overall aim to celebrate the achievements of both the profession and of individual practitioners, and to raise the profile of CIEEM by highlighting our role in championing the importance and practice of ecology.

Our awards are split into several different categories which honour both organisations and individuals working within the ecological and environmental sector.

Please do consider putting in an entry or making a nomination. Deadlines are staggered through January 2017.

The Awards Lunch 2017 will be held at Drapers' Hall, London on Wednesday 21st June 2017.

More information:
www.cieem.net/cieem-awards-2017

Research into Bat Mitigation Effectiveness

CIEEM is hoping to collaborate with the University of Exeter in a twelve-month study into the effectiveness of day-to-day bat mitigation solutions used across the UK and Ireland. With support from the statutory nature conservation bodies in the UK, the Bat Conservation Trust and Bat Conservation Ireland, we hope to produce evidence of effectiveness that can then be used to guide mitigation proposals with more realistic prospects of successful outcomes.

We are currently fundraising for the matched funding required for this project and urgently need sponsors. We require another £10,000 to meet our target. If your company can help and is interested in co-sponsoring the project and the subsequent guidance document please contact enquiries@cieem.net.

Skills Gaps

Thank you to all those who took part in the skills gap survey in the summer. The data provided has been analysed and the findings were discussed at the Autumn Conference in Nottingham last month. A report on the findings will be published in the March issue of *In Practice*.

Careers Toolkit

Work has begun on developing a suite of careers materials and activities, downloadable from the website, for CIEEM members to use in secondary schools. We know that some members already give careers talks in schools, or take part in STEM activities, and we are keen to encourage more members to be ambassadors for the profession.

We hope to make the toolkit available from mid-2017 onwards. If you have materials and activities that you are willing to share as part of the toolkit then please do get in touch with Lexie Munro (lexiemunro@cieem.net).

Principles for Achieving Net Gain for Biodiversity

CIEEM has been working with IEMA and CIRIA on developing ten 'high level' principles for achieving net gain for biodiversity through development projects. The principles have been developed in consultation with other organisations and statutory nature conservation bodies in the UK. Following their launch earlier this month (see www.cieem.net/news) the partners are now continuing to work on developing more detailed guidance on how to achieve net positive by putting the principles into practice. CIRIA is currently seeking sponsors to help fund the development of the guidance so if you or your company are interested in being involved please contact Michael Small at CIRIA (enquiries@ciria.org).

CIEEM Autumn Conference 2016

Following the CIEEM Autumn Conference 2017 on the theme of Skills for the Future, we have now uploaded the presentations to the CIEEM website.

In addition, there are videos of our after dinner speaker, Merrick Denton-Thompson OBE, and the conference debate on what the profession could look like in 10 years' time.

The CIEEM AGM was also held during the conference, with the following election results:

- Tim Hounsborne and Paul Wilkinson were elected to the Governing Board.
- Tom Gray and Pamela Nolan were re-elected to the Advisory Forum.
- Paul L. Smith was elected to the Advisory Forum.

At the AGM, thanks were given to Richard Handley (stepping down from the Governing Board), Andy Lane and Neil Coombs (both stepping down from the Training, Education and Career Development Committee), Keith Ross (stepping down as the Chair of the Membership Admissions Committee), Peter Beale and Robin Fields (both stepping down from the Membership Admissions Committee), and Rob Cooke and Katherine Kennedy (both stepping down from the Professional Standards Committee).

<http://www.cieem.net/2016-autumn-conference->

CIEEM Conferences 2017

Date	Title	Location
18 January 2017	Scottish Section Conference 2017 – Creating Sustainable Cities using an Ecosystem Services Approach	Perth
8-9 February 2017	Welsh Section Conference 2017 – Building Bridges between Farming and Nature: Grazing is Amazing	Llandudno
22 March 2017	Spring Conference 2017 – Mainstreaming Biodiversity into Future Cities	London
4 July 2017	Summer Conference 2017 – Ecological Assessment in the Marine Environment	England South Coast
21-22 November 2017	Autumn Conference 2017 – Habitat Assessment: Mitigation, Monitoring and Effectiveness	Manchester

University of Derby Receives Accreditation for Two Degree Courses

The University of Derby has been accredited by CIEEM for two of its degree courses: BSc (Hons) Zoology and BSc (Hons) Biology.

Find out more about CIEEM accredited degrees at: www.cieem.net/cieem-accredited-degrees



CIEEM Vice President (England) Lisa Kerslake and Debbie Alston from University of Derby

Degree Accreditation at Harper Adams University

In 2013 Harper Adams University in Shropshire was one of the first four universities to be awarded CIEEM accreditation for their Countryside and Environmental Management course.

As a leading provider for courses in the land-based sector, we have been extremely proud to be involved with both the development work through the CIEEM Training, Education and Career Development Committee (TECDC) and also the pilot process for accreditation of university degrees. We are now finding more applicants to our courses are mentioning that the CIEEM accreditation does attract them as it reinforces our links with the environmental industry in which they would like to make their careers.

Becky Price, a final year BSc Countryside and Environmental Management student, commented:

"It's very fulfilling enrolling onto an accredited degree, because you know it's been recognised for its breadth of ecological and environmental concepts. The course delivers these through a combination of field trips and academic lectures, providing you with the essential knowledge and skills needed for the future. The amalgamation of theory and practice ensures you are well-equipped for a career in ecology and environmental management."

This year CIEEM kindly sponsored the CIEEM logo on all our students course tops

which is good promotion externally for CIEEM and for our accredited course.

Harper Adams University has also been presented with the WhatUni Student Choice Awards winner of the year as well as winning the awards for student support and job prospects. The latter award for job prospects is very important to us as all our students undertake a year's work placement in their sector, which is a major contributing factor for our graduate employment of over 90%. The very applied nature of our courses combined with close links with industry through our placement students allows a huge range of employment possibilities for all our students.

**Nicky Hunter MCIEEM
and Andy Cherrill MCIEEM**



Harper Adams students

In Practice themes 2017

Edition	Theme	Submission deadline
March 2017	Rewilding and Species Reintroductions	28 November 2016
June 2017	One Year On from the EU Referendum	27 February 2017
September 2017	Grassland Ecology and Grazing	29 May 2017
December 2017	Nature Conservation Approaches with Reduced Resources	28 August 2017

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.

New Natural England Protected Species Licencing Policies

Natural England is changing the way it issues licences to provide significant benefits for both wildlife and licence applicants. Four innovative new policies have been created that will smooth the process for businesses that require a wildlife licence for their project, saving them time and money. In return, they will fund investment in the creation and enhancement of wildlife habitat, providing greater security for populations of protected species such as water voles, dormice, bats and great crested newts. Together, the four new policies will encourage planners and conservationists to think at a wider, landscape-scale – channelling investment into bigger, better, more joined-up habitat for wildlife. The changes will mean the application of the law is focused on the measures which are most effective at protecting populations. More information: www.cieem.net/news

Recent Select Committee evidence session on Brexit and UK-Irish relations

This recent evidence session by the European Union Select Committee will be of wider interest to members and the sector. This session is available to watch on Parliament TV.

<http://parliamentlive.tv/event/index/ead0dfd8-68f7-4524-a76c-5e21940322c7>

National Ecosystem Approach Toolkit (NEAT)

The NEAT Tree provides the tools and experience to build a relationship with nature into decisions in a transparent, participatory and evidence-driven way. Not only will these lead to better outcomes, it will allow you to demonstrate that the principles of the Ecosystem Approach have been built into your work.

<http://neat.ecosystemsknowledge.net/index.html>

A Global Register of Competences for Protected Area Practitioners

This IUCN publication is a comprehensive directory of and user guide to the skills, knowledge and personal qualities required by managers, staff and stewards of protected and other conserved areas.

<https://portals.iucn.org/library/sites/library/files/documents/PATRS-002.pdf>

National Trust calls for overhaul of farming

The National Trust has set out six principles that any new system must deliver for the public:

1. Public money must only pay for public goods.
2. It should be unacceptable to harm nature but easy to help it.
3. Nature should be abundant everywhere.
4. We need to drive better outcomes for nature, thinking long-term and on a large scale.
5. Farmers that deliver the most public benefit, should get the most.
6. We must invest in science, new technology and new markets that help nature.

<https://www.nationaltrust.org.uk/news/the-future-of-our-countryside>

Natura 2000 conservation: how can social-science research enhance conservation outcomes?

This study reviewed findings on the social aspects of Natura 2000, identifying research gaps and recommendations for improving the network's implementation across the EU. The researchers say limited stakeholder participation, negative perceptions of the network and a lack of consideration of the local context hinder the network's effectiveness. They recommend increasing public awareness and compensating private landowners.

http://ec.europa.eu/environment/integration/research/newsalert/pdf/natura_2000_social_science_research_enhance_conservation_outcomes_467na1_en.pdf

Defra publishes single departmental plan 2015-2020

Defra's single departmental plan describes the objectives of the department for 2015-2020.

<https://www.gov.uk/government/publications/defra-single-departmental-plan-2015-to-2020>

Recent Select Committee evidence sessions on Brexit and the Natural Environment

There have been several recent evidence sessions by Select Committees that will be of interest to members and the sector.

- The Future of the Natural Environment after the EU Referendum (four sessions)
- Potential implications of Brexit for fisheries policy (two sessions)
- Work of the Department for Environment, Food and Rural Affairs
- Leaving the EU: implications and opportunities for science and research
- Brexit: Environment and Climate Change (two sessions)

All of the above evidence sessions are available to watch on Parliament TV.

<http://www.cieem.net/news/359/recent-select-committee-evidence-sessions-on-brexit-and-the-natural-environment>

Seals avoid wind farms during the noisiest phase of construction

Wind farms are an important component of Europe's shift towards a greener energy supply, but they could potentially have an impact on marine ecosystems. This study provides the first measurements of the distribution of harbour seals in relation to the construction and operation of wind farms, and makes recommendations to minimise any potential harm, including breaks in the pile-driving phase of construction.

http://ec.europa.eu/environment/integration/research/newsalert/pdf/seals_avoid_wind_farms_during_noisiest_phase_construction_470na4_en.pdf

New advice notes from POST

The Parliamentary Office of Science and Technology (POST) has published three new POSTnotes that will be of interest to members:

- 538 - Green Space and Health
- 537 - Rewilding and Ecosystem Services
- 536 - Designing a Circular Economy

<http://www.parliament.uk/mps-lords-and-offices/offices/bicameral/post/publications/postnotes/>

New website for Scotland's Soils

The Scotland's Soils website is part of the Scotland's Environment Web family, and provides data and information on Scotland's soils.

<http://soils.environment.gov.scot/>

State of Nature reports published

This stock take of the UK's wildlife reveals that 56% of the species studied have declined over recent decades. More than one in ten of all the species assessed are under threat of disappearing from the UK altogether. However, the report illustrates that targeted conservation has produced inspiring success stories and, with sufficient determination, resources and public support, we can turn the fortunes of our wildlife around.

<http://www.rspb.org.uk/our-work/conservation/centre-for-conservation-science/research/details.aspx?id=363867>

Wales' State of Natural Resources Report

Natural Resources Wales' *State of Natural Resources* Report (SoNaRR) is the first of its kind in Wales. The report sets out the state of Wales' natural resources. It assesses the extent to which natural resources in Wales are being sustainably managed, and recommends a proactive approach to building resilience. And - for the first time - the report links the resilience of Welsh natural resources to the well-being of the people of Wales.

<http://www.cieem.net/news/357/nrw-publishes-state-of-natural-resources-report>

Bats and Wind Turbines research project

Defra has published the much anticipated report based on the University of Exeter research on bats and wind-turbines.

http://www.bats.org.uk/news.php/342/bats_and_wind_turbines_research_project

SNH Commissioned Report 406: Descriptions of Scottish Priority Marine Features (PMFs)

This project has produced a descriptive catalogue of 81 Priority Marine Features (PMFs) that have been identified in the seas around Scotland. The catalogue serves as a reference for ongoing nature conservation action.

<http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=2428>

Welsh Government's programme 2016-2020

Taking Wales Forward 2016-2021 sets out the government's programme to drive improvement in the Welsh economy and public services, delivering a Wales which is prosperous and secure, healthy and active, ambitious and learning, united and connected.

<http://gov.wales/about/programme-for-government/?skip=1&lang=en>

Review of the Biological Recording Infrastructure in Scotland

The Scottish Biodiversity Information Forum's Advisory Group has this year undertaken to drive a review of the biological recording infrastructure in Scotland. It is intended that the Review will be cohesive across Scotland and, by seeking support from all stakeholders, the outcomes will benefit from a willingness and energy to make any transitions necessary to implement a new infrastructure.

<https://nbn.org.uk/news/review-biological-recording-infrastructure-scotlandprogress-update/>

Mitigation Case Studies Forum

The Bat Conservation Trust's Bats in the Built Environment Programme will be running a Mitigation Case Studies Forum on 24 January 2017. Please refer to the BCT website for more information:

http://www.bats.org.uk/pages/mitigation_case_studies_forum_2017.html

Northern Ireland Environment Agency publishes *Wildlife Law and You*

Aimed primarily at the general public, members may find this short guide of interest.

<https://www.daera-ni.gov.uk/sites/default/files/publications/doe/daera-2016-wildlife-law-and-you.pdf>

Leisler's Bat collision mortality at a wind farm in Ireland

The first recorded collision fatality of Leisler's Bat at an operating wind farm in Ireland has been verified by ecologists from INIS Ecology. The dead bat was found by an INIS ecologist using one of INIS' specially trained dogs for detecting bird and bat carcasses. For further information on details of the find and further carcass search information, please see the links below.

<http://www.inisecology.com/terrestrial-ecology/fatality-monitoring/>

Karl Falkenberg's reflections on EU sustainability

The former Director-General of DG Environment has published a reflections paper setting out a European vision for sustainability, which includes his views on the future of EU agricultural policy.

https://ec.europa.eu/epsc/publications/strategic-notes/sustainability-now_en

Living Planet Report 2016

WWF's *Living Planet Report* is the world's leading, science-based look at the health of our amazing planet. The latest edition shows both the impacts humans are having on the natural world and how we can solve these problems.

<http://assets.wwf.org.uk/custom/lpr2016/>

Cross-Sector Partnerships: Setting Up For Success

Darren Towers CEnv MCIEEM

Working in partnership has become a key way for environmental professionals to deliver their goals, something which this edition of *In Practice* explores in more detail. It looks at a range of collaborations to understand their successes and, importantly, the lessons we can all learn from the experience of others.

Whilst partnerships can be an effective way to accomplish something that is difficult to achieve by acting alone, working with other organisations, however like-minded, is never without challenge.

Partnerships are about more than sponsoring or funding an initiative. Likewise, working in partnership is not about putting a logo on a project, paying for an accreditation or just sitting on a committee with others. Partnerships are about true collaboration to achieve mutually beneficial goals. That means working with others – often across disciplines, sectors, territories, cultures and more. Inevitably, that can make delivery more complex.

So, how can we ensure that partnerships are set up for success from the start? This article offers some personal reflections drawn from working on partnerships in roles across the voluntary, regulatory, consultancy, local planning, and industrial sectors. While every partnership is different, there is a consistent set of considerations that can help put a partnership on the right track from the start – and make it sustainable into the future.

Understanding partnerships

First up, let's be honest. Partnerships are not always the right way to tackle a



Figure 1. *"Tackling a challenge in isolation is not always the right approach."*
Photo credit Darren Towers.

challenge. If a goal can be accomplished effectively by working in isolation, that is often much easier than bringing different parties to the table to achieve the same result. In partnerships, concerns often include loss of control or voice as there are more players involved; potential loss of flexibility or extended timescales for decision-making; or even worry about being beholden to partners with more influence (where they have provided the majority of funding, for example).

However, rarely is working in isolation the way to go (Figure 1). After all, our actions always impact on others, whilst third parties will almost always have an interest in our own work or an ability to

impact it. Likewise, acting without support or collaboration is less likely to ensure longevity of impact.

Partnerships can mean more cost-effective delivery and a greater ability to scale-up impact. Partners can bring different skills to the table; embracing diversity of experience, thought, culture, knowledge and skills also brings greater innovation, creativity, capability and capacity (Figure 2). Partnerships can open up previously unexpected or unplanned opportunities for organisations or individuals, and they can build the credibility and reputation of those individuals and organisations that are involved.

To fully realise these benefits, you have to make time to understand the mindset of partner organisations and build relationships with the individuals taking part (Figure 3). It is never just about 'good communications'; it should be about presence, understanding and commitment, and this does not just apply across sectors - it applies within your own organisation across departments and professions, too. All this means establishing some basic operating principles from the start.

The Partnering Initiative (an independent, not-for-profit organisation that helps drive cross-sector collaborations with a focus on a more sustainable global future; <http://thepartneringinitiative.org>) sets out three basic principles for successful partnerships: **equity, transparency and mutual benefit** (Tennyson 2011; Figure 4). The belief is that equity in a collaboration leads to respect for the added value that each party brings; transparency is key to building trust amongst partners who are then more willing to innovate or take risks; and mutual benefit leads to true engagement with relationships more likely to be sustained over time. Whether a partnership is planned or opportunistic, embedding this set of principles will mean a much greater chance of success from day one.



Figure 2. "Whilst there can be strength in numbers, collaborative partnerships bring more diversity and creativity to the table." Photo credit Darren Towers.

Setting up for success: Key considerations

As this edition of *In Practice* shows, every partnership is different and evolves along its own path. It is never a case of 'one size fits all'. To confuse things further, there is a wealth of information available online to help make partnerships a success – toolkits, frameworks, case studies, software and more (see Box 1 overleaf).



Figure 3. "Environmental partnerships bloom when parties understand each other and have planned well." Photo credit Darren Towers.



Figure 4. "Ensuring equity, transparency and mutual benefit in partnerships can put you more firmly on the road to success." Photo credit Darren Towers.

In such a busy space and with such diversity of considerations, it can sometimes be difficult to know where to start with a new partnership. However, personal experience suggests there are some key stages and considerations that can help set up for success.

Box 1. Inspiration and tools for cross-sector partnerships

For further inspiration on how to set up and run an effective cross-sector partnership, and to access useful tools or training, check out some of the links below. This is by no means an exhaustive guide but will certainly provide some food for thought.

The Partnering Initiative (TPI):

Independent, non-profit organisation offering resources including partnering toolkits and roadmap, culture navigator and access to training.

<http://thepartneringinitiative.org/>

Partnering for Inclusive Business Checklist:

A checklist from the TPI and Business Innovation Facility to help identify which parts of a project might need collaboration.

<http://thepartneringinitiative.org/the-partnering-for-inclusive-business-checklist/>

Partnerships for Sustainable Development:

A useful article on inclusive, cross-sector approaches.

http://www.waynevisser.com/wp-content/uploads/2012/05/paper_partnerships_sustainability_wvisser.pdf

Twelve Steps to Successful Partnerships:

A one-page PDF summary of things to consider when setting up a partnership.

http://thepartneringinitiative.org/wp-content/uploads/2014/11/12-steps_handout.pdf

Six Steps To Ensure Successful Cross-Sector Partnerships:

A useful article and easy read from Forbes on six key issues for partnerships.

<http://www.forbes.com/sites/gradsoflife/2016/07/14/6-steps-to-ensure-successful-cross-sector-partnerships/#4f2468854fd8>

The Brokering Guidebook:

The International Business Leaders Forum (IBLF) guide to the role and practical interventions of partnership brokers.

<http://thepartneringinitiative.org/wp-content/uploads/2014/08/TheBrokeringGuidebook.pdf>

The Collaborative Impact Forum:

Offers tools, resources, video, webinars, networking and a self-assessment framework for those working to bring about collective change.

<https://collectiveimpactforum.org/>

Partnerships: Frameworks for Working Together:

A comprehensive US report that looks at capacity building in non-profit organisations as a result of cross-sector partnership working.

<http://www.strengtheningnonprofits.org/resources/guidebooks/Partnerships.pdf>

Partnering for Success – Business Perspectives on Multistakeholder Partnerships:

A review by the World Economic Forum's Global Corporate Citizenship Initiative.

http://files.site-fusion.co.uk/webfusion112071/file/partneringforsuccess_2005.pdf

Unlocking the Power of Partnerships:

An overview of effective partnership working by KPMG.

<https://assets.kpmg.com/content/dam/kpmg/pdf/2016/01/unlocking-power-of-partnership.pdf>

Talking the Walk:

A communications manual for partnership practitioners from the TPI.

<http://thepartneringinitiative.org/wp-content/uploads/2014/08/TalkingTheWalk.pdf>

Moving On:

An IBLF guide to how to exit partnerships effectively and efficiently.

<http://thepartneringinitiative.org/wp-content/uploads/2014/08/MovingOnToolbook.pdf>

Box 2. Five key questions when considering cross-sector partnerships

Stage 1: “Do we want to do it?”

– Checking the fit with your organisation and the level of support from practitioners to leaders.

Stage 2: “Can we do it?” – Assessing the showstoppers and whether they prevent the partnership or can be creatively overcome.

Stage 3: “Should we do it?” – Understanding the likely impact of the partnership and whether the return on your investment justifies taking part.

Stage 4: “Should we do it with them?” – Doing your due diligence on project partners to understand strengths, weaknesses, opportunities and threats.

Stage 5: “How do we do it?” – Making sure you have the right systems, processes and resources in place to launch, stay on track and achieve your goals.

- **Stage 1: “Do we want to do it?”**
Assessing the broad fit of a potential partnership with the aims or vision of your organisation is a key first step. Does it fit with your strategy, aims or vision? Will the leadership of your organisation support it? If so, you have a strong basis for collaboration; if not, it will be a tough sell internally and a challenge to get buy-in. Sometimes an idea can make huge sense, but your organisation might not be the right one to help lead it or the timing might be completely wrong. If that is the case, consider how you could direct it to more appropriate partners – use your professional network.
- **Stage 2: “Can we do it?”**
You know the aspiration or opportunity fits with your organisation's goals and you can get leadership buy-in, but can you actually do it? Get those show-stoppers out of the way right from the start by identifying any prohibitive considerations or influences. They might be operational, commercial, legal, environmental or something else.

For example:

- **Health and Safety:** Do access, security, insurance or safety implications prevent the project?
- **Legal:** Can legal requirements, consents or conditions be met?
- **Financial:** Are sufficient finances in place for the duration of the project?
- **Environmental:** Are the environmental impacts of the proposal acceptable?
- **Reputation/relationships:** Will this damage the reputation of any partners? Will third parties block proposals?
- **Commitment:** Are partners fully committed? Is there buy-in from the top, from local teams and from champions to deliver the project?
- **Community fit:** Is this suitable for the local social context (e.g. politically and socially acceptable)?
- **Conflicts of interest:** Are there insurmountable risks or conflicts of interest with the project or partner(s)?

Think broadly about the potential show-stoppers. If there are none, or they can be creatively overcome, you know it fits and can be done. Make sure partnership working is the right way to address the challenge too. If that makes it too complex and the goals can be achieved another way, now is the time to set out on that path.

- **Stage 3: “Should we do it?”**

By now, you know that a collaborative partnership is the right way to tackle something and that it *could* actually be achieved. So, *should* you actually do it? Now is the time to consider if what you put in to the partnership will have enough of an impact or be a good enough return on your investment, whether that means funding, resources, time or something else.

Inputs: You will probably need to consider if you have the people and time to contribute; if they are skilled and knowledgeable enough; if you have enough capital to fund work; and if you have capacity to free-up expertise. Crucially, think beyond the initial phase of any project. Do you have enough

resource to invest for the full duration of the project so that early effort is not wasted later down the line?

Outcomes: Demonstrating a return on investment is critical. You need to know what this is, how you will assess it and how likely it is to be realised. That might mean achieving an environmental gain, meeting a legal obligation, or successfully influencing policy makers, communities, land managers or another stakeholder group. For a business, it might mean better connecting to customers or improving the communities that company is based in. Think beyond the obvious or immediate gains – achieving an environmental improvement might be the key goal but it may bring other benefits too, such as positive impacts on well-being, education or employment (Figure 5).

- **Stage 4: “Should we do it with them?”**

It fits your goals, there are no show-stoppers and you know it is going to generate the results you need – at an acceptable cost. That means it is time to consider if the partners are the right ones; it calls for basic due diligence and some ‘getting to know you’ homework. After all, enthusiasm or availability of funds from a partner do

not necessarily mean appropriateness to deliver (and a poor choice of partner can be complicated at best or disastrous at worst!). Keep it as simple as a traditional SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis if needed. At this stage, typical considerations might include:

- **Knowledge / credibility:** Do partners have the right technical expertise and credibility or reputation? If not, how would you overcome this? Do they have a track record and can they deliver?
- **Goals and culture:** Can you agree on environmental, technical, financial, social and political goals? Do your values and ethics match?
- **Collaborative gain:** If a partner is not strong in a particular field, can that be offset by sharing skills or knowledge?
- **Risks:** Are the wider risks of working with any partner understood and manageable (e.g. financial, reputational, legal, health and safety)?
- **Relationships:** Do they have positive relationships with other bodies or individuals capable of affecting the partnership? Is the partnership likely to be championed by the partner as



Figure 5. “Environmental partnerships can bring other social benefits too – recreation, education, well-being and more.” Photo credit Darren Towers.



Figure 6. "Finding like-minded project partners and doing your due diligence is key to success."
Photo credit Darren Towers.

a whole or is there a risk that it relies on one individual alone (who may leave or 'burn out' at some point)?

- **Mutual benefit:** Is everyone going to get what they need out of this partnership and are they willing to share joint benefits (e.g. credit in the media or professional recognition)?

Remember, whilst preparation and planning require effort and may feel onerous, it all ensures that problems further down the line are avoided. (Figure 6)

- **Stage 5: "How do we do it?"**

At this stage, it is almost a case of 'all systems go'. You are sure it fits, show-stoppers are managed, the costs and benefits stack up, and the project partners are understood and appropriate. One final piece of homework will set you up for success – getting the right systems or processes in place to launch smoothly, stay on track and achieve those goals. This relies on a number of things, including:

- **Awareness-raising:** Stakeholders have all been consulted, everyone

understands the partners and their aspirations, and all relevant stakeholders know the plan and have signed off any necessary permissions.

- **Partnership working agreements:** Objectives, roles and responsibilities, evaluation mechanisms ('key success measures') and communication plans are all in place. A Terms of Reference or Memorandum of Understanding is often used to achieve this. Often overlooked, though, is a process for what happens if things go wrong – do you need to set out how to tackle grievances, for example?
- **Technical checklist:** Make sure that legal and financial agreements, health and safety plans or risk assessments, baseline surveys or data are all in place. Have processes in place to keep these up to date too.
- **Partnership lifecycle considerations:** Is there a succession plan or contingency plan in place in case key personnel move on or to cover the risk of 'leadership exhaustion'? Are mechanisms in place to share learning and

continually improve? Has an exit strategy been agreed if partners need to leave? Has post-project legacy been considered and agreed?

Final thoughts

Whilst the five stages outlined here might seem time-consuming, they can be as detailed or light touch as needed. Making time to plan in what can be a frantic working world is important – neglecting it can set back a partnership or even be counter-productive. Whatever the case, the five steps should help ensure that any partnership gets off to a good start, which is key for collaborative success. Find out what works for your organisation, talk about it honestly and share the highs and lows. That way, we all benefit from the learning and it puts us in an even stronger position to bring about positive environmental change and a more sustainable future for all.

Reference

Tennyson, R. (2011). *The Partnering Toolbook: An Essential Guide to Cross-Sector Partnering*. The Partnering Initiative in association with the International Business Leaders Forum, London.

About the Author



Darren is Head of Education and Skills at EDF Energy and Chair of the EDF Energy LGBT Supporters Network. Previously Head of Sustainability and Environment at EDF

Energy, he has also held environmental, ecological and sustainability roles in Thames Water, Surrey Wildlife Trust, the Environment Agency, Berkshire's county and unitary authorities, and in commercial consultancy. He volunteers as a member of the *In Practice* Editorial Board and CIEEM Diversity Working Group. This article is based on personal views from Darren's working experience and on studies he completed as part of a Postgraduate Certificate in Cross-Sector Partnerships with the Cambridge Programme for Industry (now Cambridge Institute for Sustainability Leadership).

Contact Darren at:
Darren.Towers@edfenergy.com

Partnerships in Action – Europe and Beyond

Debbie Bartlett FCIEEM
University of Greenwich

Keywords: coppice, ecosystem services,
landscape, partnership

I feel privileged to have participated in a number of international partnership projects, both while working in Local Government and the Forestry Commission and during my time at the University of Greenwich. While an obvious benefit of international collaboration is accessing funding to do things that might otherwise not be possible, there are also significant benefits in continuing professional development and in sharing technical knowledge about ecology and environmental management.

Introduction

All partnership working depends upon finding common ground while accepting differences in points of view and working practices, and this is particularly nuanced when working across languages and cultures. In the early 1990s, I worked on two coastal and woodland management projects that were partnerships between stakeholders in Kent and Northern France. They were funded by INTERREG, a programme financed by the European Regional Development Fund usually involving member states with a shared boundary. The second project was easier than the first as we had learnt to accept some minor differences, such as in the understanding of the word 'deadline'.

Further afield, I have worked with Charles Darwin University (CDU) in Northern Australia on the Darwin's Landscape Laboratory proposal, a bid made by Bromley Council for World Heritage Site status for the house, gardens and countryside near London where Darwin lived and worked for forty years, including his work on 'The Origin of Species' (<http://www.darwinslandscape.co.uk>). As a result of working on the Historic Landscape Assessment, part of the World Heritage bid, funding was secured for four MSc students to visit Darwin, Northern Territory, for a memorable month taking part in the

centenary celebrations, and presenting material on Darwin's work. The partnership also led to an academic teaching partnership that gave MSc students from the University of Greenwich and CDU access to distance learning courses at either University – a particular benefit for UK students wanting to learn more about tropical forestry.

Case studies

Not only can partnership working be a route to funding but also it is immensely rewarding, particularly working in multi-disciplinary teams. Some recent examples follow.

1. EuroCoppice

COST is the longest-running European framework supporting trans-national cooperation among researchers, engineers and scholars across Europe. COST Action *FP1301 Innovative management and multifunctional utilisation of traditional coppice forests - an answer to future ecological, economic and social challenges in the European forestry sector*, for which I am UK lead, began in October 2013 and will run till May 2017. It involves representatives from over 30 countries exchanging knowledge about traditional coppice woodland management with the ultimate aim of formulating European policy for the coppice industry.

Effective partnership working

While there is no funding for research from COST, basic expenses to attend conferences and to contribute to specific activities, such as topic working groups, are reimbursed. Effective partnership working is facilitated by themed conferences, which are combined with management committee and topic working group meetings. To date these have been held in Italy, England, the Czech Republic, Romania, and Belgium (Figure 1).



Figure 1. Silviculture workshop in Romania.



Figure 2. Chestnut yard in Italy.

Partners have the opportunity to engage in Short Term Scientific Missions (or STSMs) to study specific aspects in depth, when common issues are identified. Partners can also be supported to host training schools for postgraduate students from different countries to come together, usually for a week, to share experiences and study aspects of coppice woodland management. One STSM, to compare chestnut *Castanea sativa* management in Northern Italy and South East England (Bartlett 2016), raised awareness of the impact of the oriental chestnut gall wasp *Dryocosmus kuriphilus* - introduced on scion wood imported from China - on honey and nut production, and the biological control methods available to combat it. In June 2015, this wasp was identified in England by amateur entomologists, first in woodlands near Sevenoaks, Kent, and later in St Albans. A Defra entomologist was quickly invited to Italy for an STSM, funded by the COST Action, to learn from their experience of dealing with this insect (Figure 2). The STSM report evaluating the potential control options (Everatt 2015) has been welcomed by the Forestry Commission. The most recent training school, held in July 2016 near Boppard, Germany, focused on biodiversity and was led by CIEEM member Dr Peter Buckley. It was promoted by partners and via the EuroCoppice website and involved 19 students from 12 countries and 15 different nationalities. There were two participants from the UK, from the Universities of Bangor and Greenwich.

Key lessons learnt

It has been instructive to learn that the prevalent view across most of Europe is that coppice should be converted to high forest. Partners from different countries have contrasting views and one of the tangible benefits of meeting and particularly visiting woods together is in understanding these different views and questioning our own assumptions. The concept of semi-natural ancient woodland is virtually unknown outside the UK and in other countries there is frequent reference to 'near to nature' systems which appear to us to be plantations. In Germany, woodland can only be referred to as coppice if it has been cut within the last forty years, less than some traditional rotation lengths here; in some countries cutting coppice is illegal. This variation in views is both stimulating and challenging - even before short rotation coppice for fuel is considered! My specific role in EuroCoppice is to lead the working group on governance in the European coppice sector. Leaving aside the tricky issue of what is meant by governance, it has been sobering to hear about the problems for effective woodland management in the former communist countries where returning woodland to private ownership is fraught with difficulties. It puts concerns about fragmentation of ownership into perspective as woods are returned to people who have no interest in them, and are unable to sell or manage them. The next event will be a conference on coppice products, to be held in

Limoges, France, and the culmination of the COST Action will be part of the IUFRO (International Union of Forest Research Organizations) conference in September 2017 where a policy paper will be presented (see <http://www.iufro.org/events/anniversary-congress/> for more details). This will serve to remind decision makers firstly that coppice is important, secondly that a commercial coppice industry still exists, and finally that policy should be aiming to support those involved in this traditional activity that has so many wider benefits.

2. A partnership approach to managing the invasive shrub *Prosopis juliflora* in India

This British Council funded collaboration between the University of Greenwich and the Gujarat Institute of Desert Ecology (GUIDE), India, although ultimately very successful, was initially problematic. In fact, I offered to return funding on the basis that it was impossible to achieve the original aims set out in the proposal.

Indian scientists were concerned that the invasive shrub *Prosopis juliflora* was having a negative impact on biodiversity. The plant was introduced to prevent the spread of the salt desert and the GUIDE scientist wanted an eradication strategy, based on analysis of satellite imagery interpretation of the rate of spread. The Greenwich team were sceptical as to whether this was a realistic approach, and felt more information would be required before any decisions could be made and therefore suggested applying landscape character assessment and ecosystem service evaluation to the *P. juliflora* issue. Fieldwork, carried out over four visits, revealed the great extent to which rural people were dependent on this plant for fuel, fodder, honey and medicinal gum, making eradication an unpopular – as well as an impractical - option with the local communities.

Effective partnership working

Participatory working, with locals rather than with the ecologists from the Gujarat Institute of Desert Ecology alone, enabled a re-consideration of the role of *P. juliflora* in India (Figure 3). The landscape assessment and ecosystem service evaluation led to the production of a 'Natural Character Area' profile, along



Figure 3. Participatory working with local people in India.

the lines of those produced by Natural England. This identified that, in addition to valuing *P. juliflora* for a range of attributes, local people urgently needed fences as they were organising 24-hour patrols to prevent their crops being eaten by the protected wild ass *Equus hemionus khur*, nilgai *Boselaphus tragocamelus* and wild boar *Sus scrofa cristatus*.

Here in the UK, we make strong hedges from thorny shrubs, which are totally stock proof if they are 'laid' to form an impenetrable barrier. The British Council granted additional funding to enable research to see if *P. juliflora* would respond to this treatment. Three members of the UK team returned to India to see if we could turn the invasive plant into a stock proof fence.

Hedge laying requires the main stem to be cut almost through to enable it to be lowered towards the horizontal. The first plant wilted visibly in the high temperatures but by the next morning had completely recovered. Practical experimentation continued, using locally available axes, and a line of *P. juliflora* along a roadside was formed into a 'living fence' in preparation for a demonstration workshop. In addition, we worked with local farm workers to turn old chemical drums into simple charcoal retorts, a significant increase in efficiency over the earthburn techniques that were currently in use. Both the 'living fences' and the charcoal retorts were welcomed and the information sheets – English one side, Gujarati the other – are being distributed by both the Forestry and Rural Development services in the region (Figure 4). A great success – but a long way from the original intention of eradicating *P. juliflora*,

although commercial charcoal production was suggested as a means of reducing the impact of the shrub on the most important grasslands, such as the Lala Indian Bustard Sanctuary.

Key lessons learnt

It took a long time to get funding approved by the British Council, such that the former Greenwich student who had originally been the key contact at GUIDE had left to complete his PhD before approval was given. This created a problem as there was no one in GUIDE with any experience of either landscape or ecosystem service assessment. The disruption had the unexpected benefit that, instead of equal numbers of student exchanges, seven Greenwich MSc students were fully funded to work in India, providing practical research for theses as well as valuable experience of working in a different culture. The take-home message is that, although on paper partnerships are between organisations, in reality they are between individuals and, however well planned, it can be difficult to predict outcomes accurately.

Conclusion

Partnerships, whether with one person to combine skills on a project, or with organisations, can be productive and enjoyable but they can be very hard work. Identifying who you can – and who you cannot – have an effective working relationship with is important. It can be tempting but enthusiasm for collaboration, while important, is not enough to sustain a project in the long term. Partnerships are with people, even when nominally between organisations; individuals make partnerships work.

References

- Bartlett, D. (2016). A comparison of the chestnut industry in S E England and Northern Italy. *Quarterly Journal of Forestry*, **110**: 51-55.
- Everatt, M. (2015). Evaluation of the potential of control options used in Italy for the management of the oriental chestnut gall wasp (*Dryocosmus kuriphilus*) in the UK. Available at <https://www.eurocoppice.uni-freiburg.de/intern/pdf/stsm/stsm-report-everatt>.



Figure 4. Information sheets in English and Gujarati are distributed to local communities.

Not all partnerships go well. There is a lot of hard work involved, much of it outside working hours; it requires flexibility and being adaptable to partners' needs and this can mean letting go of personal aims and objectives. I've learnt to be cautious, to get agreements written down in plain English and I am grateful for my experiences as a trained mediator.

About the Author



Dr Debbie Bartlett MCLI FCIEEM is Principal Lecturer in Environmental Conservation at the University of Greenwich and combines this with consultancy. While

her life might seem exciting with overseas travel, it also involves lecture writing, marking, and all the administration that makes up the life of an academic.

Contact Debbie at:
d.bartlett@gre.ac.uk

How Inclusive Are You When Working With Others?

Claire Vetori CEnv MCIEEM
Environment Agency

Keywords: awareness, behaviour, bias, collaborative, inclusive, unconscious bias

Working in Partnership and in multi-disciplinary teams requires the ability to see something from another perspective when focusing on issues important to decision-making, planning and practical implementation of environmental management, ecology and conservation.

We need to work across disciplines and maximise funding opportunities far more than we used to - this requires us to do more to hear people and ensure we are heard ourselves. Awareness and understanding are often the first steps in helping us to make people feel more included. I believe that this occurs when people can begin to appreciate things from a different perspective and manage any unconscious bias. It can be at a business level, team level, or individual level. It is a choice we can all make on a daily basis but how often do we make that choice? Often all it takes is making a conscious decision to step back and be curious and open to what is being said or taking a different approach to something you have, perhaps, always done in a particular way. The quote *'If you always do what you've always done, you will always get what you've always got'* comes to mind.

When working in partnership and in multi-disciplinary teams with others, I hope this article will give you something to think about, question and discuss with colleagues. There are many benefits to being inclusive and working collaboratively. For me, the most successful projects have been when people start to become more engaged: asking more questions, requesting more information and wanting to get more actively involved in what is going on.

As you read this article, I encourage you to ask yourself this question: How inclusive am I when working with others?

Each of us will have preferences or associations with objects and people. These can lead to unconscious bias – the way in which our minds process information automatically, making instant judgements and assessments. The good news is that this is completely normal and something we all do. However, when working with others, including working in partnership with other people, stakeholders and organisations, bias can unintentionally influence our behaviour and our decision-making. Sometimes, this can mean you miss an opportunity or leave people feeling excluded.

However, if we are aware of our unconscious bias, we can identify whether our bias could influence our behavior and our decision-making in any particular situation. This can help us to be more open and inclusive when working with others and to work more collaboratively together as a team. Consider that if only half the people likely to be affected by a decision or project are engaged and represented at the table when decisions are made, the outcome could only be half as good as if all of those likely to be affected are represented and have a voice. The result? A potential opportunity to deliver something “great” could have been missed. If the decisions made do not represent all of those affected, time and money will have been spent on delivering an outcome that is not acceptable to some parties and conflict can result.

Working in partnership: When was the last time you chose to take a different perspective on something or made a different choice?

As professionals, we can often make assumptions about a project before we have begun to understand and familiarise ourselves with its scope or before we have even visited the site and its location. We may rely on our knowledge and our experiences of what we have done before. Yet every project is unique – the local surroundings are different, local history and previous management will have played a part, and local communities each have their own views and priorities about what could be changed or improved.

When the pressure is on or time is in short supply, it can be a challenge to remember to step back and not just listen to the views of others and what our stakeholders and partners are telling us but to really hear what they are saying and take it on board.

Sharing data and knowledge and ensuring we have a common language are all key activities on any new project. Sitting alongside this, we should also identify all stakeholders and partners and encourage them to share their local knowledge and data to help us become aware of, or access, what we don't know. Identifying any data gaps is crucial. It can also help us to identify any assumptions we have made inadvertently, particularly if the information we receive challenges our preconceptions or comes from a limited number of sources. In addition, it can provide us with

Definition of Bias

Noun: Inclination or prejudice for or against one person or group, especially in a way considered to be unfair.

Verb: Cause to feel or show inclination or prejudice for or against someone or something

Source: Oxford English Dictionary, Oxford University Press

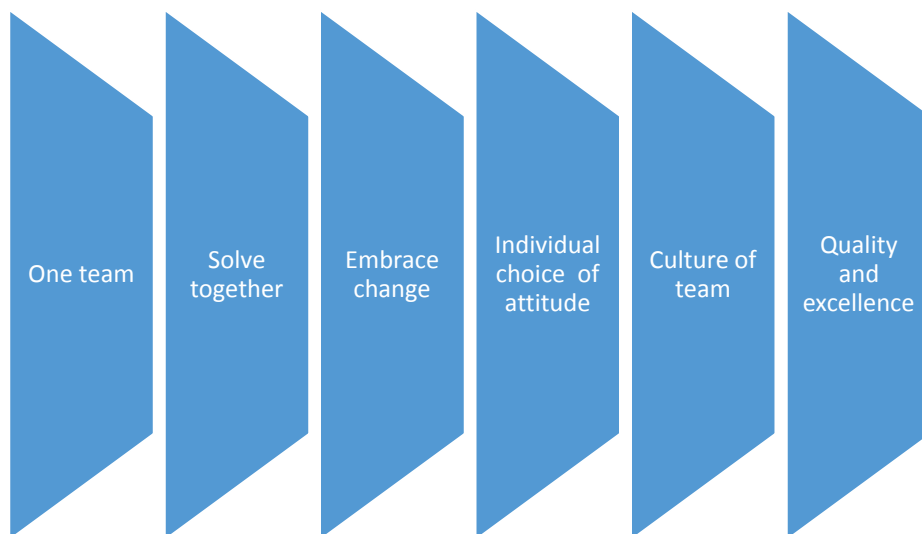


Figure 1. Collaborative approach taken by the Thames Estuary Asset Management Programme (TEAM2100).

a valuable insight into what has worked well in the past, what hasn't worked well, and where the opportunities lie so that we can maximise the benefits.

Case study: collaborative working on TEAM2100

For the last two years, I have been the Environmental Advisor on the Environment Agency's Thames Estuary Asset Management Programme or TEAM2100. The objective of the programme is to carry out capital investment on tidal defences along the River Thames efficiently, including maintenance, refurbishment and replacement work over a 10-year period. The defences include the Thames Barrier and 350 kilometres of floodwalls and embankments, smaller barriers, pumping stations and floodgates.

The partners

TEAM2100 is a multi-partner initiative and the first long-term programme to be implemented from the Government-approved Thames Estuary 2100 Plan (a strategic flood risk management plan for London and the Thames estuary through to the end of the century). The partners are wide-ranging and include local authorities, statutory organisations such as Natural England and the Marine Management Organisation, local communities and groups, such as the Thames Estuary Partnership, and landowners.

Effective partnership working

One of the key challenges was to work as an integrated team in a shared office with CH2M, Balfour Beatty and other specialist contractors. By developing a set of shared values, we have all signed up to the drivers that underpin the approach of the team (see Figure 1).

Geographically, the Programme stretches from the tidal limit of the River Thames in Teddington, through London and into Southend and Sheerness in the outer estuary (in Essex and Kent respectively). With a programme of this scale, working together with the many different local communities, organisations, stakeholders, existing partnerships and landowners is key.

Lessons learnt

There are many advantages to partnership working but some of the benefits of being inclusive and working collaboratively are:

- Higher productivity
- Higher staff morale
- More creativity and innovation.

Back to unconscious bias

By taking the time to learn about unconscious bias, and challenging ourselves to identify any unconscious bias we may have, we are more likely to be able to step back and be open to hearing the viewpoints of others so that we are more inclusive. This is especially important

when we are working in partnership and in multi-disciplinary teams with others who hold very different perspectives to our own. Consider asking yourself the following questions when you next find yourself making assumptions in a conversation or disagreeing with what is being said at a meeting:

1. Is this true?
2. What evidence do I have?
3. Is this always true?
4. How would I feel if I were in that situation?

Finally

Having taken the time to read this article, now again ask yourself the question:

How inclusive am I when working with others? Is your answer different or the same? What could you do differently next time? Is there anything you are going to try or do differently to improve how open and inclusive you are when working with others? It may make the difference between the success or failure of a partnership project.

About the Author



Claire Vetori CEnv MCIEEM MIEMA graduated with a degree in Pure and Applied Ecology and now provides technical leadership, legislative and strategic advice,

training, mentoring and facilitation services to colleagues at the Environment Agency. Claire joined the Environment Agency as a Principal Environmental Project Manager in the National Environmental Assessment Service (part of National Operations) and is currently on assignment as the Diversity and Confidence Programme Lead. Claire has worked in the environmental industry for over 20 years, in both the private and public sectors.

Contact Claire at: claire.vetori@environment-agency.gov.uk



Spring Conference 2017 Mainstreaming Biodiversity into Future Cities

22rd March, London

This conference explores the wider benefits of including biodiversity in designing and planning our sustainable cities of the future. Speakers will make the business case for creating opportunities for biodiversity, resolving the conflicts that can arise and demonstrate how architects, engineers, landscape designers and ecologists can work together to deliver biodiverse urban environments.

For more information and to book your place, please visit our website: <http://www.cieem.net/spring-conference-2017>

Working in Partnership to Improve the Consideration of Biodiversity in the Planning Process

Catherine Wyatt
Bat Conservation Trust

Keywords: development control, ecological
assessment, planning tool, stakeholders

The Partnership for Biodiversity in Planning comprises 19 organisations representing the conservation, planning and development sectors who are dedicated to working together to improve the consideration of biodiversity in the planning process. The Partnership is developing a web-based planning tool to support small/medium-scale developers and householder applicants in assessing whether their development proposal is likely to affect protected and priority species.

Used at the pre-application stage, the tool will help ensure ecological surveys are considered early enough and that the correct ecological evidence is submitted with a planning application. Guidance and further information covering protected and priority species in planning will also be available within the tool providing support to the applicant as well as ecologists and other stakeholders. The breadth of expertise and experience within the Partnership will ensure that the planning tool and other outputs that are being developed as part of this four-year project will benefit all those involved in the planning process and will also lead to meaningful outcomes for biodiversity.

Introduction

The State of Nature report (Hayhow *et al.* 2016), an authoritative assessment of the

state of the UK's wildlife, revealed that 56% of the species assessed in the report had declined over the last 50 years. The major driver of species loss has been habitat loss alongside environmental pollution, climate change, displacement of native species by invasive and non-native species, and over-exploitation (Natural England 2010).

The planning system plays a central role in delivering biodiversity objectives through appropriate legislation and policy, and planners must take biodiversity into consideration in their decision-making. The Government's Natural Environment White Paper (HM Government 2011) sets out how the planning system should protect and enhance the natural environment. Biodiversity 2020 (Defra 2011), the Government's strategy for people and wildlife, spells out how reforms to the planning system will help reduce

environmental pressure from planning and development. The main element to the reforms was the adoption of the National Planning Policy Framework (NPPF) in March 2012 (DCLG 2012), which requires that planners and developers should aim to conserve and enhance the natural environment through the planning system. Paragraph 109 of the NPPF states that *'The planning system should contribute to and enhance the natural and local environment by ... minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'*.

A report to Defra on the effectiveness of planning policy in protecting biodiversity



Organisations involved in the Partnership for Biodiversity in Planning

Feature Article: Working in Partnership to Improve the Consideration of Biodiversity in the Planning Process (contd)

(Tyldesley and Bradford 2012) found that outcomes for biodiversity were better when expert ecological advice was received by the local planning authority, and where survey and ecological reports were provided with a planning application. However, the results of a survey looking at the levels and sources of ecological competence within local planning authorities in England (Oxford 2013) showed that many local planning authorities have neither the competence nor adequate capacity to meet their statutory obligations for biodiversity conservation. The Partnership for Biodiversity in Planning will help to address this by providing tools targeted specifically at the development control process that will improve the consideration of biodiversity in the planning process.

Project objectives

Led by the Bat Conservation Trust, the Partnership for Biodiversity in Planning was established in December 2014 in response to concerns around the consideration of biodiversity in planning, both before an application is submitted and also in the determination of planning applications.

This four-year project has three key objectives:

1. To produce a planning tool that:
 - Allows non-ecologists to check whether expert ecological advice should be sought in relation to the impact of a proposed development on protected and priority species as well as statutory designated sites, and
 - Provides a central point of reference for currently available protected species guidance for use by those involved in the planning process.
2. To encourage practitioners to use an ecologically informed method of searching for and interpreting species distribution data in the planning process.
3. To challenge the perception that biodiversity considerations within the planning process are a hindrance to economic growth.

The partners

The Partnership includes representation from species' Non-Governmental Organisations (NGOs), planners,

government ecologists, developers, ecological consultants and local environmental records centres (Box 1).

Planning tool

When planning applications are submitted without the necessary ecological reports, the delays that can result are a cause of frustration for the developer/applicant and also for the local planning authority. Although often a result of ignorance on the part of the applicant, it can lead in some cases to criminal prosecution under the relevant wildlife legislation.

The planning tool being developed by the Partnership will provide a solution. The planning tool will take the form of an Interactive Trigger List (ITL). This will build on the trigger list that was developed by the Association of Local Government

Ecologists (ALGE) in 2007 but will be web-based, interactive and free to access. The ITL is currently under development but its structure is shown in Figure 1.

The Interactive Trigger List will present the developer/applicant with a series of questions about the development proposal and will give an indication of whether professional ecological input is needed, directing users to engage a competent consultant ecologist, as well as the types of species survey that may be required. The tool will also provide clear and concise guidance and further information on specific issues that may need to be addressed, highlighting the legislative and policy background behind these requirements. This will focus on survey methods, outlining what is involved, as well as mitigation measures, habitat enhancement and monitoring techniques for protected and priority species. The guidance will be provided by the species' NGOs represented within the Partnership. It will be aimed at the applicant so it will be tailored for a non-specialist audience but useful links to further information for ecological consultants and local government ecologists will also be provided.

Feedback from our recent consultation with local planning authorities suggested that the Interactive Trigger List would be most useful at the pre-application stage to ensure applications are complete and to address all of the relevant ecological issues up front. It will be particularly beneficial to the small- (including householder) and medium-scale developer as they are often not aware that their development proposal could have an ecological impact. In their Call for Solutions (DCLG 2008), the authors noted that for small business users, householders and those who rarely come into contact with the planning system, making a valid planning application can be confusing and daunting. The Interactive Trigger List will provide these users with greater certainty over the information required when addressing biodiversity issues within development proposals.

The Interactive Trigger List will also support development decisions by local planning authorities. An output sheet will show if ecological evidence is required for the planning application and will enable the local planning authority to assess whether

Box 1. Organisations within the Partnership for Biodiversity in Planning include:

Amphibian and Reptile Conservation Trust
Association of Local Environmental Record Centres
Association of Local Government Ecologists
Bat Conservation Trust
Birmingham City University
Buglife
Butterfly Conservation
Chartered Institute of Ecology and Environmental Management
Greenspace Information for Greater London Community Interest Company
Home Builders Federation
Mammal Society
North Devon Council
People's Trust for Endangered Species
Plantlife
Royal Society for the Protection of Birds
Royal Town Planning Institute
Somerset County Council
The Wildlife Trusts
Town and Country Planning Association

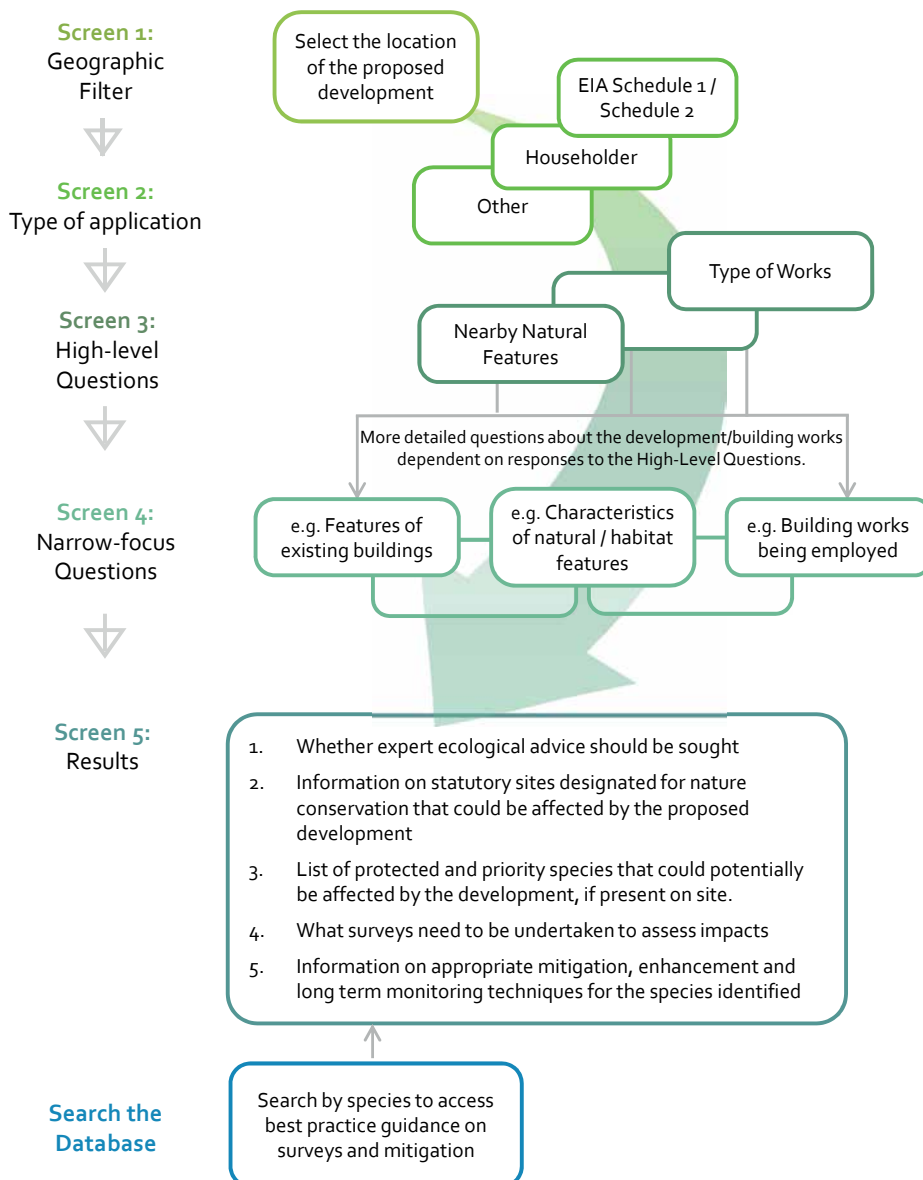


Figure 1. Intended structure of the Interactive Trigger List

the correct material has been submitted alongside a planning application.

Measuring the potential impacts of a development proposal on biodiversity interests is an iterative process and requires expertise and professional judgement. The Interactive Trigger List will not replace the need for professional ecological expertise or the role of the local government ecologists but it will provide guidance where professional support is unavailable. It is being designed to help reduce the problem of ecological issues arising late in the planning process whilst recognising the current resource limitation that many local planning authorities face with regards to the provision of expert ecological advice.

Guidance around the interpretation of species distribution data

Paragraph 165 of the National Planning Policy Framework (DCLG 2012) states that *'planning policies and decisions should be based on up-to-date information about the natural environment and other characteristics of the area'*. This is important to ensure effective decision-making that is compliant with statutory obligations and policy requirements and also achieves desired outcomes for biodiversity.

The Partnership would like to see better use being made of species distribution data that is commonly used as part of the

desk study for ecological surveys. They will be producing guidance for practitioners around the interpretation of protected species information that is provided as part of a data search, to inform ecological survey work and reporting. This guidance document is currently being drafted and will complement recent guidance produced by the Chartered Institute of Ecology and Environmental Management in their Guidelines for Accessing and Using Biodiversity Data (CIEEM 2016).

Challenging negative perceptions

The project outputs will be used to demonstrate that biodiversity considerations can be addressed in a straightforward and robust manner. We will be seeking to influence attitudes and to change behaviours and perceptions towards protected species and development projects and will need widespread support in order to do this. We have held initial discussions with Statutory Nature Conservation Organisations, the Department for Communities and Local Government and the Local Government Association and we will be liaising with other key stakeholders such as the Planning Officers Society, Planning Advisory Service and the devolved administrations over the coming months as the development of our tool progresses.

Conclusions

The Interactive Trigger List has the potential to simplify, streamline and improve the consideration of protected and priority species in the planning process. By being accessible to all users, including members of the public, the tool will provide better transparency and therefore greater accountability for developers. Using the Interactive Trigger List will help developers to provide the necessary ecological evidence alongside their planning application and will provide local planning authorities with greater consistency in their approach to validating applications.

The Partnership is currently engaging with key decision makers to gain support for the project, to identify possible problems and concerns and to explore ideas for rolling out the Interactive Trigger List. A working prototype has just been constructed and the final tool will be ready to trial with the

Feature Article: Working in Partnership to Improve the Consideration of Biodiversity in the Planning Process (contd)

Box 2. Key aspects of partnership working

Working with partners that add value to the project

Each organisation in the Partnership represents either protected and priority species or key stakeholders in the planning process. This collaboration of developer, planning and ecological expertise brings together different skills and knowledge and will provide more effective solutions than any one organisation could achieve on their own. The existing networks and resources of the different organisations within the Partnership will also be beneficial when it comes to promoting and disseminating the planning tool, data search guidance and project messages.

Effective partnership working

It is important that partners are clear about their role within the Partnership. Our project Steering Group is composed of both Partner Organisations and Associate Organisations. They all have an equal say in the development and delivery of the project but Partner Organisations will, in addition, also deliver specific outputs for the project as set out in a formal Memorandum of Understanding (MoU). The project Steering Group meets once or twice a year, as needed, but also receives quarterly progress reports. This makes sure they are kept updated on project activities.

Indicators of success

One of the key indicators of success for the project will be the number of local planning authorities that are signposting applicants to use our planning tool. Our planning tool is currently under development but earlier in the year we consulted a number of local planning authorities on our ideas for the tool. The consultation was launched with the support of a couple of members of the project Steering Group and feedback was gathered through a questionnaire survey and from discussions at two workshops.

Key lessons learnt

It is important that the membership of any partnership includes the right people. Earlier this year the Partnership recruited additional representatives from the planning sector and house building industry to the project Steering Group to help inform the development of the planning tool and to ensure it will meet the needs of its intended users.

key user groups within the next year. We will be actively encouraging local planning authorities to direct householder and small/medium developers to the tool and we will be developing case studies promoting the benefits of using the Interactive Trigger List to support this. Early feedback has highlighted that mandatory requirements on local planning authorities are not always successful and uptake of the tool could be more effectively encouraged using positive promotion of the benefits.

This partnership project is being led by the needs of users. We are looking for local planning authority staff, developers and ecologists to provide feedback on the outputs being developed and to test and trial the planning tool. We are also seeking information on the costs that have resulted

by not considering biodiversity appropriately during the planning process that we can use to support the use of the tool.

More information on the Partnership for Biodiversity in Planning and its aims is available from the website: <http://www.biodiversityinplanning.org/>

If you have any feedback about the project or would like to get involved please contact the project team at: pbp@bats.org.uk

Acknowledgements

This four-year project and the work of the Partnership for Biodiversity in Planning is supported with funding from the Esmée Fairbairn Foundation.

References

- CIEEM (2016). *Guidelines for Assessing and Using Biodiversity Data*. Chartered Institute of Ecology and Environmental Management, Winchester.
- DCLG (2008). *The Killian Pretty Review. Planning applications: A faster and more responsive system – A Call for Solutions*. Department for Communities and Local Government, London.
- DCLG (2012). *National Planning Policy Framework*. Department for Communities and Local Government, London.
- Defra (2011). *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. Department for Environment, Food and Rural Affairs, London.
- Hayhow, D.B., Burns, F., Eaton, M.A., Al Fulajji, N., August, T.A., Babey, L., Bacon, L., Bingham, C., Boswell, J., Boughey, K.L., Brereton, T., Brookman, E., Brooks, D.R., Bullock, D.J., Burke, O., Collis, M., Corbet, L., Cornish, N., De Massimi, S., Densham, J., Dunn, E., Elliott, S., Gent, T., Godber, J., Hamilton, S., Havery, S., Hawkins, S., Henney, J., Holmes, K., Hutchinson, N., Isaac, N.J.B., Johns, D., Macadam, C.R., Matthews, F., Nicolet, P., Noble, D.G., Outhwaite, C.L., Powney, G.D., Richardson, P., Roy, D.B., Sims, D., Smart, S., Stevenson, K., Stroud, R.A., Walker, K.J., Webb, J.R., Webb, T.J., Wynde, R. and Gregory, R.D. (2016). *State of Nature 2016*. The State of Nature partnership. Available at <http://www.rspb.org.uk/forprofessionals/science/research/details.aspx?id=363867>
- HM Government (2011). *The Natural Choice: Securing the Value of Nature*. The Stationery Office, London.
- Natural England (2010). *Lost life: England's lost and threatened species*. Natural England, Peterborough.
- Oxford, M. (2013). *Ecological Capacity and Competence in Local Planning Authorities: What is needed to deliver statutory obligations for biodiversity?* Report published by the Association of Local Government Ecologists. Available at <http://www.alge.org.uk/publications-and-reports>. Accessed 21 November 2016.
- Tyldesley, D. and Bradford, G. (2012). *Planning Policy and Biodiversity Offsets. Report on Phase II Research: Effectiveness of the Application of Current Planning Policy in the Town and Country Planning System*. Report for the Department for Environment, Food and Rural Affairs, London.

About the Author



Catherine Wyatt works for the Bat Conservation Trust and is the Project Officer for the Partnership for Biodiversity in Planning. She has extensive

experience in developing and managing partnership projects.

Contact Catherine at:
CWyatt@bats.org.uk

Using the Evidence Plan Process in Wales – A Partnership Approach in Action

Jo Pickard CEnv MCIEEM

Principal Ecologist, Tidal Lagoon Power

Keywords: coastal processes, Habitats Regulations Assessment, Nationally Significant Infrastructure Project, Severn Estuary, Statutory Nature Conservation Bodies, tidal lagoons

An Evidence Plan is a voluntary mechanism that aims to agree in advance the evidence that an applicant needs to supply to the competent authorities to enable them to undertake a Habitats Regulations Assessment of a proposed development. The Evidence Plan process allows the opportunity for detailed discussion and information sharing between parties to allow a consensus of opinion to be reached between Statutory Nature Conservation Bodies (SNCBs) and other key stakeholders. This article sets out how the Evidence Plan process is being used to engage with partner organisations regarding proposals for a tidal lagoon in Wales.

Introduction

From September 2012, applicants of Nationally Significant Infrastructure Projects located in England, or both England and Wales, have been able to agree Evidence Plans with relevant SNCBs (Defra 2012). Fewer than ten Evidence Plan processes have been started to date. The process is a good example of partnership working in that it ensures all parties agree on scope prior to assessment thereby avoiding abortive costs and disagreements at a later date, effectively reducing project risk.



Figure 1. Outline of proposed Cardiff lagoon. © Crown copyright and database rights 2014 Ordnance Survey 0100031673.

The Evidence Plan process in England was run by Defra's Major Infrastructure and Environment Unit but the tidal lagoon proposal is outside their jurisdiction because it is located entirely within Wales (note that the responsibility for Evidence Plans has recently been subsumed by Natural England). Wales does not currently have an equivalent body to co-ordinate Nationally Significant Infrastructure Projects. However, the developer, Tidal Lagoon Power, recognised the benefit of adopting the Evidence Plan process and therefore decided to explore with SNCBs the feasibility of this partnership approach. The partners agreed that the Evidence Plan process could also be expanded and used

to guide the assessment of the Project in relation to the requirements of the Water Framework Directive and a Marine Conservation Zone assessment, if required. Progress made so far and some of the lessons learnt are reported in this article, and the next steps in this iterative procedure are described.

Severn Estuary case study

Tidal Lagoon Power intend to submit an application in 2018 to construct a tidal lagoon to produce renewable electricity within the Severn Estuary Special Area of Conservation, Special Protection Area and Ramsar site, between Cardiff Docks and the mouth of the River Usk (Figure 1). In

Feature Article: Using the Evidence Plan Process in Wales – A Partnership Approach in Action (contd)

March 2015, it was agreed with Natural Resources Wales, Natural England and the Environment Agency that it would be appropriate to follow an Evidence Plan process due to the complexity, cross-border effects (Wales and England) and scale of the project. The Planning Inspectorate confirmed that it would lead on the equivalent functions previously undertaken by the Major Infrastructure and Environment Unit for projects in England, and act as a facilitator.

The Evidence Plan process builds on the formal scoping that was undertaken for the Project (Tidal Lagoon Cardiff Ltd, 2015). The objectives were to reduce risk and delays by engaging early with SNCBs and other key stakeholders to agree the scope of surveys and assessments. It allows the opportunity for detailed discussion and information sharing between parties to allow a consensus of opinion to be reached regarding the Habitats Regulation Assessment and Water Framework Directive assessment.

Project partners, Steering Group and Expert Topic Groups

The Evidence Plan process was initiated in March 2015 and is being led by Tidal Lagoon Power, overseen by a Steering Group including members from the Planning Inspectorate, Natural Resources Wales (Advisory), Natural England and the Environment Agency. Watching briefs provided by the Marine Management Organisation and Natural Resources Wales Marine Licensing Team keep up to date with the project and the approaches that are agreed. The Steering Group oversees the Evidence Plan process and deals with issues arising from the Expert Topic Groups that sit below it. The Steering Group is also responsible for securing agreement between the parties to the Evidence Plan document, which sets out the mechanisms and approach to agreeing the information and evidence requirements for the Project. Three Steering Group Meetings have been held to date.

Six Expert Topic Groups have been formed as part of the Evidence Plan process (Figure 2):

- Coastal Processes
- Intertidal and Subtidal Benthic Ecology
- Coastal Birds
- Fish

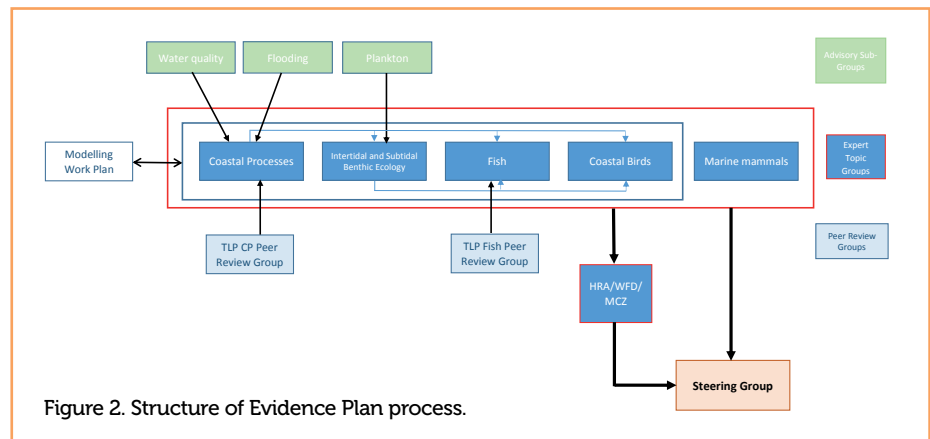


Figure 2. Structure of Evidence Plan process.

- Marine Mammals
- Habitats Regulations Assessment / Water Framework Directive / Marine Conservation Zones (HRA/WFD/MCZ)

Each group has an associated Terms of Reference, which sets out their responsibilities within the Evidence Plan process. The membership of the groups

has been widened where appropriate to increase the knowledge base and encourage collaborative working. For example, the Royal Society for the Protection of Birds has joined the Coastal Birds Expert Topic Group; and the Devon and Severn Inshore Fisheries and Conservation Authority has joined the Fish Expert Topic Group (Table 1).

Table 1. Membership of Expert Topic Groups.

Organisation	Expert Topic Group					
	Coastal Processes	Intertidal & Subtidal Benthic Ecology	Coastal Birds	Fish	Marine Mammals	HRA/WFD/MCZ ⁸
National Resources Wales						
Natural England						
Environment Agency						
Welsh Government						
Devon & Severn IFCA ¹						
Cefas ²						
DCWW ³						
SECG ⁴						
Swansea University ⁵						
RSPB ⁶						
WWT ⁷						
Meetings held	5	1	1	2	1	2

- 1: Inshore Fisheries and Conservation Authority
- 2: Centre for Environment, Fisheries and Aquaculture Science acting as advisors to Natural Resource Wales Marine Licensing Team
- 3: Dŵr Cymru Welsh Water
- 4: Severn Estuary Coastal Group
- 5: Swansea University acting as advisors to Natural Resource Wales (Advisory)

- 6: Royal Society for the Protection of Birds
- 7: Wildfowl & Wetlands Trust (note that after attending the first meeting of the Coastal Birds Group, WWT withdrew from the process for the foreseeable future due to other commitments)
- 8: Habitats Regulations Assessment / Water Framework Directive / Marine Conservation Zone

Effective partnership working: process and progress

Three Steering Group meetings have been held and the final agreed Evidence Plan was provided to the Planning Inspectorate in July 2016, sixteen months after the first meeting. The process took considerably longer than the recommended three months set out in Defra guidance (Defra 2012). However, given the resource constraints that the SNCBs are under (limited staff availability for meetings and multiple agencies to coordinate), coupled with the fact that this procedure has not been undertaken in Wales before and the complex cross-border nature of the Project, it quickly became apparent that a three-month target was simply unrealistic.

Some Expert Topic Groups meet more often than others, depending on the evidence required to underpin the assessments (Table 1). For example, the Coastal Processes Group has met five times to date because the majority of potential impacts of the proposed lagoon will be driven by changes in coastal processes throughout the 120-year operational lifespan of the project. The SNCBs have requested comprehensive evidence regarding the baseline conditions of waves, tides, sediment, currents, etc., throughout the entire Severn Estuary (Figure 3). Tidal Lagoon Power supports this view and has invested in significant geophysical and oceanographic data collection over the last three years. This is particularly important because the project is located within a European designated site. The information collected is now feeding into the coastal process modelling upon which impact predictions will be based.

Two independent Peer Review Groups have also been established to support the Coastal Processes and the Fish Expert Topic Groups, to act as a further sounding board for survey proposals, adequacy of data collection and other issues (Figure 2).

Other Expert Topic Groups, such as Coastal Birds, have met just once to date, because survey methodologies are tried and tested and therefore the main discussion points cover issues such as the intensity and duration of survey effort.

Lessons learnt

The time and resources required to set up and administer the Evidence Plan process should not be underestimated, both from the developer's side and the SNCBs. To ensure resources are available, Tidal Lagoon Power put in place a Planning Performance Agreement with National Resource Wales to cover core staff who are dedicated to the Project and an agreed hourly rate for specialist advice. Discretionary Advice Service agreements with Natural England and the Environment Agency cover staff input at an hourly rate. The rate for each of the SNCBs is different. Estimated time inputs and costs are agreed in advance. To date, the pre-application advice provided by SNCBs to the Evidence Plan process has cost Tidal Lagoon Power approximately £330,000.

In order to make the Evidence Plan meetings more productive and efficient, relevant information and papers need to be supplied to the SNCBs at least three weeks in advance of meetings so that representatives have time to review the material and can attend meetings fully prepared. Early information sharing allows SNCBs to discuss and agree a position prior to a meeting (which is charged to Tidal Lagoon Power), helping to ensure that advice is consistent. Comment trackers are used to formally record responses and then final minutes are circulated for agreement. This time needs to be factored into any programme.

In order to maximise the efficiency of the process, all parties should consider who are the most appropriate attendees (i.e. to ensure attendees have the appropriate technical background and authority to

make decisions), what information is needed in advance to inform discussion and what the focus of each meeting should be. It is helpful if those involved have experience of the Environmental Impact Assessment (EIA) process and, preferably, large infrastructure projects. With up to three SNCBs in attendance and various specialists from each organisation, consistency of advice and the importance of being prepared is paramount. Each SNCB has a case manager who is responsible for the distribution of information and collation of internal responses.

The positive outcomes so far include provision of an open forum for constructive dialogue, the establishment of clear communication lines between organisations and the ability to raise and (hopefully) deal with any key issues early in the process. Some aspects of the procedure are continuously being refined, such as how the cross-cutting themes and interdependencies between the topic groups are dealt with; the need to collect evidence that is proportionate to the requirements and feasible to obtain; and exactly how any areas of disagreement can be dealt with.

Next steps for the Evidence Plan process

During this stage of pre-application, the focus of the Expert Topic Groups has been on baseline data collection in order to inform the future assessments. As the results of the surveys are collated and the design of the lagoon is finalised, the focus of future meetings will turn to topics such as the assessment process (for example, what further baseline information is needed



Figure 3. The Severn Estuary.

Feature Article: Using the Evidence Plan Process in Wales – A Partnership Approach in Action (contd)

Partnership overview

Project Objectives

To reduce risk and delays to the Project by engaging early with SNCBs and other key stakeholders to agree the scope of surveys and assessments.

The Partners

Natural Resources Wales (NRW), Natural England (NE), the Environment Agency (EA) and the Planning Inspectorate (PINS) are key partners. In addition, the Royal Society for the Protection of Birds (RSPB), Welsh Government, Devon and Severn Inshore Fisheries and Conservation Authority (IFCA), Centre for Environment, Fisheries and Aquaculture Science (Cefas), Dŵr Cymru Welsh Water (DCWW) and the Severn Estuary Coastal Group (SECG) all sit on various Expert Topic Groups.

Effective partnership working

Partnership working has made a difference because we are agreeing issues in a phased manner, rather than presenting Tidal Lagoon Power's completed assessment to the SNCBs. If issues were not discussed or raised until late in the process, there would be little time to respond and therefore a significant risk to the Project timescales.

Tidal Lagoon Power is ensuring regular dialogue and communication with all parties involved. In order to make sure adequate staff resources are available, Tidal Lagoon Power is funding core staff within NRW and staff time for all SNCBs. We are encouraging the SNCBs to reach a common position and to provide consistent advice.

By getting the SNCBs involved from the outset and throughout the process, issues can be dealt with early on. When the Development Consent Order (DCO) application is finally made, the focus of the DCO Examination can be on any outstanding areas of disagreement.

Publication of the Evidence Plan document in September 2016, setting out the mechanisms and approach to agreeing the information and evidence requirements for the Project, was a key milestone. A key indicator of success will be to reduce to a minimum the number of outstanding issues of disagreement remaining by the time of the DCO submission, which will then form the focus of the DCO hearing.

Successes:

- Developing effective working relationships
- Agreement on survey methodologies
- Identifying key issues early in the process with time still to address them
- Involvement of non-statutory bodies in the process

Problems:

- Difficulties in reaching consensus on issues
- Pre-conceived perceptions of the Project and requirements for survey work
- Trying to achieve agreement within timelines
- Lack of partners' experience of Nationally Significant Infrastructure Projects and the EIA process

Lessons for the future

Tidal Lagoon Power might push back more strongly on evidence requirements, e.g. SNCBs insistence on undertaking two years of bird surveys of the entire Severn Estuary SPA, despite there being one full year for the footprint, one full year for the SPA and a comprehensive existing evidence base consisting of over forty years of WeBS data for the wider Estuary. The cost of these surveys (approximately £140,000) could potentially have been better spent elsewhere, perhaps increasing knowledge of features within the Severn Estuary where much less is known or exploring possible mitigation/compensation measures. A review of the results obtained will confirm if this was indeed the case.

when limited data has been collected by SNCBs prior to Tidal Lagoon Power surveys), appropriate criteria for assessment (such as significance criteria for fish impact assessment) and data collection for impact monitoring. However, the ongoing iterative nature of the procedure enables issues to be addressed early so robust, streamlined decisions can be taken and a clear audit trail can be produced. This will then assist in the development of Statements of Common Ground (SoCG) with relevant parties as the application progresses.

In conclusion, the Evidence Plan process is worth pursuing even though there is no formal mechanism for its application to Nationally Significant Infrastructure Projects within Wales. This method could also form a blueprint in the future for large developments (not necessarily Nationally Significant Infrastructure Projects) to deliver certainty in approach, reduce risk and encourage collaborative working within proactive partnerships.

References

Department for Environment, Food and Rural Affairs (2012). *Habitats Regulations. Evidence Plans for Nationally Significant Infrastructure Projects*. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69601/pb13825-habitats-evidence-plans.pdf. Accessed 6 October 2016.

Tidal Lagoon Cardiff Ltd (2015). *Proposed Tidal Lagoon Development, Cardiff, South Wales. Environmental Impact Assessment Scoping Report*. Available at <http://www.tidallagoonpower.com/projects/cardiff/>. Accessed 6 October 2016.

About the Author



Prior to working at Tidal Lagoon Power, Jo spent fourteen years working as a Principal Ecologist at an international engineering consultancy and as a Conservation Officer

at the Countryside Council for Wales (CCW, now NRW), on a wide range of projects specialising in HRA, EIA, protected species casework and SSSI management.

Contact Jo at:

jo.pickard@tidallagoonpower.com

The Mountains & The People – Partnership in Practice

Tom Wallace

Activity Programme Manager,
Cairngorms Outdoor Access Trust

Keywords: conservation training, National
Parks, Scottish landscape, upland habitats

The Cairngorms Outdoor Access Trust (COAT) is at the forefront of delivering practical conservation projects throughout Scotland. As an independent conservation charity, working in partnership has been vital to ensuring projects can be developed and delivered effectively.

This article introduces COAT's most ambitious project to date, The Mountains & The People. The project brings together public, private and third sector partners whilst covering vast geographic areas in a bid to conserve our most iconic mountain landscapes and inspiring the next generation of conservationists, ecologists and environmental managers.

Introduction

The Cairngorms Outdoor Access Trust, having successfully delivered the £2.1 million Cairngorm Mountain Heritage project to repair mountain paths across the Western Cairngorms area, subsequently identified similar issues throughout much of Scotland and particularly within Scotland's two National Parks. Centuries of recreational activity, combined with Scotland's mild and moist climate, have spelt disaster for some of the most fragile upland habitats. The Mountains & The People project was formed in 2013 in a bid to tackle these issues.

Strategic Partnerships

The Mountains & The People project started delivery in May 2015 and will run until June 2020. It represents a partnership project on a landscape scale never before attempted in Scotland. Working across



the vast geographic areas covered by Loch Lomond & the Trossachs and the Cairngorms National Parks requires significant investment, both financially as well as in knowledge, skills and expertise. This is only feasible through a partnership approach to development and delivery.

Over a two-year period from 2013 to 2015, COAT brought together a high-level partnership to help develop the project, with representation from the bodies responsible for monitoring and managing conservation at a strategic level in Scotland. These included the two National Park Authorities, Scottish Natural Heritage and Forestry Commission Scotland, each of whom brought information, support and guidance. This cooperative approach ensured that the project would be targeted effectively and that the quality of work delivered would be of the highest possible standard.



Senior personnel from partner organisations on site visit with conservation trainees at Conic Hill on the banks of Loch Lomond.

Partners on the Ground

Whether it be private landowners, ranger services, community groups or mountain users, those living on, working with or enjoying the mountains would ultimately be those most touched by the project and therefore critical to supporting the development and ultimate delivery of the works. During the development phase, these partners were brought together through a series of workshops and meetings to assist in the prioritisation of the proposed project activities. The information acquired during this phase was used to ensure that the project would be confident of providing a legacy of both environmental and social benefits to the Parks as well as to the wider population of Scotland.



Feature Article: The Mountains & The People – Partnership in Practice (contd)

From Development to Delivery

One of the great challenges of partnership working can be that one person's priority may not always match another's. However, through experience of developing complex projects and through close dialogue with all partners, COAT was able to find consensus within the group around the key areas for project delivery and most importantly a model within which this could be funded and delivered. Consensus was achieved through an evidence-based approach to site assessment and prioritisation. A detailed survey was carried out of all proposed sites, and stakeholders were asked to identify those that would benefit most from investment, whether that be reduced environmental damage, increased quality of visitor experience or reduced maintenance legacy. Consideration was then given to how 'deliverable' each of the proposed sites would be. Limits to deliverability included total capital cost, willingness of landowners to see works undertaken, site restrictions such as site designations, availability of materials and environmental constraints.

In addition, COAT worked with a range of stakeholders to understand who the potential target audiences for any social aspect of the project might be. This research took account of work done in both National Parks in developing their



Conservation volunteers on Meall a'Bhuachaille in the Cairngorms.

respective Partnership Plans, data from visitor surveys and ranger work plans, and regional and national strategies in areas such as tourism and recreation. The resulting target audience identified for the project was broad and included everyone from day-trippers to serious walkers, existing and potential volunteers, communities and employers.

Based on this evidence, The Mountains & The People project applied for funding from the Heritage Lottery Fund in 2014 for two distinct areas:

1. Capital investment in practical repairs to 125 km of upland paths and associated habitats.
2. Delivery of a comprehensive Activity Plan to engage the people of Scotland and beyond in conserving our mountain landscapes.

Funding for such large projects does not come easily. However, a commitment made by the project's strategic partners to contribute both cash and in-kind support resulted in a grant of over £3.2 million from the Heritage Lottery Fund. The resulting £6.4 million project will run until summer 2020 and is being led by a team specifically recruited by COAT to deliver across all aspects of the work.

1. Practical path repairs

A large proportion of the project budget will be invested in physical improvements to some of the most popular routes in the National Parks. All works are carried out in line with industry best practice following the Upland Path Advisory Group (UPAG) guidance on the construction standards for Scotland. UPAG is itself a partnership formed to ensure that path work in the uplands is carried out in a safe and controlled manner to a set standard.

The project team work closely with landowners, local authorities, user groups and contractors to schedule and deliver work in these remote and often inhospitable locations in a manner that reduces risk, protects the remaining habitats and species, and allows completion within the project timeline. Partners' knowledge of sites, particularly the way in which the flora and fauna interact with the path network, is important in avoiding problems. An on-going dialogue between landowners and users ensures that any potential conflicts are identified and addressed.

2. Engaging people in the project

The project Activity Plan includes a Training, Education and Volunteering programme across both National Parks.



Contractors on Mayer in the Cairngorms during airlift of stone to site.
Photo credit: Paul Diffley



Glittering Skellies, Cairngorms, before and after path restoration.



the path. Career opportunities will be highlighted through work with further and higher education establishments.

Volunteer Opportunities – Volunteers are the life-blood of the conservation sector and the project is committed to offering over 1,200 volunteer opportunities between 2015 and 2020. These include a wide range of activities from practical conservation tasks to running public engagement events.

Task-Based Volunteering – Volunteers are recruited from major centres of population to receive training and get involved in practical projects over weekends.

Adopt-A-Path Volunteering – Hill users are encouraged to take responsibility for keeping an eye on a path of their choice through the adopt-a-path scheme. Information is fed back to the project team on the condition of paths.

Vocational Training – Young people receive practical training and national qualifications to enable them to take advantage of employment opportunities generated by the project.

Accredited training to Scottish Vocational Qualification (SVQ) Level 2 and 3 is being delivered through two training centres, one in Balloch and one in Aboyne. The training in Environmental Conservation will provide a foot on the ladder for those keen to enter the conservation industry. Trainees are partnered with employers during their course to give them practical experience of work on the mountain.

Education – Work with schools across the country will introduce young people to conservation, ecology and environmental management in a manner that aims to bring these subjects to life. Case studies using people-counter and transect data are being developed to complement curriculum-linked educational resources, and schools are being offered the opportunity to visit and take part in practical conservation work. Schools and colleges are encouraged to take advantage of opportunities to investigate the success of the path restoration scheme through specific research projects studying the recovery of vegetation, recovery from erosion and numbers of people using



Lochnagar in the Cairngorms, before restoration – path eroded and braided to 5 m wide.



Lochnagar after restoration – path defined at 1.2 m wide, drainage installed and landscaped to the surrounding site.

Feature Article: The Mountains & The People – Partnership in Practice (contd)

Partnership overview

Project Objectives

- **Preserving the heritage values** of the mountains in Scotland's National Parks for current and future generations. Path erosion degrades mountain landscapes and habitats: the project directly addresses this through repair and upgrade to a prioritised suite of paths.
- **Engaging the people of Scotland and beyond.** Though awareness of upland path erosion has grown substantially in the UK in recent years, particularly amongst mountaineers and conservationists, clear ways for the wider public to engage and help have been lacking.

The Partners

The project was developed and is led by the Cairngorms Outdoor Access Trust (COAT), which brought together Forestry Commission Scotland, Scottish Natural Heritage and Scotland's two National Park Authorities (Cairngorms and Loch Lomond & the Trossachs) in a formal partnership. Each partner contributes both skills and financial resource, with the primary match-funding partner being the Heritage Lottery Fund. Further partnerships are being formed with third sector organisations, landowners and individuals who share a common interest in the work of the project.

Working with partners that add value to the project

Our formal partners have a regional or national remit to manage or protect the mountain environment and therefore their involvement in the project ensures all activity fits well with wider policies and objectives, and is delivered to a high standard. These partners are also able to source and commit financial resources to the project, which allows COAT to lever in larger funding commitments from the likes of the Heritage Lottery Fund.

Partners on the ground often provide the best means of communicating activity, with established relationships and a detailed understanding of how both communities and the landscape function within their area.

Effective partnership working

A project steering group has been convened which meets quarterly to monitor the project and make high-level project decisions. The board is kept informed by project officers reporting from subgroups, each with a specific focus on areas such as upland path delivery, communications, education and volunteering. The subgroups meet regularly and make decisions to allow day-to-day operations to progress effectively.

Indicators of success

The success of the project is monitored through a project Evaluation Plan. Success indicators include quantitative measures such as distance of path work completed, number of volunteers engaged or number of trainees completing a training course; qualitative aspects of delivery are equally important.

It is essential that the works delivered in such remote and fragile habitats are done well at the outset rather than requiring future repair, so attention to detail is essential.

Likewise, when motivating a volunteer workforce it is important that the quality of their experience is such that they encourage others to take part.

The project is reliant upon partner support in the delivery of all aspects of the project whether that be ranger-led events, landowner consent for path works or the scrutiny of our partnership board.

Key lessons learnt

The project has just passed its first-year milestone and much has been achieved across both the Activity Plan and capital projects. A key lesson learnt has been to maintain communication with partners even when there is not a lot to communicate. This is particularly important when working with volunteers who give so much to a project.

The **wider public** are engaged through visitor information, events, publicity and internet-based activities such as social networking.

The Cairngorms Outdoor Access Trust prides itself upon delivering projects where all the partners benefit and this could not be more true than through The Mountains & The People initiative. None of these activities would be possible without on-going partner involvement, whether that be the dedication of our volunteers, the cooperation of landowners or the contributions made by funders, big and small.

Further information

To keep up to date on how the project is progressing and the opportunities to get involved you can follow the project on social media @mountainspeople or via our website www.themountainsandthepeople.org.uk. For more information on COAT you can go to www.cairngormsoutdooraccess.org.uk.

About the Author



Tom Wallace is the Activity Programme Manager for The Mountains & The People project and is employed by the Cairngorms Outdoor Access Trust to manage the delivery

of the project's Activity Plan. Tom has over 15 years' experience in conservation, education and community development.

Contact Tom at:

tom@cairngormsoutdooraccess.org.uk

Featured CIEEM Training Events

European Protected Species for Consultants

Manchester
16 February 2017

NEW LOCATION

This masterclass looks in detail at the current law on European Protected Species (EPS) and the implications of this legislation for 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.

Introduction to Ecological Impact Assessment

London
24 January 2017

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.

Effective Communication Skills for Women

Birmingham
7 February 2017

Results from a study by CIEEM's Equality and Diversity Working Group indicate that many women working within the ecology and environmental sector find their workplace communication is not as effective or as confident as they'd like it to be. This event will explore a range of skills and techniques to help women achieve confidence, credibility and composure in any workplace situation.

Peregrine Falcon: Ecology, Survey and Mitigation

Tamworth
23 February 2017

Run over one day, this course provides an up-to-date understanding of peregrine ecology, current conservation status and examples of effective survey. Delegates will visit a range of mitigation projects to help understand the importance of timing, precautions to be taken during development projects and the implementation of mitigation.

Water Vole Live Trapping, Care and Restoration

Lifton, Devon
14-15 March 2017

This advanced course aims to familiarise experienced practitioners with the practical elements of water vole trapping, considerations for maintaining water voles in captivity and techniques to assist with successful restoration. This course complements our one-day Water Vole Mitigation training in providing comprehensive coverage of the 2016 *Water Vole Mitigation Guidelines*.

Using R for basic statistics in Ecology and Environmental Management

Dundee
22 March 2017

NEW

This new course has been developed to help practitioners gain confidence in the use of R open source software simple statistical analysis of ecological and environmental data. Through guided tutorials and practical exercises delegates will gain confidence in reading data into R, generating numerical and graphical summaries of their data and carrying out simple t-tests and regression analysis.

Report Writing for EcIA

London
1 March 2017

This one-day course, aimed at Intermediate-Advanced practitioners, will focus on producing good quality Ecological Impact Assessment (EcIA) reports following CIEEM's *Guidelines for Ecological Report Writing*. The training will explore the challenges faced in producing ecological reports, offer generic guidance on EcIA report structure and content (including ES chapters), proportionality, 'fit for purpose' and how to avoid common pitfalls.

Habitats Regulations Assessment (HRA) of Projects

Leeds
31 January 2017

This one-day course provides a thorough understanding of the overall purpose, process and methodology of the HRA of projects. As well as covering relevant policy and legislation, practical workshops and presentations will be used to explore the key stages of the HRA process, with professional tips and hints on compliance and best practice.

Ecological Clerk of Works

Birmingham / Manchester / London
7 February / 6 March / TBC

This one-day course explores how an effective ECoW can ensure that biodiversity features are protected from the types of activities encountered during construction, the knowledge skills and communication methods needed to fulfil the role effectively, awareness of practical on-site mitigation methods for a range of situations and client liaison to avoid conflict with relevant legislation or planning consents.

Fingringhoe Wick Managed Realignment – Successful Partnership Between the Essex Wildlife Trust and the Environment Agency

Andrew May FCIEEM
Conservation Manager
for Essex Wildlife Trust

Merle Leeds CEnv MCIEEM
Project Manager
for Environment Agency

Keywords: conservation success, inter-tidal habitat, managed realignment, shared conservation objectives, volunteers



Tide entering the breached seawall at Fingringhoe. Photo credit Merle Leeds.

The Fingringhoe Intertidal Habitat Creation Project has created 22 ha of new, internationally important, inter-tidal habitat on the Colne estuary, Essex. The Project was managed through a central partnership between the Environment Agency and Essex Wildlife Trust with additional partners coming on board at different times. These included Natural England, neighbouring landowners, the local natural history society, Thames Water, Herts & Middlesex Wildlife Trusts, and around a hundred volunteers.

This flagship project was conceived in 2011 and delivered in 2015 when a 300-metre breach in the seawall was constructed at Fingringhoe. This landscape-scale conservation project not only enhances biodiversity improvements on site, but also supports internationally and nationally designated sites.

Objectives

1. Create 22 hectares of intertidal habitat, 4 hectares of floodplain grazing and 1 hectare of freshwater reedbed.
2. Form a core partnership between the Essex Wildlife Trust and the Environment Agency to deliver this habitat, drawing on expertise and knowledge from both organisations.
3. As the Project developed, to include all interested parties in a constructive and inclusive wider partnership.
4. Aim to exceed best practice methods in habitat creation.
5. Ensure that the visitor experience to the site included a 'wow' factor as well as increasing the enjoyment of visiting the extension to Fingringhoe Wick Nature Reserve.

Introduction

Saltmarsh in Essex has been undergoing erosion due to 'coastal squeeze', where rising sea levels cause the saltmarsh plants to be drowned between the rising tides and the fixed sea defence. Such losses threaten coastal defence, water quality, fisheries and treasured landscapes, as well as valuable ecosystems and wildlife, including important wildfowl populations. Across Essex, over 300 hectares of saltmarsh have been lost since 1988 and in the Colne estuary there has been a net loss of 49.5 hectares (Cooper *et al.* 2001, Thomson *et al.* 2011).

The site at Fingringhoe was identified as having potential for managed realignment due to the site's poor agricultural value and existing vulnerability to flooding. The Essex and South Suffolk Shoreline Management Plan (October 2010) highlighted the deteriorating condition of the seawall, and the sea defence was overtopped by the tide in the tidal surge along the East coast in December 2013. Careful evaluation indicated that the shape of the site, linear to the estuary, was ideal for managed realignment. The site's topography was also suitable with the land rising naturally at the back thereby removing the requirement for a new sea defence.

Fingringhoe Wick lies adjacent to the site and was Essex Wildlife Trust's first nature reserve, opened in 1961. It is set in a spectacular position overlooking the Colne estuary, a few miles south-east of Colchester, in north Essex. It is a wildlife haven, with diverse habitats attracting hundreds of different bird species including nightingale *Luscinia megarhynchos*.

Initial partnership and shared conservation objectives

In 2011, Essex Wildlife Trust began investigations to ascertain if the project was feasible and to identify all necessary permissions. They approached the Environment Agency as a potential partner at the same time as holding discussions with the landowner; the site was in private ownership with a mix of arable and livestock farming. It was of paramount importance that the landowner was kept fully informed and, to this end, a legal Options Agreement was negotiated between the Essex Wildlife Trust and the landowner to allow the planning and investigations to take place.

At about the same time, a formal partnership between the Environment Agency and Essex Wildlife Trust was established in the form of a Legal Agreement drawn up under Section 30 of the Anglian Water Authority Act 1977. This Deed specifies future land use of the site and also details the responsibility of each signatory. The Agreement was drawn up by lawyers for both the Environment Agency and Essex Wildlife Trust and specifies, amongst other things financial contributions and commitments, timescales, principles behind joint publicity,

construction responsibilities, consent responsibilities and also details steps to take should the partnership flounder or fail.

This paperwork has gathered dust on a shelf, and it is testament to the success of the partnership that we have had no call to draw upon its meticulous detail. Instead, the ethos and aims captured at this early stage have underpinned and driven the commitment and enthusiasm of everyone involved. Shaping the team and ensuring people feel an ownership of the project was crucial to success.

New partners and careful preparation

At the outset, the aspiration was to undertake and deliver a project that exceeded best practice methods. Essex Wildlife Trust wanted the whole scheme to enhance biodiversity and give visitors a memorable experience. Early on, we met with local landowners, the Local Authority, Parish Council, Natural England, and the Harbour Authority to explain the goals for the site. In addition, a prominent display was erected adjacent to the site at the existing Reserve Centre to give Essex Wildlife Trust members an insight into what the Trust was trying to achieve.

It was obvious that there was a wealth of knowledge and enthusiasm that we needed to try and harness from a range of places. The delivery of the Project was made powerful by this engagement with volunteers, neighbouring landowners, and a variety of professionals. No additional legal agreements were created but a number of more informal partnerships were developed. One adjacent landowner offered easier access to the site across their land during the construction phase, in addition to allowing some of their land to be incorporated into the overall design, which allowed a greater area of habitat to be created. Natural England established the basis for the future agri-environment scheme from the outset and was constantly involved either in the design or the consenting process.

In keeping with the aspiration of trying to exceed best practice, at each step we drew on the experience of a range of external organisations. Froglife were commissioned to assess the reptiles on site and provide suggested improvements to the mitigation

strategy. Place Services at Essex County Council joined the partnership to review and oversee all archaeological investigations and results.

Whilst carrying out computer modelling of the realignment site, the consultants CH2M were asked to use their experience in the design of the breach. Flow speeds were designed to be less than 1 m/s. Evidence from other European realignment sites was used directly to improve and inform the design at Fingringhoe.

Environmental Impact process, licence and planning applications

Environment Statements were prepared as part of the Environmental Impact Assessment process and were submitted to Colchester Borough Council and the Marine Management Organisation to accompany the planning and marine licence applications. As a consequence of the extensive consultation and liaison with partners and other interested parties from the outset, all conservation bodies were in support of the application and no objections were received by either Authority. Furthermore, many members of the public who had attended presentations given by Essex Wildlife Trust and wanted to demonstrate their support for the project, sent letters of support to Colchester Borough Council endorsing the proposal.

Working with partners to optimise the value of the project

It was really important to ensure that everyone who was involved in the Project had a clear understanding of their involvement and how they could contribute. A Project Steering Group was established and we met as frequently as required. Everyone had a voice, we had clear agendas, and a real 'team' evolved. As with most things, communication was fundamental to the success of the Project. Essex Wildlife Trust staff suggested habitat enhancements that were incorporated into the engineering aspects of the work. Physical features have been calculated to be at optimum height for saltmarsh creation and bird foraging, and the overall design has visitor experience as a key driver.

Feature Article: Fingringhoe Wick Managed Realignment – Successful Partnership Between Wildlife Trust and Environment Agency (contd)

The Environment Agency contributed its LiDaR (Light Detection and Ranging) data for the site so that we could accurately predict water levels, extent of tidal inundation and flow paths. Summer aerial surveys will be carried out by the Geomatics Department of the Environment Agency over the coming five years to monitor the establishment of saltmarsh.

A single-year Agricultural Tenancy Agreement was established between the Wildlife Trust and the previous landowner. This Agreement set out the continued farming of the site right up to the breach in the seawall. Both the crops grown and the livestock on site helped prepare for the realignment. The barley crop helped strip nitrogen from the soil and sheep kept the grass sward height down.

During the early stages of the project, the existing ecological value of the site was carefully assessed. Water voles *Arvicola amphibious* were found to be present in some of the agricultural ditches. In line with the ethos of striving to go 'above and beyond' routine mitigation, we worked on a spin-off partnership with Herts & Middlesex Wildlife Trust, Bishop's Stortford Natural History Society, Thames Water, Natural England, the Environment Agency and local volunteers. This partnership involved the translocation of the water voles from Fingringhoe to the River Stort as part of a catchment-wide re-introduction to this river.

Archaeological surveys were undertaken by Archaeology South East from the University of London before and during the re-alignment. This included a geophysical survey searching for archaeological imaging and excavation of five trenches. Evidence was found of Roman activities comprising a hearth, an additional area of burning, a ditch and a post hole. The discovery of this Roman saltern is significant in Essex and adds to the corpus of knowledge for this group of monuments.

Dealing with unexpected events

In December 2013, during the preparation for the managed realignment and whilst the land was still in private farming ownership, the site flooded. The seawall overtopped during a tidal surge and the site was 75% inundated with seawater. The soil was ruined and the crop the following year was extremely poor. We feared that any hibernating reptiles would have perished where the saltwater remained on site.

Our ecological surveys of the site had been completed prior to this flood and we needed to re-evaluate our mitigation works. We were very concerned about the potential impacts on reptiles so we brought in an independent consultancy experienced in reptile translocation, Abrehart Ecology, and together with Natural England we revised our reptile mitigation. We were able to adapt and be flexible due to the experience of members on the Steering Group.

Natural England was an important partner throughout the Project and we were able to call upon their experienced staff for a wide range of issues and queries that we faced.

Fund raising appeal

An appeal to Essex Wildlife Trust members took place after all the necessary permissions had been granted. An impressive £145,000 towards the purchase of the land was raised. Members were asked for their own aspirations for the extension to the Reserve and ideas were quick to be volunteered. These suggestions were incorporated into the design of the site and included turtle dove *Streptopelia turtur* habitat enhancements, osprey *Pandion haliaetus* nesting posts, badger *Meles meles* habitat enhancement as well as new seating areas and additional bird hides.

Managing people's expectations was a crucial role of the Steering Group, not least because a significant amount of effort had already been invested in the Project before the land purchase. Expectations had been raised. We used the Trust's member's magazine and social media for regular updates as well as display material at the Reserve.

Partnership working during the construction phase

Construction of the intertidal habitat began in May 2015 by the Environment Agency. The breach in the seawall was scheduled for September 2015 at low neap tide and all the preparatory work took place in the preceding four months. This included the construction of two counter walls either side of the site and three little tern *Sternula albifrons* nesting islands using clay won from works to create a variety of ground levels and deeper pools (Figure 1). The design details were agreed between partners with a clear vision of enhancing the visitor's experience once the site was completed. An octagonal bird hide was constructed on a new promontory that is surrounded by water at high tide giving a wonderful feeling of being surrounded by wildlife (Figures 2 and 3).

The breach itself took a week to construct and the material from the wall was placed in linear mounds to provide raised areas for wildlife (Figure 4). The first tide entered the site in late September 2015 and project partners were rewarded with a view of the



Figure 1. Landscaping to provide different bird foraging habitats. Photo credit Essex Wildlife Trust.

water slowly creeping up the mudflats in the estuary until it spilled over into the new site (Figure 5). Many birds followed the water in, and the next day flocks of curlew *Numenius arquata* and other waders were using the area as a high tide roost.

During the construction phase, we had weekly Steering Group meetings and other partners were invited depending on the topics for discussion. Meetings were either face-to-face or via telecommunication depending on the issues to hand. This



Figure 2. A team of volunteers from Network Rail installing some erosion protection to the bird hide promontory. Photo credit Annie Gordon.



Figure 3. New bird hide at high water. Photo credit Essex Wildlife Trust.



Figure 4. Construction of the breach. Photo credit Merle Leeds.



Figure 5. Tide entering the breach for the first time. Photo credit Tim Mitchell.

frequent communication was really effective and generated a good 'team spirit'. Clear roles and responsibilities were detailed in notes from these meetings so that everyone knew what they needed to do and how it fitted in to the other work that was taking place.

Ensuring effective working across the partnership

The partnerships drew heavily on the expertise and strengths from all the organisations involved. In a practical project of this nature it was important to set out what needed to be completed, by when and by whom, before the seawall could be breached, e.g. granting of all the necessary permissions, fund raising, and successful and safe construction on site. The flexibility within the partnership ensured that human resources could be allocated where needed, which was really important to keep the project on track.

When unforeseen issues arose, such as the length of time needed to secure the marine licence, and flooding after the tidal surge, partners worked together to find a way forward and to share best practice. Since completion of the project, colleagues from the Marine Management Organisation

Feature Article: Fingringhoe Wick Managed Realignment – Successful Partnership Between Wildlife Trust and Environment Agency (contd)

Table 1. Birds recorded at Fingringhoe Wick, August 2016, listed in alphabetic order, divided into three conservation categories and ranked by priority: **red** is high priority, followed by **amber** and then **green**.

Red list species	
670 black-tailed godwit <i>Limosa limosa</i> 20 curlew <i>Numenius arquata</i>	
9 lapwing <i>Vanellus vanellus</i> 100 ringed plover <i>Charadrius hiaticula</i>	
2 whimbrel <i>Numenius phaeopus</i>	
Amber list species	
130 avocet <i>Recurvirostra avosetta</i> 10 bar-tailed godwit <i>Limosa lapponica</i>	
20 common tern <i>Sterna hirundo</i> 3 common sandpiper <i>Actitis hypoleucos</i>	
3 curlew sandpiper <i>Calidris ferruginea</i> 15 dunlin <i>Calidris alpina</i>	
15 greenshank <i>Tringa nebularia</i> 1 green sandpiper <i>Tringa ochropus</i>	
30 greylag goose <i>Anser anser</i> 260 grey plover <i>Pluvialis squatarola</i>	
2 kingfisher <i>Alcedo atthis</i> 30 knot <i>Calidris canutus</i> 5 little tern <i>Sternula albifrons</i>	
1 marsh harrier <i>Circus aeruginosus</i> 1 oystercatcher <i>Haematopus ostralegus</i>	
500 redshank <i>Tringa totanus</i> 2 spotted redshank <i>Tringa erythropus</i>	
10 shelduck <i>Tadorna tadorna</i> 2 turnstone <i>Arenaria interpres</i>	
Green list species	
6 buzzard <i>Buteo buteo</i> 1 grey heron <i>Ardea cinerea</i> 1 golden plover <i>Pluvialis apricaria</i>	
18 little egret <i>Egretta garzetta</i> 1 peregrine falcon <i>Falco peregrinus</i>	
6 swallow <i>Hirundo rustica</i>	

have visited the site to understand better the implications on marine licences of this type of project.

Asked if we would we do it again, we do say yes. We would incorporate those lessons learnt with the benefit of hindsight. These include never underestimating the amount of time required in preparation, and also forming an 'Exit Strategy' should land acquisition fail or a consent not be approved.

Everyone involved gave commitment and energy in ensuring success; clear and frequent communication cannot be underestimated in generating the partnership spirit that ultimately allowed us to create a much higher quality result than if we had worked individually.

Key indicators of success for the project

In its first year of being open to the tide, the site is amazing. Land levels are rising, saltmarsh plants are already colonising on the edges of the site and the number of birds recorded is increasing over

time. We are cautiously optimistic that monitoring over the next five years will document the establishment of a vibrant saltmarsh community.

The partnership project at Fingringhoe Wick is a superb example of creating internationally scarce intertidal habitat whilst managing a vulnerable section of our coastline in a sustainable and practical manner. Fingringhoe is one of the most cost-effective managed realignment projects in the UK. The intertidal habitat was created in a relatively short time-frame compared with other realignment sites around the country, and has proved to be good value for money.

The site has proved to be a popular extension to the adjacent nature reserve with a wide range and great abundance of different species already recorded (Table 1). Visitor numbers are up and members of the public who donated towards the land purchase are giving positive feedback. Donors are particularly impressed with the project and use of their money.

Acknowledgements

Thanks to Mark Iley, Kieren Alexander, Darren Tansley, J.J. Prior Ltd, Brightlingsea Harbour Authority, Phil Staley, Barry Scott, Rob Brown, Chris Keeling, Paul Chapman, Adrian Gascoigne and the Cock Family.

References

Cooper, N.J., Cooper, T. and Burd, F. (2001). 25 years of salt marsh erosion in Essex: Implications for coastal defence and nature conservation. *Journal of Coastal Conservation*, **7**: 31-40.

Thomson, S. Reid, C. and Boyes, S. (2011). *Essex Coastal SSSIs – Assessment of Changes in Extent of Saltmarsh Over the Period 1997 to 2008. Volume 1. Report to Natural England: ZBB745-F-2011*. Institute of Estuarine and Coastal Studies, University of Hull.

About the Authors



Andrew May is Conservation Manager for the Essex Wildlife Trust. He delivers conservation initiatives and projects at both local- and landscape-scales

in terrestrial and aquatic environments. Andy was the Wildlife Trust's project lead for the Fingringhoe Wick managed realignment scheme.

Contact Andy at:
andym@essexwt.org.uk



Merle Leeds is Project Manager at the Environment Agency, delivering habitat creation within East Anglia. She is the lead for inter-tidal habitat opportunities and has worked with

the small specialist Habitat Creation team on delivering over 400 hectares of new freshwater habitat and 100 hectares of intertidal habitat across East Anglia.

Contact Merle at: Merle.leeds@environment-agency.gov.uk

Developing Community Nature Conservation: The Case for Working in Partnership with the Community

Paul Phillips CEnv MCIEEM

Environmental Sustainability Officer, Rushcliffe Borough Council

Keywords: community, financial constraint, Local Authority, partnership

Rushcliffe Borough Council has worked in partnership with community groups and statutory organisations to develop and implement a Nature Conservation Strategy. This work has produced benefits for nature conservation while limiting costs. Working in partnership allows a local authority to be effective in meeting its biodiversity objectives within a constrained financial environment and can multiply the benefits beyond those that would be achievable if it acted independently and without partners.

Introduction

The UK government recognises that local authorities have a key role to play in conserving biodiversity, through developing and influencing local policies and strategies, planning and development control, owning and managing their estates, procurement, education, awareness raising and advisory functions (Defra 2007). The Natural Environment and Rural Communities Act 2006 (NERC) introduced a duty on Local Authorities 'in exercising its functions, [to] have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (NERC 2006).

Balancing the responsibility to conserve biodiversity with constrained budgets is difficult. However, involving local communities in nature conservation partnerships can provide excellent results for limited financial investments.

Background

Rushcliffe is a largely rural borough in the south of Nottinghamshire (Figure 1). Biodiversity is concentrated in fragmented habitats within the farmed landscape, consisting largely of small areas of

woodland and species-rich grassland and the remainder Grantham Canal. The borough is home to locally uncommon species such as black poplar *Populus nigra*, barn owl *Tyto alba*, water vole *Arvicola amphibius*, grizzled skipper *Pyrgus malvae* and great crested newt *Triturus cristatus*.

There are eight Sites of Special Scientific Interest (SSSIs) and 215 county-designated Local Wildlife Sites (LWS) covering 2000 hectares, or 5% of the borough. Twenty-five sites owned by partners (~ 370 hectares) are actively managed for nature conservation, often with significant input from volunteers and community groups. Nine of these sites are designated as Local Nature Reserves (LNR). Other Local Wildlife Sites (LWS) are privately owned and often wildlife is not of primary importance to the owners.

The partnership

Biodiversity has been an important issue for Rushcliffe Borough Council since the publication of its first nature conservation strategy 'Nature in Rushcliffe' in 1995. The strategy was refreshed and extended in 2000, 2010 and 2015.

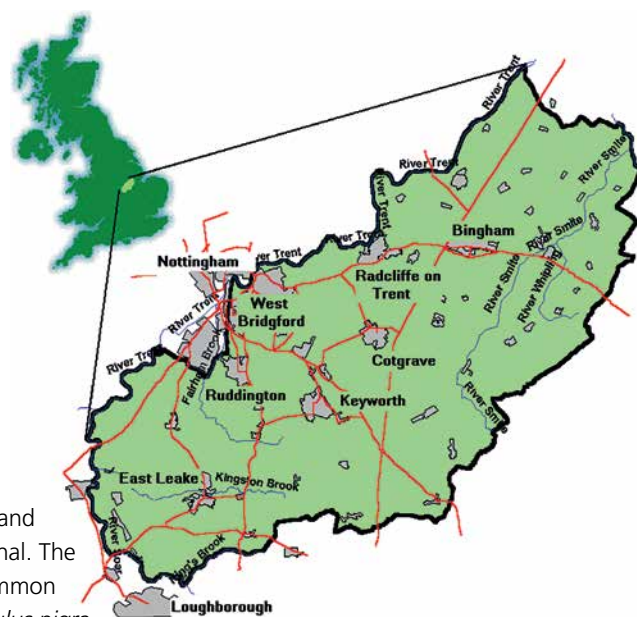


Figure 1. Location of Rushcliffe in the UK.

In 2003, a partnership was established comprising representatives of the Borough Council, County Council, Nottinghamshire Wildlife Trust, local 'friends of' groups, parish councils and Nottinghamshire Biodiversity Action Group. Known as the Rushcliffe Nature Conservation Strategy Implementation Group (RNCSIG), the partnership meets regularly through the year to monitor and develop the strategy action plan and to consider grant applications. The partnership publishes an annual report showing progress against key indicators within the strategy.

Rushcliffe Borough Council endorsed the nature conservation strategy in October 2003 and agreed to provide £25,000 annually for the management of Borough Council nature reserves, community development work and grant funding.

Project objectives and implementation

The nature conservation strategy sets strategic direction, targets and actions for each of the partners and also implements the Nottinghamshire Biodiversity Action Plan within Rushcliffe. Local groups and organisations implement the objectives, with Rushcliffe Nature Conservation Strategy Implementation Group acting as a focus and providing strategic direction. The current objectives are to:

- Promote landscape-scale conservation to create a more resilient natural environment
- Promote the maintenance and enhancement of nature reserves
- Promote sympathetic land management for wildlife in rural and urban areas
- Support continued surveying, monitoring and reporting of Rushcliffe's biodiversity
- Raise awareness of nature conservation
- Seek to influence the impact of development on wildlife
- Support and develop nature conservation in Rushcliffe.

A first priority was to build capacity and resources. A service level agreement with Nottinghamshire Wildlife Trust provides a member of staff for one day per week (equivalent), to cover tasks such as writing management plans, working with schools and developing 'friends of' groups.

An annual networking conference for partners complements an ongoing training programme open to all nature conservation volunteers across the borough. The training is provided by partners or outside experts, as required, and includes practical and technical skills, fundraising, and health and safety.

Financial support for projects is provided via a grant scheme, funded by the Borough Council, but overseen and promoted by the RNCSIG partnership. Grants of up to £750 encourage landowners in the borough to restore or create wildlife habitats such as ponds and wetlands, semi-natural grasslands and farm habitats including hedgerows and woodlands. It also provides small-scale funding needed by community groups, working across the borough, for tools, materials, training or insurance. Financial support has also been provided to Nottinghamshire Biodiversity Action Group.

Key indicators of success

In 2000, there was a relatively low level of proactive nature conservation within the borough but it has increased greatly since the strategy was refreshed and the Rushcliffe Nature Conservation Strategy Implementation Group was formed. As a result of the partnership approach to nature conservation:

- The number of sites brought into active management for nature conservation by a wide range of partners has increased (Figure 2), and new management plans are in preparation for sites without plans.

- Volunteer nature conservation work across the borough has increased due to on-going recruitment and awareness-raising campaigns implemented by all partners, and as a consequence of support given to the establishment of new volunteer groups on sites where they were absent. The number of volunteer hours has risen from an estimated 3138 hours in 2004 to 9788 hours in 2015, and the volunteer work was valued at £156,585 for 2015 based on Volunteering England guidance (Figure 3).

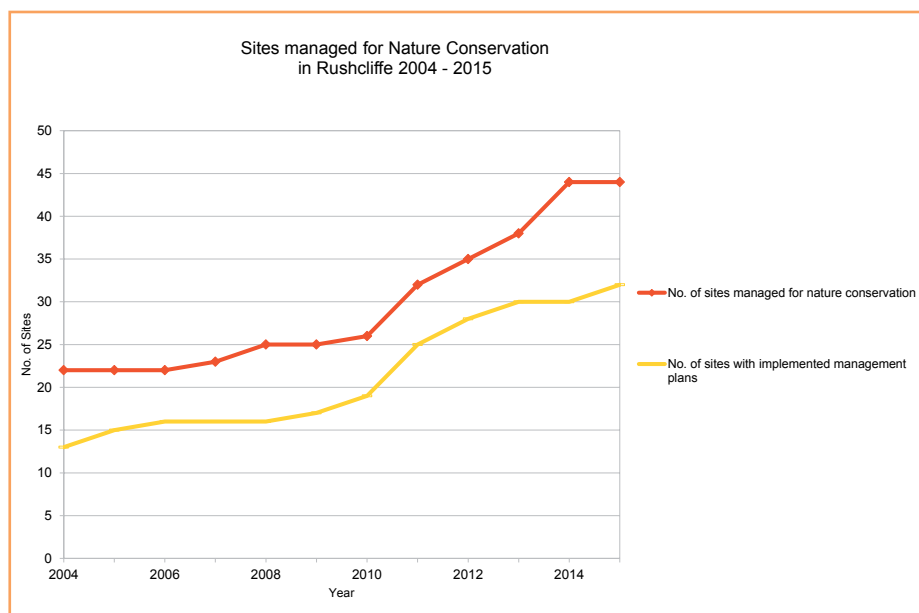


Figure 2. The number of sites managed for nature conservation in Rushcliffe 2004 -2015.

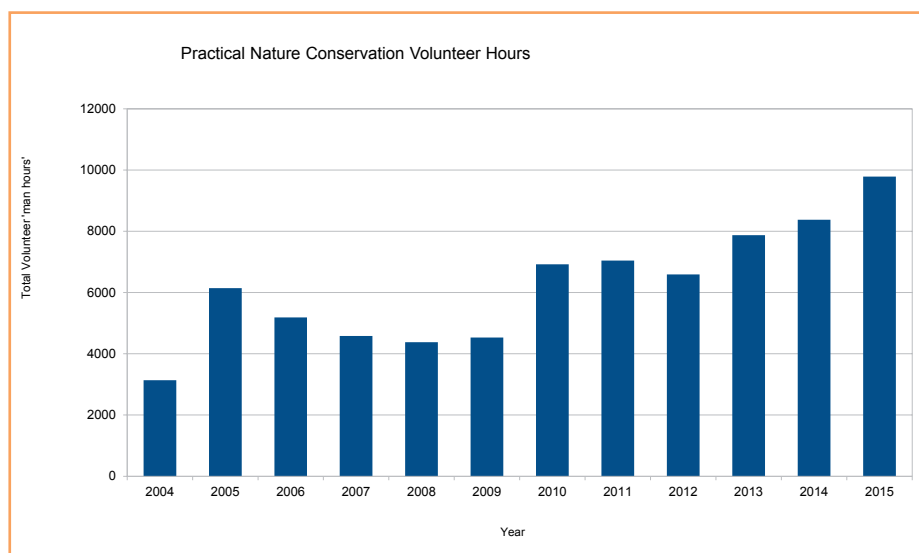


Figure 3. Practical Nature Conservation Volunteer Hours 2004 – 2015.

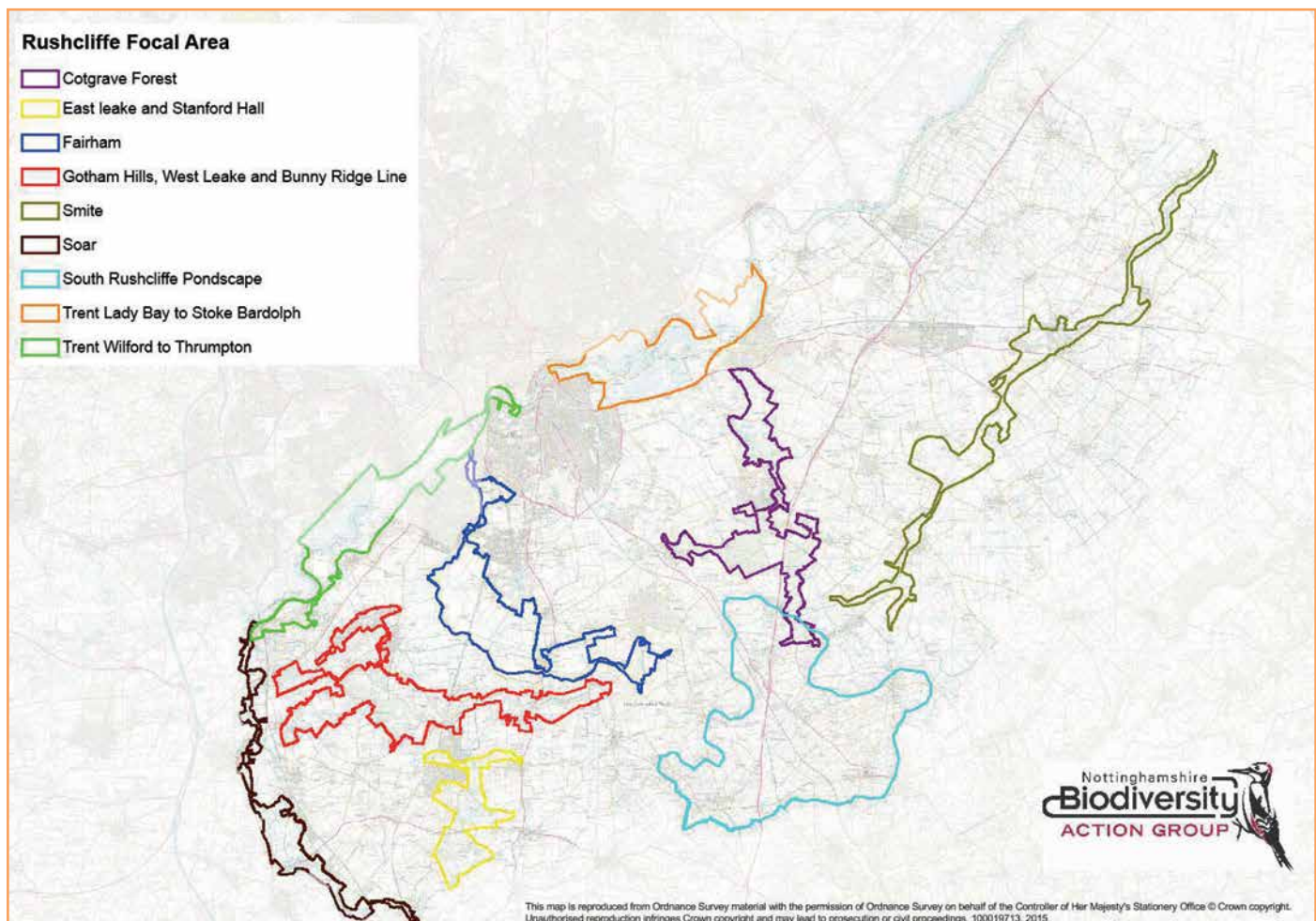


Figure 4. Map of Focal Areas in Rushcliffe identified through Biodiversity Opportunity Mapping.

- Nottinghamshire Wildlife Trust has secured 37 hectares of wetland habitat and funding for major works to extend its 'Skylarks' reserve to 47 hectares. This has created one of Rushcliffe's largest nature reserves and was achieved with support and funding from partners. The extended reserve links to adjacent sites owned by partners, developing connections across the landscape.
- RNC SIG and its partners have produced pioneering Biodiversity Opportunity Maps (Jackson and Crouch 2015) mapping existing biodiversity, high quality habitat, the opportunity for representative species to move within the landscape, and the opportunities to develop biodiversity across the borough (Figure 4). This study brought together partners to identify areas of nature conservation importance using existing resources such as Phase 1 habitat data, local wildlife site data, and

the knowledge and expertise of local enthusiasts. Projects are now being developed 'on the ground' to improve connections and habitat quality within the focal areas.

- Rushcliffe nature grants (2004-2014) have supported 71 projects to a cumulative value of £37,363.
- Work financed or carried out directly by the partnership since 2011 has led to 17.9 ha of wildlife grassland, 22.6 ha of woodland, 38 ha of wetland, 465 m² ponds and 2025 m hedgerows being created, restored or brought under active conservation management. This activity contributes to the county-wide targets within the Biodiversity Action Plan and is in addition to routine works carried out by partners.

The success of the community approach to nature conservation is a result of the combined efforts of the partnership; the local authority acting alone could

not possibly have delivered the same extent and range of nature conservation improvements without substantially greater resources. Direct employment of a dedicated 'nature conservation' officer would cost the authority (and therefore the tax payer) an estimated £34,000 (based on a salary of £22,500, plus employer NI and pension contributions and office costs). The £25,000 annual grant to the partnership, which provides grants and training in addition to some staff time, therefore shows good value for money.

The Borough Council monitors the work of the Rushcliffe Nature Conservation Strategy Group and agreed that it is 'successful and offered value for money' and 'the approach should be supported in the future' (Rushcliffe Borough Council 2011). The latest Rushcliffe Nature Conservation Strategy (2016 – 2020) was adopted by the Council's cabinet as a strategy of the Council in November 2015.

Feature Article: Developing Community Nature Conservation: The Case for Working in Partnership with the Community (contd)

Lessons learnt

All partners have to be committed and willing to compromise. On occasions when some partners have wanted to be more challenging, a shared commitment to seeing progress made and a willingness to compromise where necessary has made it possible to agree a common approach.

The working in partnership approach has developed community capacity and provided support mechanisms such as grants, training and development of volunteers and 'friends of groups'. Good communications with local groups and the support of the local community has been central to the success of the project. It was important to address this specifically in the early years of the project, i.e. when the strategy was refreshed in 2000 to make it more relevant to the local community.

The support of the elected members of the Borough Council has also been crucial, by ensuring finances remained available as well as helping to raise awareness amongst local stakeholders.

The partnership has kept the council environmental portfolio holder informed throughout and invited them to participate in all partnership events.

The willingness of the council to provide staff time to support the partnership, plus the provision of staff time via the Wildlife Trust, has been key to making progress on nature conservation, providing strategic direction for the partnership and facilitating hands-on work with volunteers and the public.

The wide membership of the partnership has helped the group to remain stable during times when partner representatives have changed, although this has occurred only occasionally over the last 12 years.

Finally, however, the partnership has not yet had success in promoting its achievements to the public within the local area and therefore may have missed opportunities to gain support. This is an area of work that the partnership will develop over the coming years.

Further information online at www.rushcliffe.gov.uk/natureconservation or www.facebook.com/RNCSIG

References

- Defra (2007). *Guidance for Local Authorities on Implementing the Biodiversity Duty*. Defra, London.
- Defra (2011). *Attitudes and Knowledge Relating To Biodiversity and The Natural Environment, 2007 – 2011*. Available at <http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/Statistical-Release-13-April-2011-biodiversity1.pdf>. Accessed 23 June 2016.
- Jackson, C. and Crouch N. (2015). *The Rushcliffe Biodiversity Opportunity Mapping Project*. NottsBAG. Available at http://www.nottsbag.org.uk/pdfs/RushcliffeBOMReport2015_V3. Accessed 18 October 2016.
- NERC (2006). *Natural Environment and Rural Communities Act 2006, Chapter 16. Section 40*. The Stationery Office Limited. Available at <http://www.legislation.gov.uk/ukpga/2006/16/section/40>. Accessed 22 September 2016.
- Rushcliffe Borough Council (2011). *Notes of the Meeting of the Community Development Group Monday 18 April 2011*. Available from the author or at <http://www.rushcliffe.gov.uk/media/rushcliffe/media/documents/pdf/councilanddemocracy/2011/april/18aprilcommunitydevelopmentgroup/18%20april%20notes.pdf>. Accessed 23 June 2016.

About the Author



Paul Phillips is the Environmental Sustainability Officer for Rushcliffe Borough Council. He has worked in the public sector developing nature conservation strategy

for 20 years and he is particularly interested in landscape scale conservation.

Contact Paul at:
pphillips@rushcliffe.gov.uk



Meet the Author – Debbie Bartlett

What do you do?

I currently work for the University of Greenwich four days a week running the MSc in Environmental Conservation. I also teach undergrads and am horticultural and ecology advisor to the Facilities Management department, helping manage the seven University campuses. The rest of the time, I do consultancy, train dormouse monitors and do some bat work for Natural England.

What or who first inspired you to make a career in ecology and environmental management?

I had a very 'free range' upbringing in rural Kent and Surrey and was completely absorbed with wildlife right from the start. My family talk about my horrifying the health visitor with my snakes (being kept under observation in a disused metal baby bath) when three years old. There was never any question that I would end up working with animals – particularly as my mother was a botanist/horticulturist so I couldn't admit to any interest in plants. I've always had a commercial bent and earned well in my teens doing relief milking and general farm work, giving me a better understanding of practical land management issues than could have been gained from any course.

How did you get to where you are today?

Tricky question I didn't do well at school and suspect the label of 'backward' would now be 'dyslexic'. I scraped a place at university, being rejected by zoology but accepted by botany. Somehow, I came out top of my year with a physiology degree (it's all about systems and their interactions). Various jobs

resulted, including as a successful garden designer and working for the commercial department of Wye College, University of London. When my children went to school, I did the MSc in Landscape Ecology, Design and Management, joining IEEM in the early 1990s, and I went on to complete training as a Chartered Landscape Architect (Management division).

What have been the most important steps along the way?

University obviously but having a solid horticultural and land management background has made me a much better ecologist than anyone just doing any course. I find it frustrating that many people simply don't understand plant growth and the way vegetation responds to physical and biological factors. It is the context within which animals and birds function and often doesn't get the attention it deserves. Having such a varied background, including working for a local authority and with a government agency, has given me an understanding of different perspectives and I suspect this is a benefit for my students.

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

Obviously, a CIEEM accredited MSc! But seriously, universities are often criticised for not teaching enough identification but really students have to do things for themselves. We can 'open doors' but no qualification can ever make a good observer and we don't do new entrants any favours by suggesting it's all about courses – it's down to hard work and a commitment to developing real skills

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

I asked my MSc students this and they said 'don't expect to get rich' and 'everything is more complicated than you think'!

What's the best thing about your job?

Probably the students I certainly enjoy working with a wide range of people with different skill sets; I get to work in very different situations, both here and abroad; and I find thinking about how to solve unfamiliar problems stimulating.

What's the downside?

University admin. and traditional academic colleagues who don't seem to want to relate teaching to the work environment; not always being able to make time for my family.

What's next for you?

Who knows? I'm open to suggestions.

What is your top tip for success?

Be open to opportunities and don't expect your career plans to go to plan.

For further information

Contact Debbie at:
D.Bartlett@greenwich.ac.uk

Meet the Editorial Board

In this 'Working in Partnership' themed edition, we are pleased to introduce the *In Practice* Editorial Board.

The Board members contribute to each and every edition by reviewing all the feature articles we receive and providing comment and feedback. Their expert judgement ensures that the content is accurate, informative, well-targeted and relevant to CIEEM members. The Board broadly represents the membership in terms of expertise, profession and geographic location.



Jon Barnes CEnv MCIEEM is a Principal Ecologist with Jacobs UK Ltd and leads the UK Freshwater Ecology team. His role includes the delivery of EclA, HRA and WFD compliance

assessments for transport, power and utilities projects across UK and Ireland. Jon has a background in marine and freshwater taxonomy and interests in non-native species and the linkages between hydromorphology and ecological function. Jon is also the Secretary of the CIEEM Marine and Coastal Special Interest Group.

Contact Jon at:
jon.barnes@jacobs.com



Andrew Cherrill CEnv MCIEEM is Senior Lecturer in Applied Ecology and Countryside Management at Harper Adams University and part of a team running

a suite of environmental programmes including the UK's only MSc in Entomology, plus a CIEEM-accredited undergraduate degree in Countryside and Environmental Management. Andrew's teaching and research revolves around wildlife conservation science, entomology, field survey skills, and statistics.

Contact Andrew at:
acherrill@harper-adams.ac.uk



Neil Harwood CEnv MCIEEM has 17 years of experience in ecological consultancy, based in both the UK and Australia, and has worked for Arup for over 12 years. His

specialisms are in birds and bats. Neil has considerable experience in a wide range of industries, strategic and environmental assessments and large-scale, multi-national infrastructure projects, in particular.

Contact Neil at: neil.harwood@arup.com



Kate Bayley MCIEEM is an advisor with the Environment Agency's National Biodiversity Team, providing technical advice on permitting, regulation and compliance with

conservation legislation for complex and high profile casework. Kate specialises in biodiversity and air quality issues, particularly the regulation of atmospheric nitrogen. She also sits on the CIEEM Welsh Geographic Section Committee.

Contact Kate at:
kate.bayley@environment-agency.gov.uk



Dominic Coath MCIEEM is a Chartered Ecologist with over 15 years' experience in the sector. He started off as an ornithologist, warden and field surveyor working

for the National Trust, RSPB and Wildlife Trusts. Then, after a brief period as a consultant for Royal Haskoning working on onshore and offshore wind farm development, Dominic moved to Natural England to work on land-use planning and urban development in London and the South East. He currently works at the Environment Agency in their National Biodiversity Team.

Contact Dominic at:
dominic.coath@environment-agency.gov.uk



Caroline McParland CEnv CBiol MCIEEM has expertise in Ecological Impact Assessment and has served on the Technical Review Group for updates to CIEEM's Guidelines

for Ecological Impact Assessment in the UK and Ireland, advised EIANZ on Guidelines for Ecological Impact Assessment in New Zealand, and currently serves on the CIEEM Scottish Section Committee. A Technical Director at Jacobs UK, she has worked on EclA and protected species surveys for infrastructure projects in the UK, New Zealand, Eastern Europe and Asia, following a PhD on waterbirds in Canada.

Contact Caroline at:
Caroline.McParland@jacobs.com

**Kate Morris**

MCIEEM is a Mammal Specialist at Natural England based in the North West. Kate has previously held other roles with Natural England, RSPB, The Wildlife Trusts and

with ecological consultancies across England and Scotland. Her main interests and expertise lie with mammals (in particular, dormice and mustelids), but she is also experienced in upland ecology and habitat management. Kate is also a mentor to students at the University of Manchester.

Contact Kate at:

Kate.Morris@naturalengland.org.uk

**Paul Rooney**

CEnv MCIEEM is an environmental geographer at Liverpool Hope University where he is the Award Director of the MSc in Environmental

Management. Paul is an expert in coastal sand dunes: he established and directs the Sand Dune and Shingle Network and is now driving the development of the European Dune Network. Paul is a Chartered Environmentalist, a Chartered Geographer and a Fellow of the Higher Education Academy. He holds conservation licences for protected species including the sand lizard, natterjack toad, great crested newt and bats.

Contact Paul at:

rooney@hope.ac.uk

William Latimer CEnv FCIEEM

commenced his professional career in academic research in the field of behavioural ecology and bioacoustics, moving on to applied ecology working for the statutory agencies and wildlife trusts. For the past 25 years he has held posts in environmental consultancy, with Atkins and AECOM, based in South East England, before moving up to Scotland to work for Northern Ecological Services and to take advantage of the wide open spaces of the Cairngorms.

Contact William at: wl@northecon.co.uk

**Paul Scott** CEnv

MCIEEM is Director of Scott Cawley Ltd, a medium-sized ecological consultancy based in Dublin and operating throughout Ireland. A Chartered Environmentalist,

his background is in capacity building in EIA, SEA and EclA but since moving to Ireland 15 years ago he has been focused on ecological impact assessment and Appropriate (Habitats Directive) Assessment. He is ridiculously enthusiastic about bats and despite managing his staff and running a business, still gets out whenever he can to lurk around in fabulous dark places. He enjoys the networking and sharing of knowledge and experience that CIEEM facilitates, is a member of the CIEEM Advisory Forum and has commenced the process of applying for CEcol.

Contact Paul at: pscott@scottcawley.com

**Katrena Stanhope**

CEnv MCIEEM is an Associate Director and Technical Expert in the Atkins Ecology business and has a background in environmental science, geology

and biology. Kat has over 15 years of experience relating to biodiversity and environmental issues in the context of environmental management, development schemes and the land-use planning system including large-scale and nationally important schemes. A Chartered Environmentalist, Kat has extensive experience of impact assessment in relation to habitats and species including design of avoidance and mitigation measures. When the team let her, Kat still tries to get involved in the odd bat survey. Kat is currently on secondment with HS2 Ltd as a Senior Environment Manager and is passionate about driving innovation and sustainability on the project.

Contact Kat at: kat.stanhope@hs2.org.uk

**Darren Towers**

CEnv MCIEEM is Head of Education and Skills at EDF Energy, leading the company's engagement with young people on Science, Technology,

Engineering and Maths (STEM). He was previously EDF Energy's Head of Sustainability and Environment, and has had environmental and sustainability roles in the Wildlife Trusts, Environment Agency, Local Authorities, consultancy and water sectors. He also volunteers on CIEEM's Diversity Working Group and leads EDF Energy's LGBT Supporters Network.

Contact Darren at:

darren.towers@edfenergy.com

**Editor: Gill Kerby**

has been editor of *In Practice* for the last three years following her role as Managing Editor of the British Ecological Society's *Journal of Applied Ecology*. She has

20 years' experience in science publishing after an early career in academic research and conservation management. Gill has worked with the conservation statutory agencies, environmental consultants and industry partners and is currently an environmental committee member in local government and trustee for her local wildlife trust.

Contact Gill at: gillkerby@cieem.net

**Internal contributions coordinator:****Jason Reeves**

MCIEEM is CIEEM's Policy and Communications Manager and has overall responsibility

for *In Practice*. He also co-ordinates 'Professional Updates' and internal contributions. Jason has previously been Assistant Editor and Editor of *In Practice*. He has been involved in the development and production of the publication since 2005.

Contact Jason at: jasonreeves@cieem.net

CIEEM Awards 2017



Sponsorship Opportunities!

If your organisation is looking for ways to engage directly with ecologists and environmental managers, then sponsoring one of our Awards is your perfect chance to do that!

Our Awards will take place on Wednesday 21st June 2017, Drapers' Hall, London.

For more details on how you can become affiliated with our Awards and work in partnership to highlight the achievements of our members and others visit

www.cieem.net/awards-sponsorship
or email emmadowney@cieem.net

Brexit: Potential Impacts On Our Natural Environment Legal Framework

Penny Simpson
Freeths LLP

Many of you will no doubt be concerned about the impacts of the Brexit decision on our natural environment legal framework and the health of our natural environment. Those of you working in the ecological services industry may be fearful of the implications of Brexit on your work and businesses. Those of you involved in property and infrastructure development may be concerned about uncertainties in environmental regulatory frameworks arising from the Brexit decision and may wonder whether there may ultimately be commercial benefits from a weakening of existing legislation.

I have been considering these issues and set out comments on a number of points below. In summary my thoughts at this stage are that:

- Immediately after Brexit Day our natural environment legislation is likely to look the same as, or very similar to, the present, at least for the immediate future. Any future changes to our domestic natural environment legislation are likely to be some considerable way off.
- It is potentially open to the Government to seek a 'soft' Brexit under which the withdrawal agreement (to be negotiated with the EU) could continue to require the UK's ongoing compliance with EU environmental legislation and even Court of Justice of the European Union (CJEU) case law. However this does not at present appear to be the Government's intention. The Habitats and Birds Directives are therefore very unlikely to remain legally binding on the UK post-Brexit Day. This at first sight would appear to present a basis for potential weakening of domestic legislation in the long-term. However

a number of international conventions ratified by the UK are likely to have the effect of restricting any proposed weakening so that domestic legislation in the long-term is unlikely to be very different to that seen at present. This is particularly the case for EU protected species, whereas for EU protected habitats the restrictions are a little looser.

- The key 'unknown' (and therefore the main concern for many) is the future interpretation by our courts of our domestic legislation, given that (i) the current strictness of EU nature conservation law is in large part due to the judgments of the CJEU; and (ii) there is real uncertainty as to the standing and influence of those judgments in the UK following Brexit Day.

1. What is the Article 50 process?

Under the process envisaged in Article 50 of the Treaty of the European Union:

- the UK must first decide to withdraw from the Union – the Government conceded in litigation in the High Court recently that this has not as yet occurred;
- the UK must then give notice to the European Council of its intention to withdraw from the EU;
- the EU will then negotiate and conclude a withdrawal agreement with the UK setting out the arrangements for the UK's withdrawal, taking account of the framework for the UK's future relationship with the EU; and
- 'Brexit Day' will be the date that the withdrawal agreement comes into force or, failing that, two years after the date of giving notice.



In a recent seminar given by barrister Mr Alex Goodman of Landmark Chambers in London, Mr Goodman explained that Article 50 envisages the withdrawal agreement "taking account" of the framework of its future relationship with the Union, but not itself setting out that future framework. On that basis he suggested that the withdrawal agreement may well establish a set of transitional arrangements and that, following the withdrawal agreement, there might well then be a separate treaty establishing the future relationship with the EU.

2. How certain is the announced timetable for the Article 50 process?

In her speech at the Conservative Party Conference¹, the Prime Minister

announced that notice under Article 50 will be given no later than the end of March 2017. This means that completion of the UK's withdrawal from the EU can be expected no later than two years following that date.

Despite this, there are some uncertainties relating to the timetable.

Firstly, there is litigation ongoing in our domestic courts as to whether Parliamentary consent is needed to invoke Article 50. Article 50 states that a Member State may decide to withdraw from the EU *"in accordance with its own constitutional requirements"*. What are the UK's constitutional requirements? The Government's view is that this is a matter for its prerogative powers so that no Parliamentary consent is needed. But others disagree, arguing that the Prime Minister was not in a position to unilaterally withdraw the UK from EU before the referendum vote, and that the referendum has done nothing to extend these prerogative powers. Whatever the outcome of the High Court proceedings, it is likely that this matter will be appealed and heard by the Supreme Court before the year's end. It remains a possibility that the matter could end up at the CJEU! This could potentially hold up the Government's timetable.

Secondly, it has been reported in *Business Insider*² that some legal experts have advised that, once invoked, the UK could not be forced to go through with the Article 50 process if it did not want to. In other words, the UK could change its mind if, for example, there were a change in Government during that process. As the Business Insider article states, the political consequences of such a change of mind would be substantial, so it seems very unlikely that this would happen.

The Government has recently confirmed that the withdrawal agreement will likely require ratification by Parliament. Subject to the point made in the paragraph above, this will not however hold up the timetable once the Article 50 notice has been given. This is because Article 50 makes clear that, once notification has been given, withdrawal takes effect whether or not a withdrawal agreement has been negotiated.



3. What will happen to natural environment law after the Article 50 notice has been given and whilst we wait for the Article 50 process to run its course?

During this time it is business as usual. Existing EU nature conservation/ environmental law continues to apply as before, as does domestic natural environment law. Ecologists, developers, local planning authorities and statutory nature conservation bodies should continue operating as before.

4. What is the position for any EU Directive which must be implemented by Member States whilst we await completion of the Article 50 process?

The prime example of this is the Environmental Impact Assessment Directive 2014/52/EU which must be implemented by 16 May 2017. This Directive makes a number of significant changes to existing EIA requirements.

The Scottish³ and Welsh⁴ Governments have already commenced public consultations on the changes to be made to domestic EIA legislation so as to implement this Directive. At the time of writing no similar consultation had commenced in England.

As long as the UK remains a Member State, it is required to implement Directives within the specified timeframes. Failure to implement this EIA Directive within the required timeframe could lead to infraction proceedings from the European Commission, although the likelihood of this happening is perhaps lower than it was before 23 June 2016.

Nevertheless, since the existing EIA Directive has in the past been held by the CJEU to have *"direct effect"*, an objector to a planning application for example, could,

in the absence of domestic implementing legislation, expect to succeed in a judicial review claim to quash a planning consent granted in breach of the new Directive. If implementing legislation is not therefore adopted this will leave planning authorities in a potentially very difficult situation. Therefore it can be expected that England will follow the Welsh and Scottish examples and consult on this very soon.

5. What will happen to existing domestic natural environment legislation immediately following Brexit Day?

In short, we can expect that immediately after Brexit Day our domestic natural environment legislation will be the same as, or very similar to, the present, at least for the immediate future.

Theresa May has announced that there will be a 'Great Repeal Bill'. This will repeal the European Communities Act 1972 (ECA 1972) (the key domestic legislation which authorised UK membership of the, then, European Economic Community (EEC)) and re-enact, into UK legislation, existing European legislation, up until the point of withdrawal.

This is important as, without a Great Repeal Act, repeal of the ECA 1972 would have serious implications for much domestic secondary legislation. This is because many European Directives relating to the environment have been implemented through secondary legislation under the ECA 1972 (i.e. Regulations or Orders, rather than Acts of Parliament). Examples are the Conservation of Habitats and Species Regulations 2010 which implement (in England and Wales) the Habitats Directive and some aspects of the Wild Birds Directive; and the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 which implement in England the Environmental Liability Directive. Once the ECA 1972 is repealed, the secondary legislation adopted under it would immediately lapse unless some legislative mechanism were put in place to preserve this legislation. The Great Repeal Act will address this. The Great Repeal Act is also expected to preserve the effect of European Regulations, which are currently *"directly applicable"* (i.e. binding on the UK without the need for transposition) and which, in the absence



Dormouse © David Kilbey

of domestic provisions to give effect to the EU Regulations, would lose their force in the UK.

The Great Repeal Act will have to consider how to deal with certain aspects of existing natural environment legislation which currently refer to European institutions or the Directives.

As an example, regulation 62(2) of the Conservation of Habitats and Species Regulations 2010 is relevant where a competent authority is not able to conclude that a plan or project will not have an adverse effect on integrity of a European site under regulation 61. Under regulation 62(2) a competent authority may only agree to such a plan or project if there are no alternative solutions and the plan or project must be carried out for imperative reasons of overriding public interest. In the case of priority habitats or species the imperative reasons of overriding public interest may only “relate

to human health, public safety or beneficial consequences of primary importance to the environment” or “any other reasons which the competent authority, **having due regard to the opinion of the European Commission**, consider to be imperative reasons of overriding public interest” (emphasis added). References to the Nature Directives are also found in the interpretation provisions of these Regulations. It is clear that a decision will need to be made as to whether these Regulations will continue to refer to the European Commission/the Directives and if not, what amendments will be made. Andrea Leadsom, Secretary of State for the Environment, Food and Rural Affairs, has already recognised the challenge this will present, noting that a third of our current EU legislation cannot be “rolled forward with just some technical changes”⁵.

6. What will happen to our natural environment legislation in the longer-term?

This is the ‘million dollar’ question. The answer hinges on political choice and negotiations with the EU.

If the politicians so wished, they could opt for a ‘soft’ Brexit (i.e. negotiate a withdrawal agreement with the EU on the basis that, in relation to environmental issues, the UK will remain subject to both existing and future EU Directives and Regulations and even the jurisdiction of the CJEU). This is a matter of political choice and negotiation. The advantage of this would be to preserve stability in environmental law whilst the longer-term arrangements for our relationship with the EU are negotiated. Following the withdrawal agreement, a future agreement setting out the detail of our long-term framework with the EU could also adopt this approach.

This, however, seems highly unlikely based on the Government's comments to date. Furthermore, even if such a 'soft' Brexit were to transpire, there would still have to be careful selection of the EU environmental laws which would continue to apply to the UK and the question then is: *Would they include the Wild Birds and Habitats Directives?* It can obviously be argued that EU nature legislation should remain binding on the UK since a European-wide approach to protection of species and habitats is ecologically important/essential. However, the Nature Directives are not without their critics and other environmental Directives/Regulations may be regarded as having a greater priority since they have a more direct impact on trade with the EU (e.g. chemicals regulation; transport of waste; labelling; emissions trading).

A clue to this can be found in the 'Norway' model. A post-Brexit model based on the UK joining the European Free Trade Area (EFTA) and the European Economic Area (EEA) (which, in any event, at present seems not to be the approach favoured by the Government) might well require the UK to maintain ongoing compliance with *most* EU environmental laws, including the Environmental Impact Assessment Directive and EU environmental regulatory regimes relating to matters such as air, chemicals, waste and water. *However*, the existing EEA Agreement carves out any requirement to comply with the Habitats and Wild Birds Directives and linked nature conservation provisions within the Environmental Liability Directive and Water Framework Directive (it also carves out any requirement for compliance with the Bathing Waters Directive). So this would suggest that, even if a 'soft' Brexit were to emerge, the Nature Directives might well still cease to be binding.

However even if (as appears likely) the UK will not remain subject to the EU Nature Directives after Brexit Day, this does not mean that our devolved governments will necessarily decide to alter or weaken their domestic legislation in the long-term.

First, *"if it ain't broke, why fix it?"* Many commentators would argue that the existing nature conservation legislation system is not 'broke' and that it strikes an effective balance between economic interests and conservation.

Secondly and perhaps more persuasively, the UK has ratified a number of international conventions with which compliance will be expected.

7. What do the international conventions require?

Whilst there may be detailed arguments about the exact legal position in relation to any individual convention ratified by the UK, the starting point is that any changes made to domestic natural environment legislation should be consistent with the UK's international law obligations. In her speech at the Conservative Party Conference, Theresa May appears to agree with this. She stated *"When the Great Repeal Bill is given Royal Assent, Parliament will be free – subject to international agreements and treaties with other countries and the EU on matters such as trade – to amend, repeal and approve any law it chooses"*¹.

Whilst it is true to say that international conventions give rise to less rigorous enforcement of their provisions than is the case for EU law, and that our domestic courts do not at present allow international treaty provisions to be relied upon directly before our national courts, it would be a surprising outcome if the UK made changes to domestic legislation in direct breach of its international convention obligations.

A few of the relevant conventions are considered in brief below.

7.1 EU protected species

In terms of protected species, the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') is key. It entered into force on 1 September 1982 and was ratified in the same year by the United Kingdom. The primary aim of the Habitats Directive was to give effect to the Bern Convention obligations across the EU and so, not surprisingly, there are strong parallels between the two.

The Bern Convention offers protection to listed wild flora in Appendix I; and to listed wild fauna species (both birds and other animals) in Appendices II (those requiring 'special protection') and III (those requiring a lesser level of protection than Appendix II species).

Most of the Habitat Directive's Annex IV(a) list of 'European Protected (animal) Species' (EPS) (which are relevant to the UK) are included in Appendix II of the Bern Convention. Exceptions are the common pipistrelle bat and dormouse *Muscardinus avellanarius*. Other bat species, great crested newt, otter, sand lizard, wild cat, and certain listed Cetacea species are covered by Appendix II of the Bern Convention. The Bern Convention's legal regime for these Appendix II animal species, including its derogation (licensing) regime, is almost identical to that found in Articles 12 and 16 of the Habitats Directive. There is only one main difference: the prohibition against *"damage or destruction of a breeding site or resting place"* under the Bern Convention requires the prohibited act to be carried out 'deliberately', whereas this requirement is absent under the 'strict liability' (no fault) offence of the Habitats Directive.

All of the Habitat Directive's Annex IV(b) list of EPS plants (which are relevant to the UK) are included in Appendix I of the Bern Convention. Again, the Bern Convention's legal regime for these plant species, including its derogation (licensing) regime, is almost identical to their protection under Articles 13 and 16 of the Habitats Directive.

Based on these points, beyond the issue of common pipistrelle bats and dormice, there would be very little scope for a 'Bern Convention-compliant' weakening of the protected species provisions of the Conservation of Habitats and Species Regulations 2010.

The Bern Convention applies a certain level of protection to almost all wild bird species either through Appendix II or Appendix III (Appendix II contains the stricter protection). A detailed comparison between the Bern Convention and the Wild Birds Directive is needed but, on first analysis, there are strong parallels, although the Wild Birds Directive does appear to offer some additional protection for all wild birds.

7.2 EU protected habitats

The Bern Convention also contains provisions for protected habitats.

The Bern Convention requires (Article 4.1) each party to take appropriate and necessary legislative and administrative measures to ensure the conservation of the



Pipistrelle bat

habitats of the wild flora and fauna species (especially those in Appendices I and II) and the conservation of endangered natural habitats. Further, each party must (Article 4.2), in their planning and development policies, have regard to the conservation requirements of the areas protected under Article 4.1 so as to avoid or minimise as far as possible any deterioration of such areas.

It can be seen from the reference in Article 4.2 to *“the areas protected under Article 4.1”* that the intention of the Bern Convention is that specific areas are to be protected under Article 4.1 as part of the ‘measures’ to be taken, even though Article 4.1 does not expressly require classification/ designation of protected areas. There is therefore a clear parallel with the site

classification/designation requirements of the Wild Birds (Special Protection Areas (SPAs)) and Habitats (Special Areas of Conservation (SACs)) Directives.

Further, whilst Article 4.2 does not mirror the prescriptive and precautionary regime for the assessment of impacts of plans or projects on SPAs and SACs under Article 6.3 Habitats Directive/Article 7 Wild Birds Directive, there is still a requirement that any deterioration of these areas must be avoided or minimised as far as possible. This obligation would also need to be read in light of the Article 4.1 obligation *“to take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the wild flora and fauna species (especially those in Appendices I and II) and the conservation of endangered natural habitats”*.

Finally, under Article 9 of the Bern Convention, a party may make exceptions (derogations) from the provisions of Article 4 of the Bern Convention if certain tests are met. These tests are that: there is no other satisfactory solution; that the exception will not be detrimental to the survival of the population concerned; and that the exception must be for a certain public interest need, such as public health and safety or other overriding public interests.

These three tests are similar to the derogation tests found in Article 6.4 of the Habitats Directive. As in Article 9, Article 6.4 requires that there is no alternative solution. Article 6.4 also requires that there must be imperative reasons of overriding public interest which may be of social or economic nature (i.e. so potentially going wider than Article 9 of the Bern Convention, which does not expressly include social or economic factors). Finally, Article 6.4 requires delivery of compensatory habitat measures to ensure the coherence of the Natura 2000 network, whereas Article 9 requires *“no detriment to the survival of the population concerned”*. It is difficult to see how one could ensure no detriment to the population unless one was prepared to provide compensatory habitat.

In addition, the UK also ratified the Ramsar Convention in 1976. Under this Convention the parties must designate suitable wetlands as Ramsar sites (Article 2.1) and promote the conservation of these

wetlands (Article 3.1). Article 4.2 then states that “*where a party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat*”. To the extent, then, that SACs or SPAs are also Ramsar sites (which is not uncommon), Article 4.2 of the Ramsar Convention goes some way towards duplicating the ‘habitat compensation’ requirements of Article 6.4 of the Habitats Directive.

In conclusion, the habitat protection regime envisaged by the Bern Convention (and to some extent the Ramsar Convention) is similar to, albeit less prescriptive, than that in the Birds and Habitats Directives. It could be argued that the Habitat Directive’s express precautionary rules over the assessment of impacts of plans and projects on protected sites would be ‘gold plating’ assuming that we leave the EU without the need for continued compliance with the Nature Directives. The success of this argument however is far from certain given the wording of Article 4.1 of the Bern Convention. A complete scrapping of the site protection provisions of the

Conservation of Habitats and Species Regulations 2010 is very unlikely to be ‘Bern Convention-compliant’, particularly where the domestic Sites of Special Scientific Interest (SSSI) protection regime in the Wildlife and Countryside Act 1981 and national planning policy is unlikely to be adequate (e.g. they do not apply in full the derogation tests as per Article 9 of the Bern Convention).

8. How will the domestic Courts interpret our natural environment legislation after Brexit Day?

This is the issue of greatest concern to many. The decisions of the CJEU on interpretation of the Nature Directives, which are at present binding on our domestic courts, have been extremely important in achieving protection of our natural environment.

As already noted, it would be open to the Government to agree, in the withdrawal agreement or even in a long-term agreement, that the UK will, in relation to environmental issues, remain bound by both existing and future EU environmental legislation and decisions of the CJEU.

However, the Government’s present intention appears to be to remove the UK from all influence of the CJEU after Brexit Day. Therefore, unless there is a change in the Government’s view, which in turn leads to a ‘soft’ Brexit, the existing supremacy of

(i) EU law over domestic law; and (ii) CJEU decisions over UK court decisions will be removed on Brexit Day.

This leaves us with somewhat of an ‘unknown’ in relation to the domestic court’s likely interpretation of our domestic natural environment law going forward.

After Brexit Day (and in the absence of a ‘soft’ Brexit), a domestic court would not regard *future* CJEU judgments on the Habitats and Birds Directives as binding on the UK. As regards CJEU judgments *already existing* on Brexit Day, the domestic court *may* be willing to regard them as persuasive. This would be on the basis that domestic legislation, under the Great Repeal Act, will reflect European legislation as at Brexit Day. However even this is not clear.

Our domestic Supreme Court and Court of Appeal judgments will of course remain binding on lower courts. But one can see arguments that if a particular Supreme Court or Court of Appeal judgment had been influenced by CJEU decisions which are no longer strictly binding on the UK, then those domestic judgments may also not be regarded as binding in the future.

Until the time comes and these arguments are made, we will not know how judges will respond. This issue is perhaps the most significant, since the strictness of the EU nature conservation regime is in large part attributable to CJEU interpretation of the legislation, rather than the letter of the law.

Notes

1. <http://press.conservatives.com/post/151239411635/prime-minister-britain-after-brexit-a-vision-of>
2. <http://uk.businessinsider.com/brexit-how-does-article-50-work-2016-7>
3. <https://consult.scotland.gov.uk/eia-transposition-team/transposition-of-environmental-impact>
4. <http://gov.wales/topics/planning/developcontrol/environmental-impact-assessment/?lang=en>
5. <https://environment-analyst.com/50553/government-may-not-transpose-third-of-eu-environmental-law>

About the Author

Penny Simpson is the Lead Partner for Environment at Freeths LLP. Specialising in natural environment law, she covers protected species, protected nature conservation sites, wildlife law, water law, environmental impact assessment, access to information and environmental permitting. She advises on regulatory compliance, criminal defence, planning issues, corporate and real estate transactions and public law challenges.

Contact Penny at:
penny.simpson@freeths.co.uk

Viewpoint: A Brexit Heretic

David Lowe MCIEEM

Local Authority public servant

[Deep Breath... open the closet door...] *"I voted to leave! ... Well that was a load off."*

But, do I walk out through the door? No. I turn around and start pushing through the faux fur coats (political rhetoric) and find myself standing on virgin snow where there is a lamp post shining like a beacon, showing a way. Not sure, yet, which way and there will be some wicked witches to tackle, but I know spring is coming. How do I know...? Because the last thing out of Pandora's box² was 'hope'. Hope also means 'faith' and 'optimism' and I'll return to these later.

Why

"Why!" or *"Why?"* was usually the first word a colleague uttered after I told them what I did on 23 June. My simple answer remains: *"We need a change; the system is broken."*

Luckily, as a Local Authority officer, change is my friend. I have learnt to 'evolve' or as it is now termed 'economic-climate change adaptation'. Ever year or so we get equipped with a pocket-sized 'Stress Management' book and the obligatory course. However, back to the question...

Why... if *"our profession has the backing of comprehensive legislation protecting designated sites and species on land, in water and in the seas"*³ are great crested newts, most bats and a multitude of other species still declining?

Why... do only 74% of planning officers only have a basic understanding of the mitigation hierarchy⁴. I would suggest this also applies to some planning inspectors and some ecological consultants who 'choose' not to understand the hierarchy. Collectively, they set precedents to eradicate all EU protected and NERC Act (2006) UK Priority Habitat outside SSSIs⁵.

Why... after *Making Space for Nature*⁶, does Natural England still plug what little money it has into the Jewels of the



Great crested newt © David Kilbey

Crown (SSSIs) whilst advocating Green Infrastructure (GI)?

Why... has there been a net decrease in the area of SSSIs in favourable condition; down from 44% in 2003 to 37.5% in April 2015⁷? Thus we are unable to 'inoculate' created habitat; especially when the stepping stones of Local Wildlife Sites and other GI assets have long since gone.

Why... are we still living outside of our planetary boundaries and heading towards a colossal mass extinction event⁸?

Why... am I so cynical and why did we have to look to Europe to save us?

Words of Doom

Did anyone listen to Merrick Denton-Thompson OBE at the CIEEM 2011 Summer Conference where he presented his *'Vision for the Future – Where Might Biodiversity and the Big Society be in 2050?'*⁹. He told us all off! He said that if we did not come together as one then we only have ourselves to blame for the world we live in. He told us to present a united case for strong wildlife protection and enhancement. He told us all to wake up and work together and demand change. He said that history tells us that the only other way change happens is through a revolution or an environmental disaster. I remember a picture of flooded London

with wind turbines, with the words *"Disaster or Opportunity"* underneath.

Well, perhaps he was right... we haven't got together, so we suffered a social revolution on 23 June. Must we wait for an environmental disaster?

How about we push our way to the back of the closet, through the snow, find that lamp post (beacon of hope) and get to work.

Faith

We have a very strong Institute with powerful friends; an Institute that has faith in its members to pull together and shape the future. When the Law Commission gets around to review the UK Wildlife Legislation (this would have happened in or out of the EU), we will be there whipping the red pen out of 'others' hands'. With the British Ecological Society (*et amicis*) we will have the evidence to prove what needs to be done.

Having attended the HS2 Select Committee, I found that the Members of Parliament understood ecological philosophies and the 'No Net Loss' principle. It is important to remember these politicians have just undergone an electorate beating, and told to listen to the populous... that includes us (despite being 'experts'!). That same populous voted in a recent YouGov poll:



© David Kilbey

- 83% said Britain should pass laws providing a higher (46%) or the same (37%) level of protection for wild areas and wildlife species than current EU laws. Only 4% want lower protection.
- 57% said British farming subsidies should put either more (25%) or the same (32%) emphasis on environmental protection than the current EU subsidies do. Only 7% said British farming subsidies should put less emphasis on protecting the environment.

The survey also revealed that those who voted to leave the EU were strongly in favour of maintaining or increasing the protection for nature that is currently provided by EU legislation, and linking farming subsidies to environment protection¹⁰.

So, I applaud my Institute for writing to Andrea Leadsom MP offering our assistance in drawing together her (Defra's) cunning plan. I also applaud my Institute's wish to get actively involved in forthcoming Select Committee Inquiries.

So who do we not have faith in...? (Ourselves...?) Are these the ones we need to change...?

Optimism

I will not say it is a *Brave New World*¹¹ as at the end nothing changed; he went mad and was laughed at! Instead, let us remember what we are... 'ologists (something I am not allowed to forget, as we (allegedly) get in the way of progress!). We are trained to explore hypotheses. So, I would like to explore some positive and working 'What ifs'.

What if... the shackles of EU Agri-environment funding pillars evaporated...? How would you spend the £40 billion?

Would it be on landowner incentive payments depending upon the value of Cultural and Regulating ecosystem services that they deliver (i.e. to maintain habitat)?

What if... Biodiversity Offsetting (or whatever you wish to call it!) complements the above paying for biodiversity enhancement, after which a landowner gets a high incentive payment?

What if... an Ecosystem Provisioning offset is introduced to compensate for the food or wood production lost through development (or other infrastructure projects) as this is the only ecosystem service not compensated for within planning functions?¹² What if ... this 'fund' supports 'sustainable intensification' contributing to national food security; lowering food prices, due to less importing³; less air miles, reducing atmospheric ozone and climate change; and less chemical inputs, cleaner water.

What if... protected species are considered through Spatial Ecology philosophies at landscape scales, where interconnected 'zoos' create a UK safari park? Here wildlife is allowed to co-exist with humans as they have growing populations. I believe this is called Favourable Conservation Status.

What if... all of the above happened (both terrestrially and in water) to create an integrated approach to nature conservation, delivering a united approach led by Government, but enacted through empowered bodies that know their local areas intimately?

What if... all Local Authorities could prepare their own protected species and habitat strategies compliant with national ecological flow maps (aka the 'united approach led by Government') so that developers have

certainty as to how and where (not) to develop in a sustainable manner.

What if... you could think of more? How would you promote it, test it and enact it?

What if... we had stayed in Europe? Would we have had the opportunity to test these hypotheses?

A Time of Change

We are living through a time of change. The main one being the sixth mass extinction event¹³ and another is this parliamentary reform. Let us get our priorities right and look to the words of Mahatma Gandhi: *"Be the change that you wish to see in the world"*. Aslan willing, I will do my best. Will you?

Notes

1. *As Good as it Gets* (1997).
2. Jones, W. (2016). The Reality of Brexit. *In Practice* 93, September 2016.
3. Baker, A. (2016). Brexit: What now for the ecological consultancy market? *In Practice* 93, September 2016.
4. http://www.cieem.net/data/files/Resource_Library/News/ALGE_Report_on_Ecological_Competence_and_Capacity.pdf
5. The mitigation hierarchy is international best practice, not just European.
6. <http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>
7. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492530/1_Protected_Sites_2015_Final.pdf
8. <http://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html>
9. <http://www.cieem.net/2011-summer-conference>
10. https://www.foe.co.uk/resource/press_releases/uk-public-overwhelmingly-back-eu-rules-protect-bees-nature-yougov-survey
11. Huxley, A. (1932). *Brave New World*.
12. Note to developers: If Biodiversity Offsetting complements the Agri-environment payments then the cost you currently pay (in Warwickshire) would probably be reduced... so you won't necessarily pay any more in contributions than you do now!
13. <https://www.theguardian.com/environment/2015/jun/19/humans-creating-sixth-great-extinction-of-animal-species-say-scientists>



Greater horseshoe bats

Bats and Transport Infrastructure

Chloe Delgery CEnv MCIEEM
Senior Ecologist, Atkins Ltd

An evidence-based report on bats and transport infrastructure was published in April 2016 by Cerema (*Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement*).

This French publication stems from a state-led National Action Plan to protect all 34 species of bats in France that was set up in 2009. The UK shares over half of these species and a lot of the information provided in this guide can be transferable and/or drawn upon for infrastructure schemes in the UK. This guide summarises a large number of experiences and case

studies with comprehensive references drawn from both French and British work as well as other European countries including Germany and the Netherlands.

Structured in a simple and educational way with extensive illustrations, this guide provides a wide range of information and recommendations for the appropriate consideration of bats in the construction or operation of transport infrastructure. It is intended for all stakeholders of a road or rail project. Examples are included of various mitigation techniques presented in a thematic way, addressing both temporary and permanent impacts and compensation measures, with honest discussions of their effectiveness provided by the ecologists who have monitored them. There is a

very useful table laying out the costs of various mitigation options per area or per length, which are colour-coded based on their effectiveness. The annexes are very informative, including an excellently illustrated table listing the various types of structures built as part of a transport scheme, their potential for use by bats, and which specific features bats have used within these structures.

The following sections provide a snapshot of some of the findings.

Mitigation measures to minimise permanent impacts

Ultrasonic tarmac

A novel method led by the *Groupe Chiroptères de Provence* currently under

experimentation has been used on two local road schemes where ultrasonic pre-coated sections of tarmac are laid at regular intervals on either side of a known crossing point used by bats. The acoustic properties of these sections produces powerful sounds within the sensitivity of the bat species when a vehicle drives over them, alerting the bats to the oncoming traffic. Although in its infancy and only tested and targeted at greater horseshoe bats, this method is showing promising results. Its use on high-speed roads (110-130km/h) has limitations as bats would not seem to have sufficient time to react to the warning sound generated by moving vehicles on the coated surfaces, nor to manage the abundance of vehicles (life + Chiro Med, 2013).

Feedback on the use of underpasses

In cases where a new road is on an embankment, the bigger the dimensions of the underpass (under-bridge), the more it is used by bats. A minimum of 4.5m in height and 4-6m in width is advised so that all bat species can use it. It seems that the height of the structure is more important than its width. In terms of culverts, a diameter of 2-4m is recommended depending on the species, 3m being optimum. It is advised that:

- an opaque screen is installed along the roadside above the structure in order to avoid 'light spill' from moving vehicles;
- the underpass is connected to nearby wooded vegetation; and
- the use of the underpass can be improved by progressively decreasing the height of the vegetation leading to its approach (which will encourage high-flying bats to lower their flying height and go through the underpass).



Barbastelles, an Annex II species of bat found in Southern England and France
(© C. Delgery, Wiltshire Bat Group 2015)

New survey techniques

'Trajectography' is a technique which reconstructs the movement of an individual bat through a 3D display of its calls recorded whilst on the move. It is based on the recording of bat calls using several ultrasonic sensors and modelling of the calls recorded using the Bat3Data monitoring package (see article by Pouchelle *et al.* in issue 87 of *In Practice*, March 2015). This technique can therefore recreate flight paths presented on a 3D model. A promising technique currently at experimental stage in several locations in France.

Monitoring of mitigation measures

Monitoring of implemented measures and their success or failure is only possible if, i) initial baseline data have been adequately collected, and ii) the design of the monitoring protocol is robust and replicable. A 10-year programme is generally preferable in order to allow for seasonal changes, adaptation and indirect effects, although annual monitoring throughout is not necessary: undertaking annual monitoring over the first three years then spacing out monitoring the following years (Y+8, Y+10). Monitoring during construction can also assist in measuring impacts during this development phase.

CIEEM Training

Survey and Monitoring of Road and Rail and Associated Mitigation Schemes for Bats: Pre, During and Post-construction

Leeds – 23 February 2017 Trainers: John Altringham and Anna Berthinussen

Level: Intermediate - Advanced

Training sessions will describe survey approaches suitable for assessing the impact of road and rail on bat activity and diversity in pre-, during and post construction phases. It will also cover methods for assessing the effectiveness of mitigation structures (such as underpasses and green bridges) at increasing crossing permeability and safety for bats.

CIEEM Members £90 Non members £180 www.cieem.net/training-events

About the Author

Chloe is a Senior Ecologist with Atkins. She specialises in bat work and is licensed to an advanced level and is a certified tree climber. Chloe is the founder of the Atkins UK Bat Network Initiative which promotes best practice and knowledge sharing, and is involved in several voluntary bat conservation projects.

Contact Chloe at:
chloe.delgery@atkinsglobal.com



CIEEM Awards 2017



CIEEM Members, now is your chance! Individual, organisation, project; a chance to celebrate your success in the field of Ecology and Environmental Management.

www.cieem.net/cieem-awards-2017

Promising Professionals

Sally Mousley CEnv MCIEEM and Mark Webb CEcol CEnv MCIEEM

It is difficult to establish a career as an ecologist or environmental manager. Firstly, it often entails reading for an environmental degree which requires time, effort and university fees to obtain the necessary qualifications. And many employers in fact now recruit MSc and not BSc graduates onto their Graduate programmes which requires further investment.

Then it is a question of how to get some relevant experience and a foot in the door. New entrants to the environmental sector often carry out extensive voluntary work to this end. This applies particularly to those embarking on a career without an environmental degree, who may build their knowledge and skills through voluntary work whilst also holding down a job in another sector.

After that new entrants often embark on low-paid internships and a career which is not likely to lead to fame and riches. Presumably they do it because they are committed to achieving improved environmental outcomes, in some way, shape or form. Presumably, that's why we all became ecologists and environmental managers too!

As established environmental professionals, we should look to provide support, encouragement and inspiration to our more junior colleagues where and when we can. Receiving encouragement in the early stages of your working life can mean a lot and provide motivation and help in developing your career. If you would like to provide encouragement to someone who is just embarking on their career, **you might consider nominating them for CIEEM's Promising Professional Award.**

Since 2013 the award has been given annually to a person in the early years of their career who has demonstrated above-average competence and a strong commitment to professional development. Winning the award would give a tremendous boost to your nominee's morale and provide a fine addition to their CV. Even if they weren't lucky enough to win the award the fact that they've been

nominated will show them that their skills and commitment are valued and raise their confidence. A nomination will also demonstrate that your organisation provides a supportive working environment for developing professionals.

How do I go about nominating someone?

Nominating someone is not difficult and need not take you more than a couple of hours or so. All that is needed is up to 1,000 words of text to show how the nominee has demonstrated each of five relevant qualities and attributes (see below).

The Award is open to all Associate, Graduate and Qualifying members of the Institute who are in the first three years of their professional career. You must be a Full member or Fellow of CIEEM to nominate someone for the Award and the nomination has to be made by two CIEEM members. Self-nominations are not accepted.

To nominate someone for the award, complete the short nomination form available to download from the CIEEM website at www.cieem.net/cieem-awards-2017. The form requires you to very briefly summarise your nominee's career and then to set out their suitability for the Award in terms of the five professional qualities and attributes covered below. There is a 1,000-word limit on the nomination but you can submit up to four pages of additional material to support the entry. This additional material can include testimonials from clients/partner organisations and/or examples of the candidate's work. Completed nominations have to be returned by Monday 30 January 2017.

What makes a good quality nomination?

Nominations will be assessed by five members of CIEEM. The judges consider the evidence presented for each of the five professional qualities and attributes.

Nominations should be clear on what it is that the nominee has done, using specific

examples from their work, and how this demonstrates above-average competence. Where possible, different examples should be used for each quality or attribute, although this is not essential. It is not necessary to cover every point listed below but the nomination should demonstrate as many as possible.

Remember the nomination form is all that the judges will use in the assessment so, to give your nominee the best chance, you must make sure that you describe clearly what it is your nominee has done that demonstrates above-average competence and their commitment to professional development.

1. Knowledge and skills

Demonstrates:

- Effective application of knowledge and skills above the expected level for the grade of employment
- The ability to take responsibility for personal development
- The ability to be a self-starter and use initiative

2. Communication

Demonstrates the ability to:

- Successfully communicate ideas and complex messages with a range of audiences
- Share knowledge and experience with others
- Communicate effectively through a variety of media (i.e. articles, presentations, reports etc.)
- Seek and respond to feedback

3. Leadership and team working

Demonstrates the ability to:

- Build and sustain productive working relationships
- Successfully influence others
- Inspire and motivate others



Winners of the 2016 CIEEM Awards

4. Making decisions and problem solving

Demonstrates the ability to:

- Act decisively
- Use knowledge and skills to inform decisions
- Use innovative/creative approaches
- Challenge and investigate
- Manage the expectations of others

5. Personal achievements

Demonstrates the ability to:

- Take responsibility and deliver results (on time and in budget)
- Show initiative and enthusiasm
- Exceed expectations
- Be flexible and adaptable
- Self-manage and perform well under pressure

Let's provide support and encouragement to our junior colleagues by nominating them for the Promising Professional Award!

About the Authors

Sally Mousley is Senior Advisor in the Ecological Networks Team at Natural England.

Dr Mark Webb is Technical Director and Head of Ecology at WSP | Parsons Brinckerhoff.

Sally and Mark were both on the judging panel for the 2016 Promising Professional Award.

For more information, please contact:
awards@cieem.net

CIEEM Celebrates 25 Years with National Events

Kate Flood

Irish Section Support Officer, CIEEM

Jason Reeves MCIEEM

Policy and Communications Manager, CIEEM



Jenny Neff, Paul Lynas and Paddy Woodworth



Cake cutting

Dublin

The Irish Section of the Chartered Institute of Ecology and Environmental Management (CIEEM) celebrated the Institute's 25th anniversary at an event on Thursday 22 September 2016 in the Royal Irish Academy in Dublin with members, guests and colleagues from state, semi-state, academic and NGO sectors. The guest speaker for the event was writer, lecturer and journalist, Paddy Woodworth, whose thought-provoking subject was: 'Novel Ecosystems' - new normal or red herring?

CIEEM's Vice President (for the island of Ireland), Jenny Neff CEcol CEnv FCIEEM, welcomed guests and provided an overview of CIEEM's 25-year history, as well as outlining progress made in the 10 years since the Irish Section was set up:

"As well as being CIEEM's 25th anniversary, 2016 is the Irish Section's 10th anniversary. With approximately 250 members, the all-island Irish Geographic Section of CIEEM is uniquely placed in that it comprises two jurisdictions - Northern Ireland and the Republic of Ireland. Our current Convenor, Paul Lynas, is the first Northern Irish member to hold this position. We must remember that many of our members - ecologists and environmental managers - work on both sides of the border, with

the potential consequences of Brexit unknown but inevitably significant in terms of practical cross-border working; also in terms of nature legislation and protection of habitats and species in the North. CIEEM is actively engaging and willing to work with, and assist, stakeholders in this regard. CIEEM in Ireland has made great progress - far more than we might have envisaged or even hoped for in the early years. It continues to strive in raising standards and awareness across all sectors in Ireland."

CIEEM's mission is to raise the profile of professional ecological and environmental

management and promote the highest standards of practice for the benefit of nature and society. The illustrious surroundings of the Royal Irish Academy, with its wealth of history, learning and excellence, provided a fitting location for the celebration of CIEEM's 25th anniversary, and we look forward to the progress and challenges of the next 25 years.

London

CIEEM's 25th anniversary event in London was held at Brown's Courtrooms in Covent Garden on Thursday 29 September 2016. The event was attended by a range of members and invited guests.

CIEEM President, Stephanie Wray CEcol CEnv FCIEEM, gave a brief history of the Institute and how far we have come in a quarter of a century. She also reiterated her priorities for CIEEM during her presidency, which are to: raise standards in the profession; increasing the membership; and increase CIEEM's profile and influence.

Our guest speaker in London was CIEEM Patron Professor Sir John Lawton FRS. John gave his very frank and forthright views on Brexit and indeed on politicians, in what was certainly a thought-provoking and refreshing talk.



John Lawton, Sally Hayns and Stephanie Wray



Stephanie Wray cuts the cake



Jane Davidson addresses guests



Jane Davidson cuts the cake

Cardiff

A small but select gathering, including one Assembly Member and a number of Welsh Government representatives, convened at the Welsh Centre for International Affairs in Cardiff on 5 October 2016 to celebrate CIEEM's 25th anniversary.

CIEEM Vice President (Wales), Mike Willis CEcol MCIEEM, introduced CIEEM and its history.

Our guest speaker in Cardiff was Dr Jane Davidson, who is a CIEEM Patron, a former Wales Environment Minister, and is currently Director of the Institute of Sustainable Practice, Innovation and Resource Effectiveness (INSPIRE) at the University of Wales Trinity Saint David. Jane spoke about the recent Welsh *State of Natural Resources Report (SoNaRR)* which states: "Overall, diversity is declining, which is shown by loss of habitats and species. The 'extent' of some habitats has also declined significantly. 'Condition' shows mixed results, while 'connectivity' has greatly reduced. All ecosystems have problems with one or more attributes of

resilience. This means that their capacity to provide ecosystem services and benefits may be at risk. No ecosystem, on the basis of our assessment, can be said to have all the features needed for resilience. We need action to build resilience and adaptive management of our natural resources."

Jane further discussed the importance of the Well-being of Future Generations Act, its seven well-being goals and 46 indicators and also highlighted the importance of the wording of the descriptors of the well-being goals.

Some challenges for the future that Jane highlighted were:

- Brexit;
- austerity;
- a lack of political support for environmental issues; and
- the need for commitment to deliver the Well-being of Future Generations Act.

Jane concluded her talk by saying that we all have an individual, and a collective, responsibility to future generations.

Edinburgh

The Scottish leg of our 25th anniversary events was held in the Edinburgh City Chambers (somewhat fittingly for Scotland we were in the European Room) on Wednesday 19 October 2016.

Kathy Dale CEcol FCIEEM, CIEEM Vice President (Scotland), welcomed everyone and gave an overview of CIEEM's history and the history of CIEEM in Scotland too.

Kathy highlighted some issues for the future in Scotland, which included:

- the decline in wildlife as shown by the latest State of Nature reports;
- the fact that CIEEM is well connected to the agencies and government but could do more to influence positive change; and
- the challenge of Brexit in Scotland.

Our guest speaker was Robin Harper, current Chair of the Scottish Wildlife Trust and former Scottish Green Party MSP, who spoke on a theme of partnership, and how organisations need to work together; including with those organisations taking actions or advocating policies that we might disagree with. He added the importance of education and in ensuring that people are 'environmentally literate'.

Following Robin's talk there was an interesting Q&A discussion, which included discussions on how to engage with politicians through direct meetings and how ecologists and environmental managers should be more assertive in order to raise the profile and influence of the profession.



Guests at the Edinburgh City Chambers



Kathy Dale and Robin Harper

Is it time to upgrade your membership to the next level?

Why upgrade your membership?

We understand that our members value different things about their CIEEM membership and there are many different drivers behind initially applying to become a member, and in time upgrading to the next membership level. Whatever your motivation, with higher grades of membership comes greater public and professional recognition, access to a broader range of membership benefits and the support, guidance and information that it most relevant to you.

CIEEM's Competency Framework underpins our professional development programme and membership application processes. It is proving to be a useful tool to a growing proportion of the membership, and also a number of employers, to assist with both personal and professional development. It is important for all of our members to make sure that they are at the appropriate grade of membership to ensure their competency and skills are acknowledged by their peers, clients and employers and that expectations are managed.

Upgrading your membership does require you to spend some time assessing your current skills and reflecting on the breadth of your experience. This supports our continued aim to raise and maintain standards in the sector and is typically seen to be a worthwhile experience for those that complete it.

What do you need to do to upgrade to the next level?

1. Watch our application video

If you're upgrading to Graduate, Associate or Full membership we firstly recommend that you watch the short video on the 'Membership' pages of the CIEEM website. This will provide you with an overview of the application process and what you'll be expected to do.



2. Familiarise yourself with our Competency Framework

If you've not done so already, you will need to familiarise yourself with the Competency Framework. You should use the framework to see what our assessors are looking for evidence of in your application. Assess yourself against the framework to see where your strengths are.

3. Think about possible examples you may use

Put time aside and have a think about possible examples you may be able to use within your application. You will

need to provide evidence for the seven competencies you choose within your application. More detailed information about the application process is available in our guidance document for applicants which is worth spending some time reading through.

4. Approach suitable sponsors

Make sure you have suitable sponsors in mind who would be able to support your application. Check that they would be happy to endorse the examples and evidence you are providing in your application form. You can direct them to

Category	Definition	Descriptor
Level 1 BASIC	Has a basic knowledge, with a simple understanding of terminology and concepts. Has some experience of practical application. Would be able to carry out standard activities under supervision.	<p>NB: To be competent in this activity you will be able to demonstrate the majority, if not all, of the bullet points.</p> <ul style="list-style-type: none"> You recognise the terminology and concepts, and broadly understand what this activity is about. You have a basic understanding of the importance of this activity. You have some experience of practical application in this activity. You would not be expected to undertake tasks in relation to this activity unless under supervision.
Level 2 CAPABLE	Has the knowledge and experience essential to carry out standard activities unsupervised confidently and consistently. Is likely to need to seek advice before carrying out complex or non-standard activities.	<ul style="list-style-type: none"> You understand the terminology and concepts and are aware of any drivers supporting this activity. You have experience of putting this activity into practice. You can carry out this activity to the expected standard when straightforward, following advice and guidance as necessary. You know where to source guidance and information regarding this activity and use this confidently. You can identify when things are generally being done as they should and you can spot if things are not right. You can judge your own limits with regards to this activity and, if appropriate, who to defer to in the event of needing further advice.
Level 3 ACCOMPLISHED	Has the knowledge and experience of this activity to carry out complex, specialist or non-standard activities confidently and consistently. Is aware of alternative options and approaches and can provide guidance, instruction and advice to others.	<ul style="list-style-type: none"> You are knowledgeable on this subject and are capable of explaining it to a range of different audiences. You have extensive experience of applying this activity in practice. You can deal effectively with difficult or complex issues relating to this activity, and consider alternative solutions. You can make decisions confidently regarding this activity. You can provide guidance, instruction and advice to others and may provide mentoring and/or coaching about this activity.
Level 4 AUTHORITATIVE	Is widely recognised as an authority, both by others within the organisation and/or by external peers for the knowledge and experience they demonstrate on the activity.	<ul style="list-style-type: none"> You have a detailed level of knowledge relating to the activity and its application in many and varied circumstances. You are able to share your knowledge with others have done so on many occasions with a wide range of audiences. You are routinely consulted on this activity by others in the profession. You can solve highly complex problems independently relating to this activity and may have set new related standards and industry benchmarks. You routinely provide authoritative guidance, instruction and advice to others. You may contribute to the development of industry policy, standards and guidelines relating to this activity. You may be called upon as an expert witness in relation to this activity. You may deliver training and education to others on this activity at all levels of competence. <p>(NB: At this Authoritative level you may demonstrate only three or four of the descriptor statements)</p>

our Sponsors Resources webpage where they can find more information on what being a sponsor entails.

Ideally sponsors should be CIEEM members who are at the same grade, or higher, than the one you are applying for. If this is not possible we do accept sponsors who are members of other professional bodies at a similar grade of membership to that that you are applying for with CIEEM.

5. Make sure your CPD record is up to date

You'll need to make sure your CPD records are up to date, as we will need this for the last three years (or since you joined CIEEM if less than that) in support of your application. You can keep on top of your CPD record at any time by logging into our CPD tool. <https://cpd.cieem.net/>

6. Download an application form

Once you've completed steps 1-5 you're ready to download an application form. When completing your application ensure you keep referring to the information provided in our guidance document for applicants.

Key things to remember about upgrade applications

- You can upgrade at any time of year – you don't need to tie it in with your annual membership renewal!
- Make sure you look at the differences between competence levels in the framework and are able to clearly demonstrate and evidence what is expected at a higher level of competence. Remember the framework is what our assessors are using to review your application against.

All the guidance information and reference documents you will need to complete an upgrade application are available on the Membership pages of the CIEEM website. <http://www.cieem.net/upgrade-your-membership-here>. If you have any specific questions about upgrading, please email them through to the membership team via membership@cieem.net.

Advertise Work Experience Opportunities for FREE!

If you are able to offer a work placement, traineeship, apprenticeship or internships and you follow CIEEM's Guidelines on offering such work-based learning opportunities (see *Professional Guidance Series no. 9: Guidelines on Providing Quality Work Experience* in the members' area of the website) you can now advertise them for **free** on the CIEEM website (www.cieem.net/work-experience-opportunities).

We will also actively promote your opportunity to CIEEM Student members and those following our accredited degree programmes and degree pathways.

Providing work experience opportunities is a great way that you and your organisation can help those seeking a way into our profession, so why not plan to take advantage of this opportunity in 2017?

CPD Annual Audit – Are You Prepared?

Whilst it is no longer a requirement that members submit their CPD record annually to CIEEM, it is still a membership obligation that all members (other than students – who automatically undertake CPD as part of their studies – and retired members who are not Chartered members) undertake the required minimum level of CPD and record it appropriately.

Each year CIEEM undertakes an audit of a percentage of its members to review their CPD record and ensure that they are meeting the obligation. It makes life a lot easier for you – if you are included in the audit – if you already have your CPD record up-to-date and can submit it to us, preferably using the online 'my CPD' tool. Failure to supply an adequate record of CPD when asked to do so can result in a disciplinary inquiry regarding a potential

breach of the *Code of Professional Conduct*. We do not want that to happen and we are sure that you would not either!

We recommend that all members use our 'My CPD' online tool which was launched earlier this year. The tool allows you to plan and record CPD entries with ease. Further Information on how to use the tool and FAQs can be found on our website.

www.cieem.net/how-can-i-effectively-record-my-cpd-

Chartered Membership

Fellows and Full Members of CIEEM can develop their skills and gain professional recognition from employers, colleagues and clients by achieving Chartered status. CIEEM offers two Chartership awards:

- Chartered Ecologist (CEcol): The Register of Chartered Ecologists recognises the effective application of knowledge and understanding of the science of ecology by professionals committed to the highest standards of practice.
- Chartered Environmentalist (CEnv): CIEEM is one of 23 professional bodies licensed by the Society for the Environment (SocEnv) to award Chartered Environmentalist status. CEnv is an increasingly recognised standard of good environmental practice.

The following profile highlights the work of Chartered professionals and provides an insight into the kind of roles that these senior ecologists and environmental managers are required for.

Please note, these dates are subject to the availability of assessors and may change.

New Chartered Members

CIEEM is pleased to announce the following new Chartered members:

Chartered Ecologist	Chartered Environmentalist
Mr Andrew Whitfield CEcol CEnv MCIEEM	Mr Tom Gray CEnv MCIEEM
Mr John Simmons CEcol CEnv MCIEEM	Mr Gary Noble CEnv MCIEEM
Dr Richard Birch CEcol MCIEEM	Dr Duncan Ferns CEnv MCIEEM
Mr Robert Yaxley CEcol CEnv MCIEEM	Mr Michael Stopa CEnv MCIEEM
Mr Matthew Neale CEcol MCIEEM	Miss Hannah Greene CEnv MCIEEM
Dr Suzanne Wilkinson CEcol MCIEEM	
Miss Lucy Cash CEcol MCIEEM	
Mr William Holden CEcol MCIEEM	

Chartered Ecologist application deadlines

CEcol Application due date	CEcol Interviews	Ratification
2 January 2017	w/c 27 March 2017	TBC
3 April 2017	w/c 26 June 2017	TBC

Chartered Environmentalist application deadlines

CEnv application due date	CEnv report submission deadline	CEnv Interviews
3 April 2017	26 May 2017	TBC



Rebecca Cracknell
CEcol MCIEEM

Senior Ecologist, Jacobs UK Ltd

Why did you join CIEEM?

To provide a structured approach to my career development and so my achievements in my role could be recognised within a professional body.

Why did you apply for Chartered status?

For a long time ecologists have struggled in the wider engineering sector to be recognised as anything more than greenies or tree huggers! So to finally be able to be a part of a Chartered Institute with Chartered status really appealed to me, and I applied as soon as possible.

How did you find the process?

Completing the application made me realise the depth of experience that we can gain in ecology, and it was easier to pull together the evidence than I thought it would be – ecologists aren't all about bats and newts! I'd recommend it to anyone who is thinking about applying, as the process isn't as complicated as it looks and it's a useful review of your strengths and weaknesses, even if you aren't quite ready for chartered status yet.

What is your education background?

I have a BSc (Hons) in applied ecology (2007) and an MSc in conservation biology (2009), both from Manchester Metropolitan University.

What is the best thing about your job?

It's great to be able to play a part in major developments and infrastructure for the benefit of the natural environment, and the role of an ecologist is constantly changing with updated legislation and technologies so there are always new challenges to face.

If you are interested in submitting your own profile please contact the Registration Officer, Michael Hornby, at RegistrationOfficer@cieem.net.

CIEEM Membership Update

For CIEEM to work both individually and collaboratively with other professional bodies, learned societies, associations and NGOs to ensure that messages are clear and unequivocal in terms of what needs to be done to safeguard and enhance the environment, and to hold governments to account over the continued improvement and implementation of environmental legislation and policy, it is vital that we continue to represent the views and expertise of an informed, engaged and committed body of members.

The Membership team has therefore spent much of the year reviewing and refining membership administration, application and assessment processes as part of our ongoing efforts to build and support a body of members with a broad and diverse range of skills and experience. There is much work still to do, but in recent months we have:

- undertaken a review of member benefits;
- opened up our Student membership category to all students with an interest in the work of professional ecologists and environmental managers;
- limited the length of time that Students members can remain in this category to 12 months post-graduation to encourage and enable progression;
- streamlined the membership structure by closing the under-used Supporter category;

- changed some of the requirements regarding sponsors for new applicants which were proving to be unnecessary obstacles to the application process;
- continued to work with the Membership Admissions Committee to improve the quality of feedback provided to new applicants and those seeking to upgrade their membership;
- clarified the process of upgrading membership and encouraged those that should be eligible and able to do so to consider it;
- increased the number of volunteers assessing applications to speed up the process.

As we enter 2017 we will be undertaking a full review of all membership grades to make sure that they are fit for purpose and offer useful and relevant benefits; to better enable potential members from currently under-represented sectors to find a place within the wider membership body; and to improve access to higher grades of membership for those joining us through non-academic routes.

We have also invested in a new database that will allow us to increase our knowledge of the skills, experience and interests of our members and potential members. This will allow us to improve the relevance of our communications to you and in time will allow members to tailor their online experience more closely to their specific areas of interest or specialism. Importantly, it will make it easier for us to provide you with opportunities to support the work of the Institute that are better suited to your own areas of expertise. In addition, we will be launching a significantly improved online Professional Directory and a much more versatile and user-friendly event booking process. All of these developments will allow Secretariat staff to spend more time developing both relationships with you and products and services for you.

We continue to see encouraging interest from members in both the Chartered Ecologist and Chartered Environmentalist awards and have been pleased to see the growth of the Chartered Ecologist Register in particular. The current admission rate for Chartered Ecologist applicants is a healthy 78% and we continue to receive positive feedback about the process from applicants. Nevertheless, with excellent support from the Registration Authority we have continued to review the application and assessment processes to make applying for the award as straightforward as possible without compromising standards. During the course of this year we have piloted holding Professional Review Interviews for applicants by video conference with great success and will be offering this far more widely going forward. We are also looking for further opportunities to promote both the Chartered Ecologist and Chartered Environmentalist awards and will be looking to expand our programme of workshops on the application process throughout the UK and Ireland, as well as delivering them through lunchtime webinars.

As always, our friendly and knowledgeable Membership Team and Registration Officer are available to assist members considering upgrading their membership or applying for Chartered status. Please do contact them for support, guidance and further information on 01962 868626, or at membership@cieem.net or registrationofficer@cieem.net.



Member Network News

CIEEM has two types of Member Networks: **Geographic Sections** and **Special Interest Groups**. Each is run by a committee of members for the benefit of other members, providing 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.



WEST MIDLANDS

Peregrine Study Tour

18 July 2016, University of Birmingham

Attendees gathered between 9:30 and 10am at the north gate of the University of Birmingham and Stefan set up his scope to view the nest box and ledges on the clock tower. Issues were discussed informally before relocating to the base of the clock tower to view the family of four birds, including two youngsters, from another angle. All four were seen in flight and heard vocalising loudly! We finished with a short PowerPoint presentation inside, wrapping up around noon.

Stefan ran his first peregrine ecology, survey and mitigation training course with CIEEM this May – look out for a repeat of this in the Spring 2017 training programme.

2017 MEMBERS' AWARD

This award is designed to celebrate someone who has made a significant contribution to the profession on a local, regional or national scale. Nominations can only be made via our Member Network Committees, so if you know someone who you would like to see nominated, please get in touch with your local Committee to help them do just that. For further details please visit www.cieem.net/cieem-members-award. to all who took the time to vote online.



SOUTH WEST ENGLAND

Habitat Restoration and Reclamation at Park Lake

28 June 2016, Bodmin Moor

Despite the wet and windy conditions, 20 members assembled at Jamaica Inn and convoyed to Park Lake, a former China clay quarry now owned and managed by South West Water as a strategic water resource. Ian Davies (Code 7 Consulting) led the visit and described the heathland and other habitat restoration work carried out by SWW over the last few years. SWW has taken an ecosystem services approach to the site and their investment in restoring local moorland and wetland habitats is seen as the most cost effective way of ensuring good water quality.

2016 ELECTIONS

The first of our new annual online elections is now complete and you can find results at www.cieem.net/elections-2016. Thank you

SCOTLAND

Scotland Section Conference 2017: Creating Sustainable Cities using an Ecosystem Services Approach **18 January 2016, Perth**

Urban habitats such as green spaces, park gardens and amenity open spaces provide a range of ecosystem services at the local level. However, they have not been thoroughly explored with regard to the role they provide in human well-being and economic prosperity, and have been consistently undervalued in economic analysis, planning and decision-making.

This topic is high on the political and environmental agenda, and the conference will cover many of these aspects.

You can find out more about this conference at <http://www.cieem.net/events/1297/scotland-section-conference-2017-creating-sustainable-cities-using-ecosystem-services-approach>.



SOUTH WEST ENGLAND

Salisbury Plain Site Visit

21 July 2016

A small group of CIEEM members was lucky enough to visit the Salisbury Plain Training Area (SPTA), hosted by the ecologists at Defence Infrastructure Organisation (DIO) (Oliver Howells, Julie Swain and Lisa Wade) and members of SPTA HQ Training Safety Officers. Over 19,600ha of the site is part of Salisbury Plain SSSI, designated for chalk grassland and a range of other interest features (25 in total).

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

WALES

Welsh Conference 2017:

Building Bridges between Farming and Nature: Grazing is Amazing

8-9 February 2017, Llandudno

This conference – organised jointly between the CIEEM Wales Section Committee, PONT and Natur – will explore the relationships between people, their animals, and the land on which they live. We will discuss ways to better manage our farmland and countryside through appropriate grazing systems, using the right number and type of animals at the right time of year and on the right habitat. Implemented well this can result in huge benefits for all parties: for the health and well-being of livestock, for farmers who want a cost-effective low-input farm management system, for countryside managers who can take a step back from other more time-consuming habitat management methods, and for the wildlife that Wales supports.

Look out for further details at www.cieem.net/events/1287/welsh-conference-2017.

OVERSEAS TERRITORIES AND MARINE SPECIAL INTEREST GROUPS

Conference 2016: Protecting marine and coastal areas in the UK and Overseas Territories

21 September 2016, London

This one-day conference brought together 52 experts and interested participants working in the UK and in 14 UK Overseas Territories. A total of 12 presentations were given with keynote presentations by Johnny Briggs from the Pew Trusts and Professor John Turner from Bangor University.



You can find all speaker information and presentations at www.cieem.net/previous-conferences.

To find out more about CIEEM's Special Interest Groups visit www.cieem.net/special-interest-groups.

MIDLANDS

West and East Midlands Section Conference 2016:

Ecology and the Historic Environment: Conflicts and Consensus

12 October 2016, Calke Abbey, Derbyshire

Sixty people gathered in the stunning surroundings of Calke Abbey for this conference. Talks included a look at the management of veteran trees, ornamental lakes, deer parks and church bats, along with case studies on Moccas Park and Coombe Country Park. The challenges inherent in managing a heritage landscape demonstrated the value of a robust Conservation Management Plan to aid in conflict resolution.

Donning boots and waterproofs, the afternoon workshops took delegates out to see some of these principles in action on the Calke estate and a few autumn showers were soon forgotten over tea and homemade cakes back at the barn. An enjoyable and informative day.

You can find speaker details and presentations at www.cieem.net/previous-conferences



Calke Abbey



Jon Webb on surveying invertebrates of veteran trees



Lake management workshop with Carl Hawke

Look out for upcoming events in your area and keep up to date with news of what's been going on at www.cieem.net/member-networks. Find out how you can get involved at www.cieem.net/get-involved.

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

Toby Abrehart, Elizabeth Baldwin,
Naomi Boyle, Paul Bradley,
Hannah Carruthers, Elizabeth Clements,
Mike Douglas, A. Claire Gilchrist,
Guy Harewood, Christine Hipperson,
Liza Inglis, Dr Joel Kimber, Eve Leegwater,
Heather Lowther, Michael McLaughlin,
Emma Parnwell, Dr Simon Pickett,
Dominic Rigby, Samantha Saunders-Davies,
Oliver Silver, Dr Andrew Tharme

Upgrades to Full Membership

Richard Anderton, Dr Mark Breckels,
Rebecca Brown, Alan Bull,
Emma Gwilliam (nee Barnes),
Matthew Harding, Ellen Harpham,
Laura Hobbs, Dr Miles Newman,
Dr Connie O'Driscoll,
Paula Richings-Riches, Alison Sharkey,
Heather Simpson, Morgan Taylor,
Cassie Todd, Zoe Webb, Valerie Wheeler,
Sarah White

Associate Members

Emma Bagguley, Jennifer Care,
Colm Clarke, Dr Adam Cross,
Charlotte Eva, Liam Fahey, Michael Fray,
Molly Gorman, Patryk Gruba, Robert Hall,
Robert Hawkins, Jenny Stephenson,
Kitty Straghan, David Sutherland,
Neill Talbot, Jeff Taylor, Imogen Young

Upgrades to Associate Membership

Jessica Andrews, Victoria Armstrong,
Ella Barnett, Frances Bennett,
Jessica Breeze, Craig Bulga,
Rebecca Clews-Roberts, James Coope,
Peter Cowley, Domhnall Finch,
Natasha Firth, Sophie Higgins, Sarah Ive,
Ruth Kernohan, Craig Llewellyn,
Jason Mackay, Emma Mackenzie,
Joanne Makin, Kevin McGee,
Sean Meehan, Julie Player, Neil Robertson,
Elizabeth Rogers, Jodie Southgate,
Leanne Stewart, Dr Nicola Wallbank,
Jack Ward

Graduate Members

Sarah Booley, Sarah Boulstridge,
Lila Buckingham, Heather Campbell,
Dr David Chandler, Thomas Chillcott,
Edward Church, Barnaby Coupe,
Natalie Croft, Nancy Davies,
Charlotte Fifoot, Joseph Grainger,
Carmen Green, Dr Amanda Greer,
Lee Haley, Sarah Hawes, Annie Hedger,
James Hicks, Michael Hockey,
Joshua Humphries, Aaron Isaacs,
Natalie Kay, Amy Kitching,
Catriona Laird, Dr Robert Lawrence,
Alexandra Learmont, Phillippa Lewis,
Naomi Lowden, Ellen Marshall,
Rachel Masters, Cróna Mc Monagle,
Scott McDonald, David Morris,

Geoff Newell, Abigail Parke,
Richard Parmee, Caroline Railston-Brown,
Matthew Rea, Emma Robson,
George Rockell, Katie Searle, Nicola Shale,
Alexandria Shaw, Jordan Todd,
Michelle Tyrrell, James Finbarr Wallace,
Michael Waller, Gavin Young

Upgrades to Graduate Membership

Amy Ashe, Darren Bonner, Charles Geary,
Alexander Hannam, Kora Kunzmann,
Mark Norriss

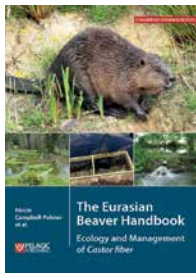
Qualifying Members

Megan Beckett, Adrian Price

Student Members

Dr Peter Barry, Amanda Beck,
Bethan Caine, Hannah Corrigan,
Tara Dawson, Samantha Fewell,
John Flothmann, Wisdom Galley,
Grace Gardner, Deio Gruffydd,
Pavlina Kapickova, Ilona Kater,
Oliver Kemp, Paul Kershaw, Jenna Lane,
Kathryn Lees, Alastair Locke,
Gareth Mason, James Nikitine, Jenna Obie,
Sarah Roberts, Dario Sassarini,
Martin Smith, Charlotte Stewart,
Robbie Still, Andrew Stock,
Dr Melody Stokes, Georgina Stretch,
Melissa Sullivan, Roger Tang,
Philip Tennyson, Nathan Wearn-Hutter,
Michael Wenborn, Phillip Whitley

Recent Publications



The Eurasian Beaver Handbook

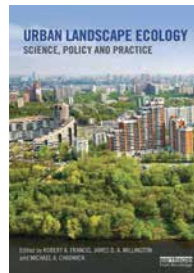
Author: Campbell-Palmer *et al.*

ISBN: 9781784271138

Price: £34.99

Available from: www.pelagicpublishing.com

Beavers are widely recognised as a keystone species which play a pivotal role in riparian ecology. Emerging contemporary studies indicate clearly that the landscapes they create can afford sustainable, cost-effective remedies for water retention, flood alleviation, silt and chemical capture. Beaver activities, especially in highly modified environments, may be challenging to certain land use activities and landowners. Many trialled and tested methods to mitigate against these impacts, including a wide range of non-lethal management techniques, are regularly implemented across Europe and North America. Many of these techniques will be new to people, especially in areas where beavers are newly re-establishing. This handbook serves to discuss both the benefits and challenges in living with this species, and collates the wide range of techniques that can be implemented to mitigate any negative impacts.



Urban Landscape Ecology: Science, policy and practice

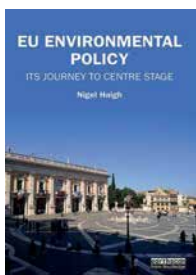
Editors: R.A. Francis, J.D.A. Millington and M.A. Chadwick

ISBN: 9781138888517

Price: £90.00

Available from: www.routledge.com

This book brings together examples of research at the cutting edge of urban landscape ecology across multiple contexts that investigate the state, maintenance and restoration of healthy and functional natural environments across urban and peri-urban landscapes. An explicit focus is on urban landscapes in contrast to other books which have considered urban ecosystems and ecology without specific focus on spatial connections. It integrates research and perspectives from across academia, public and private practitioners of urban conservation, planning and design. It provides a much needed summary of current thinking on how urban landscapes can provide the foundation of sustained economic growth, prospering communities and personal well-being.



EU Environmental Policy: Its journey to centre stage

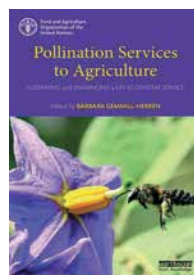
Author: Nigel Haigh

ISBN: 9781138890312

Price: £29.99

Available from: www.routledge.com

At a time when Europeans across the continent are focused on the EU's future direction, this book provides an important contribution to the current debate. Nigel Haigh, a leading authority on the development and implementation of EU environmental policy, traces its evolution from obscurity to centrality. He demonstrates how the EU has not only adapted itself to take on entirely new subject matter, but also has contributed to solving problems which individual Member States could not have dealt with on their own. The book goes on to contextualise the issues throughout its history and offers insight into the future role of the EU in environmental matters.



Pollination Services to Agriculture: Sustaining and enhancing a key ecosystem service

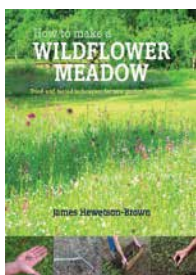
Editor: Barbara Gemmill-Herren

ISBN: 9781138904408

Price: £34.99

Available from: www.routledge.com

This publication reviews the expanding knowledge base on pollination services, providing evidence to document the status, trends and importance of pollinators to sustainable agricultural production. It provides practical and specific measures that land managers can undertake to ensure that agroecosystems are supportive and friendly to pollinators. It draws on the Global Pollination Project, supported by UNEP/GEF and implemented by FAO and seven partner countries (Brazil, Ghana, India, Kenya, Nepal, Pakistan and South Africa), which serve to provide "lessons from the field".



How to make a wildflower meadow

Author: James Hewetson-Brown

ISBN: 9780993389238

Price: £16.50 plus P&P

Available from: www.wildflowerturf.co.uk/products/wildflower-book.aspx

Flowering meadows are appealing to gardeners and valuable for wildlife, but

they can be difficult to establish. This book will help overcome the difficulties with its pragmatic yet eco-friendly advice. The publication includes design tips to help plan a wildlife friendly wildflower space; tried and tested techniques with step by step pictorial guides giving practical guidance for establishment; and over 30 case studies will clarify your own requirements and give an understanding of what you can expect from gardens to roofs to public spaces. And once it is established, understand the simple requirements to maintain and enhance the meadow for long-term success.

Evaluating the regional cumulative impact of wind farms on birds: how can spatially explicit dynamic modelling improve impact assessments and monitoring?

Bastos, R. et al.

**Journal of Applied Ecology 2016,
53: 1330–1340. doi:10.1111/1365-2664.12451**

The Eurasian skylark is very susceptible to the negative effects of wind farms. In northern Portugal, this evidence is particularly severe due to the skylark's preference for mountain breeding habitats where most wind farms are located. Facing the frequent failure of environmental impact assessments (EIA) to evaluate the cumulative impacts of wind farms on wildlife, this study aimed to develop and test a methodology to quantify local and regional consequences on birds, using skylarks as a test species, taking into account future predictable environmental changes. The simulations show an increasing average local impact for the skylark breeding populations directly affected by wind farms. The distribution area of skylark breeding populations was predicted to decrease around 4.5% throughout a period of 15 years, as a result of the scenario of climate and land cover changes in the study area. When combined with a concomitant increase in skylark global mortality (c. 184%) induced by all wind farms in the study region, the above trend contributes to an intensification of the regional cumulative impact from 1.2% to 3.7% of the total estimated breeding individuals.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12451/full>

Conservation practitioners' perspectives on decision triggers for evidence-based management

Addison, P.F.E., Cook, C.N. and de Bie, K.

**Journal of Applied Ecology 2016,
53: 1351–1357. doi:10.1111/1365-2664.12734**

Evidence-based management can help guide effective management of natural systems by integrating the best available evidence to support management decisions and evaluate management effectiveness. Over recent decades, evidence-based management has started to emerge as an approach, in response to the need for increased transparency and to promote positive conservation outcomes. Evidence-based management aims to assist conservation practitioners in making the often difficult decisions about when to intervene in a system to prevent undesirable changes. State-dependent management can support evidence-based management, where appropriate management actions depend on the current state of the system. This approach requires a good understanding of ecosystem processes, to assess when a system is shifting into an undesirable state and when management intervention is required. A proactive application of state-dependent management involves the use of decision triggers, which represent a point or zone in the status of a monitored variable indicating when management intervention is required to address undesirable ecosystem changes.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12734/full>

Bridging the gap between biodiversity data and policy reporting needs: An Essential Biodiversity Variables perspective

Geijzendorffer, I.R. et al.

**Journal of Applied Ecology 2016,
53: 1341–1350. doi:10.1111/1365-2664.12417**

In this paper, the reporting requirements of seven global or European biodiversity policy instruments were reviewed using the list of Essential Biodiversity Variables (EBVs) as an analytical framework. Using EBVs as a tool, theory-driven comparisons could be made between the biodiversity information gaps in reporting and indicator sets. Analytical properties, such as an identification of which data and indicator(s) are relevant per EBV, will need to be addressed before EBVs can actually become operational and facilitate the integration of data flows for monitoring and reporting. In the meantime, a first analysis shows that existing indicators and available data offer considerable potential for bridging the identified information gaps.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12417/full>

The influence of crop tiller density on the breeding performance of a cereal-nesting specialist

Setchfield, R.P. and Peach, W.J.

**Journal of Applied Ecology 2016,
53: 1430–1439. doi:10.1111/1365-2664.12704**

In the pursuit of maximising agricultural yields and profits, crop management under intensive agriculture has reduced the heterogeneity of crop sward structure within fields. The authors studied whole-season breeding performance of a declining cereal crop specialist, the corn bunting, to test the relationships between crop sward structure and both nest site selection and reproductive output within intensively farmed landscapes. The study highlights a novel mechanism by which modern cereal crop management lowers the potential reproductive success of a conservation priority species nesting in intensively managed cereal crops. Unavoidable overlapping of cereal seed along crop headlands, close to crop edges, systematically produces patches of dense sward that attract nesting corn buntings. This creates an ecological trap because nests close to crop edges are subject to high predation rates, and this may be linked to the loss of arable weeds elsewhere within crops. When double-drilled strips are intentionally provided adjacent to these areas, nesting preference switches to these strips, suggesting a potential conservation solution. Provision of mid-field double-drilled strips at least 100m from crop edges, if similarly selected by nesting females, should raise nest survival rates and improve population trends. Such interventions are simple and cheap to implement, unlike most conservation measures in high-value cropping systems.

Correspondence: rosemary.setchfield@rspb.org.uk

Replication, effect sizes and identifying the biological impacts of pesticides on bees under field conditions

Woodcock, B.A. *et al.*

Journal of Applied Ecology 2016, **53**: 1358–1362. doi:10.1111/1365-2664.12676

The authors consider the implications of regulations from the European Food Safety Authority that require the detection of a 7% effect size change in bee colony sizes under field conditions. Based on a power analysis, they argue that the necessary levels of replication (68 replicates) may pose practical constraints to field testing. Regulatory studies benefit from data sources collated over a range of spatial scales, from laboratory to landscapes. Basing effect size thresholds solely on expert judgement, as has been done, may be inappropriate. Rather, definition through experimental or simulation studies that assess the biological consequences of changes in colony size for bee populations is required. This has implications for regulatory bodies outside the European Union.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12676/full>

Risk assessment of pesticide seed treatment for farmland birds using refined field data

Lopez-Antia, A. *et al.*

Journal of Applied Ecology 2016, **53**: 1373–1381. doi:10.1111/1365-2664.12668

Due to reductions in winter food resources, newly sown cereal seeds have become a key component of many bird species' diets, but these seeds are often treated with pesticides that may cause toxic effects. To complete an appropriate risk assessment, data on treated seed toxicity need to be combined with information about the risk of exposure of birds in the field and the factors that modulate such exposure. The authors studied the abundance of pesticide-treated seeds available for birds in the field, the pesticides and their concentrations in treated seeds, and the bird species observed in the field that were feeding on these pesticide-treated seeds. The study found that treated seeds were an important route of pesticide ingestion for red-legged partridge. The field exposure data combined with previous studies about the toxicity to partridges of using pesticide-treated seeds point to an unacceptable risk of this practice to farmland birds. The results suggest that the prophylactic use of pesticide-coated seeds should be avoided, with the approval of this treatment considered on a case-by-case basis and accompanied with specific measures to minimise risks of adverse effects on avian communities.

Correspondence: ana.lopezantia@uclm.es

Embedding Evidence on Conservation Interventions Within a Context of Multilevel Governance

E Kroos, J. *et al.*

Conservation Letters 2016, doi:10.1111/conl.12225

The authors outline a conceptual strategy for implementing conservation interventions in a multi-scale, multi-actor, and multi-level governance world. Using farmland as an example, they argue that conservation interventions should be implemented within a multi-scale framework of guiding ecological principles.

<http://onlinelibrary.wiley.com/doi/10.1111/conl.12225/full>

Investigating the impacts of field-realistic exposure to a neonicotinoid pesticide on bumblebee foraging, homing ability and colony growth

Stanley, D.A. *et al.*

Journal of Applied Ecology 2016, **53**: 1440–1449. doi:10.1111/1365-2664.12689

The ability to forage and return home is essential to the success of bees as both foragers and pollinators. Pesticide exposure may cause behavioural changes that interfere with these processes, with consequences for colony persistence and delivery of pollination services. The authors investigated the impact of chronic exposure (5–43 days) to field-realistic levels of a neonicotinoid insecticide (2.4 ppb thiamethoxam) on foraging ability, homing success and colony size using radio frequency identification (RFID) technology in free-flying bumblebee colonies. The study shows that field-realistic neonicotinoid exposure can have impacts on both foraging ability and homing success of bumblebees, with implications for the success of bumblebee colonies in agricultural landscapes and their ability to deliver crucial pollination services. Pesticide risk assessments should include bee species other than honeybees and assess a range of behaviours to elucidate the impact of sub-lethal effects.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12689/full>

Phylogenetic ecology and the greening of cities

MacIvor, J.S. *et al.*

Journal of Applied Ecology 2016, **53**: 1470–1476. doi:10.1111/1365-2664.12667

Ecologists are increasingly involved in city-making, especially in the development of green infrastructure and other designed plant communities. Plant communities that are more phylogenetically related are more similar in functional traits and adaptations to their environment than distant relatives. Knowledge of how evolutionary relationships among plant species influence ecosystem functions could be applied to green infrastructure to improve benefits such as urban cooling, habitat creation and storm water management. The intended outcomes of manipulations of phylogenetic diversity may vary depending on project goals, particularly when considering the trade-offs between multiple ecosystem functions. Given the potential benefits of considering phylogenetic relationships of plant communities in green infrastructure, the authors recommend that ecologists work with landscape architects and other design professionals to test how ecophylogenetics might aid in achieving desired outcomes for green infrastructure.

Correspondence: scott.macivor@utoronto.ca

What does Life-Cycle Assessment of agricultural products need for more meaningful inclusion of biodiversity?

Teillard, F. *et al.*

Journal of Applied Ecology 2016, **53**: 1422–1429. doi:10.1111/1365-2664.12683

1 Decision-makers increasingly use life-cycle assessment (LCA) as a tool to measure the environmental sustainability of products. LCA is of particular importance in globalised agricultural supply chains, which have environmental effects in multiple and spatially dispersed locations. Incorporation of impacts on biodiversity that arise from agricultural production systems into environmental assessment methods is an emerging area of work in LCA, and current approaches have limitations. Ecological models and understanding can contribute to address the limitations of current LCA methods in agricultural production systems and to make them more ecologically relevant. This will be necessary to ensure that biodiversity is not neglected in decision-making that relies on LCA.

Correspondence: felix.teillard@fao.org

Urban warming favours C_4 plants in temperate European cities

Duffy, G.A. and Chown, S.L.

Journal of Ecology 2016, **104**: 1618–1626. doi:10.1111/1365-2745.12652

Urbanised areas across temperate Europe have significantly higher abundance and richness of plants using the C_4 photosynthetic pathway than non-urban areas. Urban warming, mediated by the contrasting physiological responses of C_3 and C_4 plants to warming, is the main driver of observed patterns of plant assemblage structure. The increased relative abundance of C_4 plants in cities demonstrated in this study may be indicative of more geographically widespread assemblage changes to be expected in temperate environments under continuing global climate change. The authors show that localised urban warming in cities across temperate Europe favours C_4 plant species, which respond positively to increased temperatures. Urban plant assemblages are shaped by environmental warming and exhibit significant increases in C_4 plant relative abundance compared to non-urban assemblages.

Correspondence: grant.duffy@monash.edu

Habitat mapping of coastal wetlands using expert knowledge and Earth observation data

Adamo, M. *et al.*

Journal of Applied Ecology 2016, **53**: 1521–1532. doi:10.1111/1365-2664.12695

In this paper, the authors study the exploitation of ecological rules on vegetation pattern, plant phenology and habitat geometric properties for automatic translation of land cover (LC) maps to habitat maps in coastal wetlands. The methodology is useful for relatively inaccessible sites (e.g. wetlands) as it does not require in-field campaigns (generally costly) but only the elicitation of ecological expert rules. This can support site (e.g. Natura 2000) managers in long-term automatic habitat mapping. Habitat changes can be automatically detected by comparing map pairs, and trends can be quantified. This is particularly useful to satisfy the commitments of the European Habitats Directive (92/43/EEC), which requires Member States to take measures to maintain as, or restore to, favourable conservation status those natural habitat types and species of community interest that are listed in the Annexes to the Directive.

<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12695/full>

Disentangling the four demographic dimensions of species invasiveness

Catford, J.A. *et al.*

Journal of Ecology 2016, **104**: 1745–1758

A definitive list of invasive species traits remains elusive, perhaps due to inconsistent ways of identifying invasive species. Invasive species are typically identified using one or more of four demographic criteria (local abundance, geographic range, environmental range, spread rate), referred to here as the demographic dimensions of invasiveness. Conflating multiple forms of invasiveness, by not distinguishing invasive species that are identified using different demographic criteria, may obscure traits possessed by particular subsets of invasive species. Traits promoting high abundance likely differ from those enabling fast spread and broad ranges. Examining traits linked with the four demographic dimensions of invasiveness will highlight species at risk of becoming dominant, spreading quickly or occupying large ranges.

Correspondence: J.A.Catford@soton.ac.uk

Advertisements

nestbox
COMPANY

New additions to our range of bat boxes



Eco Bat Box - Long lasting box made from 100% recycled plastic outer shell with wooden roosting chamber. Crevice or cavity versions.



Large Colony Bat Box - The largest box we make, specially designed for large maternity colonies of common and soprano pipistrelles.



Pole Mounted Bat Boxes - Available as single or double boxes mounted on 4m high aluminium pole (other lengths available).



Integrated Eco Bat Box - Designed for building into brickwork, stonework or cladding. Recycled plastic outer shell with wooden roosting chamber (choice of cavity or crevice).

For more information:

www.nestbox.co.uk
info@nestbox.co.uk
+44 (0) 1675 442299

Forthcoming Events 2016

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

Conferences

Date	Title	Location
18 January 2017	Scottish Section Conference 2017 – Creating Sustainable Cities using an Ecosystem Services Approach	Perth
8-9 February 2017	Welsh Section Conference 2017 – Building Bridges between Farming and Nature: Grazing is Amazing	Llandudno
22 March 2017	Spring Conference 2017 – Mainstreaming Biodiversity into Future Cities	London
4 July 2017 TBC	Summer Conference 2017 – Ecological Assessment in the Marine Environment	England South Coast
21-22 November 2017 TBC	Autumn Conference 2017 – Habitat Assessment: Mitigation, Monitoring and Effectiveness	Manchester

Training Courses

24 January 2017	Introduction to Ecological Impact Assessment (EcIA)	London
25 January 2017	Ecological Report Writing	London
31 January 2017	Habitats Regulations Assessment (HRA) of Projects (England/Wales and their territorial waters)	Leeds
1 February 2017	Introduction to Protected Species Law and Policy	London
7 February 2017	Effective Communication Skills for Women	Birmingham
7 February 2017	Ecological Clerk of Works	Birmingham
7-8 February 2017	Developing Practical Skills in Ecological Impact Assessment (EcIA)	Cardiff
8 February 2017	British Standard BS42020 Biodiversity – Code of Practice for Planning and Development	Birmingham
14-15 February 2017	QGIS for Ecologists and Conservation Practitioners	Stanmore, Greater London
16 February 2017	European Protected Species for Consultants	Manchester
20 February 2017	Calculating and Using Biodiversity Units	London
23 February 2017	Peregrine Falcon: Ecology, Survey and Mitigation	Birmingham
23 February 2017	Survey and Monitoring of Road and Rail and Associated Mitigation Schemes for Bats: Pre, During and Post-construction	Leeds
28 February - 1 March 2017	Developing Practical Skills in Ecological Impact Assessment (EcIA)	Edinburgh
1 March 2017	Report Writing for Ecological Impact Assessment	London
1 March 2017	Trees and Bat Roosts	Dorking
2-3 March 2017	Pine Marten and Wildcat Ecology and Surveys	Perthshire
6 March 2017	Ecological Clerk of Works	Manchester
7 March 2017	Barn Owl: Ecology, Survey and Mitigation	Tamworth
9 March 2017	Habitats Regulations Assessment (HRA) of Plans (England/Wales and their territorial waters)	London
14-15 March 2017	Water Vole Live Trapping, Care and Restoration	Lifton, Devon
21 March 2017	British Standard BS42020 Biodiversity - Code of Practice for Planning and Development	Cardiff
22 March 2017	Ecological Clerk of Works	London
22 March 2017	Using R for Basic Statistics in Ecology and Environmental Management	Dundee
28 March 2017	Otter Ecology and Surveys	Cirencester



Qualifying to undertake tree-climbed bat surveys has taken my career to new heights

Barry, a licensed bat ecologist at WYG, is kept busy in the winter carrying out tree-climbed bat surveys. Whilst working at WYG, he has completed a City and Guilds CS38 Tree climbing and aerial rescue certification, enabling him to carry out rope and harness surveys. Barry tells us more about his work.

"Contrary to popular myth, bats roost not only in belfries and other buildings, but also in trees. Three quarters of British bat species roost in trees, including some of our most common and widespread species such as pipistrelles, as well as rarer and more elusive bats such as Bechstein's and barbastelles. Some bat species are rarely found anywhere else, hardly ever roosting in buildings or built structures.

Climbed inspections, like the ones I carry out, can be enough to inform decisions on tree felling or works but, where more information is needed, they can help to focus nocturnal survey works. They also provide reliable results and offer options for planning, development and mitigation. They are a great way to fully inspect the features of a tree for bat activity, which are

often not visible from ground level. I can get up close to the habitat of local bat populations which helps me understand which types of trees and cavities they are likely to use."

A video about Barry's bat climbing work and further detail can be found on our website www.wyg.com

WYG has a large team of ecologists across the UK, including experts like Barry who now provides tree climbing training and mentoring to ecologists working towards their tree climbing qualification and bat licences. Working as part of a national team also means that Barry has access to advice and support from a wide range of ecologists.



If you are looking to progress your career as part of an award-winning environment team committed to supporting your professional development, we would love to hear from you.

Our current roles are listed on www.wygcareers.com but we also welcome speculative applications.



Learn, explore, become something more

www.wygcareers.com



Senior Ecologist Brighton



Salary £25,000 - £37,000 per annum, plus bonus, overtime & other benefits

We are looking for an experienced ecological consultant ready for a fresh challenge, who would relish an opportunity to play a significant role in co-ordinating CSA's ecological services, managing a diverse range of projects and helping to grow our dynamic Brighton team.

CSA is a multi-disciplinary consultancy with over 40 staff spread across three offices. With 17 permanent Ecologists, we have a wide range of technical expertise but we are also small enough to be a close and friendly team. There are lots of opportunities for the transfer of skills and sharing of experience, together with a generous approach to external training.

A Senior Ecologist at CSA must have the following:

- At least 4 years relevant consultancy experience within a small/medium sized practice
- Excellent project management and communication skills
- Recognised areas of specialism combined with all-round field skills
- Expertise with protected species work, including personal survey licences
- Full or Associate membership of CIEEM

In Brighton, we offer a fantastic working environment close to the town centre and railway stations. It's a vibrant place and we welcome applications from passionate, highly motivated ecologists with an aptitude for consultancy work and a desire to help build and develop the Sussex ecology team.

To apply, please send your CV and personal statement to brighton@csaenvironmental.co.uk, or to discuss the position informally, please call Clare Caudwell on 01273 573871.



**Join Eurosites to create a Europe
where nature is cared for, protected,
restored and valued by all.**



info@eurosites.org | +31 (+)13 5944 400 | www.eurosites.org

"Being a member of the Eurosites Board for many years now, I can safely say that Eurosites's added value lies in connecting Europe's nature and protected areas site managers, through networking events, thematic working groups and innovative information sharing approaches. I am convinced that only by seeking such connections and working in partnership, will practitioners be in the best position to safeguard our precious natural systems."

Dr David Parker
Eurosites Board Secretary
CIEEM Fellow

Progress your career with our MSc Environmental Conservation



Day-release study over
two years while you work



- Learn from professionally qualified practitioners
- Gain a greater understanding of the breadth of issues involved in conservation
- Network with people within the industry
- 'Fast track' the initial CIEEM membership grade after graduating

gre.ac.uk/pg/envcons

Tel: 020 8331 9800
E-mail: science-queries@gre.ac.uk
Website: gre.ac.uk/science

Derek Gow Consultancy Ltd.

Water Vole Mitigation Specialists.

We have over 24 years experience of successfully working with water voles in upland and lowland locations throughout Britain. We have advised & co-authored the species handbooks and have project partnered many large scale water vole reintroduction projects. As a specialist consultancy we can offer expert, cost effective options for:

- Water vole surveys, monitoring and population assessment.
- Impact assessments and mitigation plans.
- Licence applications and liaison with the statutory authorities.
- Translocation options from live trapping to supervised displacement.
- Overwintering, breeding, health screening and reintroduction facilities.
- Receptor site design, planting and fence construction.
- Regional or local water vole population conservation strategies and landscape scale restorations.
- Targeted mink control.
- Bespoke training courses led by a water vole expert.
- A partnership based approach.

01409 211578 / 07764 690867

DerekJGow@aol.com

www.watervoles.com



JACOBS ECOLOGY - DISCIPLINE EXPANSION

Opportunities for Flexible Working with the Possibility of Reduced Hours Contracts

Our well respected team comprises over 150 terrestrial and aquatic ecologists around the UK. With a huge breadth of expertise, experience and knowledge, individuals continually develop their skills through working on the most diverse infrastructure projects in the country. Careers are further enhanced by a bespoke CPD training programme and sector-leading approach to work patterns and support for staff well-being.

Birmingham focus

To meet new challenges and expand into new markets, we are looking to make key hires in our Birmingham office, suiting experienced ecologists looking to develop a new team and work with new clients. In return, we offer an attractive remuneration package and opportunities for flexible working hours and the possibility of reduced hours contracts.

We are also recruiting nationally at all career stages

For more information, and to apply, visit:

www.jacobs.com/careers

JACOBS®

www.jacobs.com

JACOBS is an Equal Opportunities Employer and is committed to the safety and wellbeing of all.



Phase ONE Habitat Survey Toolkit is now available for iPhone®, iPad® and iPad Pro™

Save time in the office and focus on fieldwork using our innovative and intuitive software.

Phase ONE helps you to produce effective, JNCC colour coded maps with comprehensive notes and accurate GPS records while still in the field, allowing you to export directly to reports or as GIS supported files with minimal need for post-survey reprocessing or digitisation.

- Robust offline mapping with updated hi-res satellite imagery
- Quick creation and editing of polygons, lines and target notes
- Full habitat descriptions and colour codes
- Effortlessly link notes and photographs to features
- Species information, photographs and distributions
- More than 900 target protected and invasive plant and animal species included
- Automatic area and length calculations
- Simple integration with GIS programmes

**OXFORD
BROOKES
UNIVERSITY**

Download from the Apple App Store® now
For more information or to
arrange a free trial or demonstration
visit <http://bms.brookes.ac.uk/ceec/hp1toolkit>
email hp1toolkitsupport@brookes.ac.uk
or call 01865 482891

