

# inpractice

Issue 97 | September 2017



## One Year on from the EU Referendum

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CIEEM, Brexit and the  
Natural Environment:  
Achieving a Better Future

Brexit and Management  
of Trans-Boundary Pollution

Brexit: A Devolved View

# Welcome

## The Call to Action

I spent a lot of my early career as a consultant ecologist trying to explain that I was not an “environmental activist”. The Public Inquiry for my first project, the M6 Toll, was beset by brightly-dressed environmental protestors. With banners. Singing. On one memorable occasion, I believe there was a didgeridoo playing all day outside the Inquiry room. In contrast, in a sober suit, I was giving evidence to a team of three inspectors about the behavioural ecology of five species of bats. And that was where I have always drawn the distinction. I am a scientist, rather than an “environmentalist”. I apply my knowledge of ecology to real-world situations and develop pragmatic solutions to complex, often multi-layered problems. To be taken seriously by my clients, I had to show my separation from the world of the activists. However passionate I am about protection of the natural world, and no matter how concerned I may be over the threats to our planet, my personal views on the environment were a matter quite separate to my professional life.

And then Britain voted to leave the EU. And over the last year the enormity of the potential impacts this could have on the environment and our profession have become apparent. There are certainly significant challenges in transposing EU regulation into domestic law to achieve even the same level of protection as we have at present. However there are also opportunities to enhance the protection of the environment, to deliver nature conservation at a landscape scale in line with the ‘Lawton principles’, and to reform agricultural policy so that practices that harm the environment are penalised. You can read all about CIEEM’s position on these issues in this edition of *In Practice*.

As a Chartered body, CIEEM is tasked with providing advice to government – should they request it. And whilst the Government has good intentions, stating that it wishes to leave the environment in a better state than it found it, actual actions seem to be thin on the ground. We can understand that there seem to be more urgent priorities. Human brains are wired to deal with immediate threats, not long-term, uncertain issues. Our brains, and perhaps our system of government, are hard-wired for instant gratification and to put off future problems for our future selves to deal with. That’s why I get home from work and have a glass of wine rather than going to the gym. And why climate change isn’t yet an election-winning issue. But the environment is too big an issue to leave low on our collective to-do list. We all need clean air to breathe, water to drink, safe, sustainable supplies of food. As professionals, we need to demonstrate how immediately those essential goods are threatened and provide leadership on the solutions.

So perhaps now is not the time to wait to be asked our opinion. In my view, as the largest membership body for professional ecologists and environmental managers, we have a duty to raise awareness, to engage as widely as possible, to hold government to account on matters relating to the natural environment, and to engage positively on the way forward. If that’s activism, then wait there while I find my didgeridoo.

**Stephanie Wray** CEcol CEnv FCIEEM  
President

# Information

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## Editor

Dr Gillian Kerby (gillkerby@cieem.net)

## Internal contributions coordinator

Mr Jason Reeves (jasonreeves@cieem.net)

## Editorial Board

Mr Jonathan Barnes, Dr Kate Bayley,  
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## CIEEM Office

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

**T: 01962 868626**

**E: [enquiries@cieem.net](mailto:enquiries@cieem.net)**

**W: [www.cieem.net](http://www.cieem.net)**

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Front cover image:  
Exaggerated relief map of Europe



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### Mitigation Monitoring and Effectiveness

CIEEM Autumn Conference 2017 – Booking Open!

21-22 November 2017, Manchester

This two-day conference will focus on recent research into the effectiveness of habitat and species mitigation, innovative approaches to monitoring and data capture/use, and the role of the profession in contributing to the evidence base for the effectiveness of mitigation techniques.

To view the full programme and book your delegate place please visit [www.cieem.net/autumn-conference-2017](http://www.cieem.net/autumn-conference-2017).

If you are interested in sponsorship or exhibition opportunities please contact EmmaDowney@cieem.net.

### Guidance on Delivering Net Gain

Following the publication of the Principles on Achieving Net Gain for Biodiversity in December 2016, CIEEM has continued to work with CIRIA and IEMA on drafting practical guidance on this important topic. An author team has been appointed and are busy scoping and researching the guidance. A series of online and focus group consultations have taken place to address some key areas where further clarity or decision-making is needed. It is hoped that the guidance will be published early in 2018.

### BREEAM Strategic Ecology Framework

Following on from the article in the March 2017 issue of *In Practice*, entitled *Projects Set to Benefit Through Pioneering and Collaborative Strategic Ecology Framework (SEF)*, implementation of the SEF into BREEAM and other schemes in its family (Home Quality Mark) is progressing well. CIEEM members are encouraged to comment on the updated, and in some cases newly developed, ecology assessment criteria covering master planning, infrastructure and buildings. Take advantage of this opportunity to input by going to [www.breeam.com/sef](http://www.breeam.com/sef). The public consultation will begin in the second week of September 2017.



### CIEEM Patron Tony Juniper awarded CBE

CIEEM Patron Tony Juniper has been awarded a CBE for his services to conservation in the latest Queen's birthday honours list.

<https://www.cieem.net/news/414/cieem-patron-tony-juniper-awarded-cbe>

### Consultation Responses in 2017

CIEEM has responded to the following consultations and inquiries in 2017:

- Places, People and Planning: A consultation of the future of the Scottish Planning System (Scottish Government)
- Environmental Impact Assessment – Joint Technical Consultation (planning changes to regulations on forestry, agriculture, water resources, land drainage and marine works) (Defra, Welsh Government, Scottish Government, DAERA)
- Environmental Impact Assessment: Technical consultation (regulations on planning and major infrastructure) (Department for Communities and Local Government)
- Review of Draft 3<sup>rd</sup> National Biodiversity Action Plan (National Parks and Wildlife Service)
- Closing the STEM Skills Gap (Science and Technology Select Committee)

To read the full responses please visit: [www.cieem.net/past-consultation-responses](http://www.cieem.net/past-consultation-responses)

### Other CIEEM activities in this edition

Various other CIEEM activities are covered in this edition of *In Practice*, including our Brexit activities and engagement (pg 9), other CIEEM policy work (pg 51), the CIEEM Awards (pg 52), how we spend members' money (pg 56), CIEEM membership changes (pg 59), celebrating CIEEM volunteers (pg 64), and information for Student members (pg 66).

### *In Practice* themes 2017

Edition	Theme	Submission deadline
December 2017	Nature Conservation on a Shoestring	n/a
March 2018	Genetic Techniques and Technologies	27 November 2017
June 2018	100 <sup>th</sup> Edition (theme TBC)	26 February 2018
September 2018	Environment and Pollution	28 May 2018
December 2018	Data and Information Management	27 August 2018

If you would like to contribute to *In Practice* please contact the Editor at [GillKerby@cieem.net](mailto:GillKerby@cieem.net). Contributions are welcomed from both members and non-members.

### Environment Secretary's Green Brexit speech

Michael Gove has given his first keynote speech as Environment Secretary. The speech was ambitious and there was much to applaud.

<https://www.cieem.net/news/424/michael-goveeys-green-brexit-speech>

### Natural England seeking bat experts

Natural England is seeking up to nine leading figures in bat conservation to form a Bat Expert Panel to:

- provide expert opinion on Natural England's approach to bat conservation and regulation
- shape and grow support for an ambitious programme of reforms over the coming years
- secure better conservation outcomes for bats
- aim to secure improved outcomes for developers, householders, ecologists and other stakeholders

The closing date for applications is 29 September 2017.

More information: <https://www.gov.uk/government/organisations/natural-england/about/recruitment>

### Greener UK's Brexit Risk Tracker

Greener UK has created a Brexit Risk Tracker, a tool for monitoring the UK government's choices around safeguarding environmental protections throughout the Brexit process.

<http://greeneruk.org/RiskTracker.php>

### UKELA publishes report on Brexit and environmental law

The report – *Brexit and Environmental Law: Enforcement and Political Accountability Issues* – highlights the danger of undermining environmental law after Brexit if enforcement and accountability gaps are not properly addressed.

<https://www.ukela.org/press-releases?pressid=108>

### Welsh Government launches Brexit website

The website contains documents relating to Wales and Brexit, and will host a series of further documents to extend the debate in Wales and the United Kingdom.

<https://beta.gov.wales/brexit>

### Report on Wales' future landscapes published

A review of Wales' National Parks and Areas of Outstanding Natural Beauty (AONBs) has been published by the Future Landscapes Working Group. The report says designated landscapes should be the leaders of the sustainable management of natural resources in their areas and emphasises the importance of joint-working to achieve this.

<http://gov.wales/newsroom/environmentandcountryside/2017/170509-report-on-wales-future-landscapes-published/?lang=en>

### New POSTnote – Environmentally Sustainable Agriculture

This POSTnote summarises associated land management options, agricultural policies and the constraints imposed by a new trading environment.

<http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0557>

### Post-Brexit cross-border cooperation crucial to protect the environment and tackle climate change

The need for cross-border cooperation will be crucial to protect the environment across the island of Ireland as Brexit looms closer, the Joint Committee on the Implementation of the Good Friday Agreement has been told.

<http://environmentalpillar.ie/press-release-post-brexit-cross-border-cooperation-crucial-to-protect-the-environment-and-tackle-climate-change/>

### Guidance on the preparation of Environmental Impact Statements and Natura Impact Statements for Offshore Renewable Energy projects

The document provides guidance on the preparation of Environment Impact Statements (EIS) and Natura Impact Statements (NIS) for offshore renewable energy projects. It builds on a workshop held with key stakeholders in 2015 and a public consultation which closed in December 2016.

<http://www.dccae.gov.ie/en-ie/news-and-media/press-releases/Pages/Statements-for-Offshore-Renewable-Energy-projects.aspx>

### Wales, Wildlife and Well-being

North Wales Wildlife Trust and Bangor University have published a new guide to nature-based activities and well-being. The report summarises the impact that the project could expect to have on the lives of young people and their communities.

<http://www.northwaleswildlifetrust.org.uk/what-we-do/people-and-wildlife-work/wildlife-and-well-being>

### A European plan for nature protection

Following the results of the fitness check of the EU Birds and Habitats Directives last December, the European Commission has published the *EU Action Plan for nature, people and the economy*. The Plan includes 15 actions that aim to improve the Nature Directives implementation in order to reach the EU's biodiversity targets for 2020.

[http://ec.europa.eu/environment/nature/legislation/fitness\\_check/action\\_plan/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/fitness_check/action_plan/index_en.htm)

### Scottish Land Stewardship Policy

The Scottish Wildlife Trust has published a Land Stewardship Policy, which shows how land management should be supported in Scotland after the UK leaves the Common Agricultural Policy in a way that safeguards wildlife and provides a high-quality natural environment, while also supporting the rural economy.

<https://scottishwildlifetrust.org.uk/our-work/our-advocacy/policies-and-positions/land-stewardship-policy/>



# Change Is Inevitable: How Can We Make a Difference?

John Box CEng CEnv FCIEEM

Keywords: Brexit, climate change, digital ecology, ecological networks, evidence-based conservation, professionalism

We will need all our professionalism and integrity to deal with the changes to come from Brexit and climate change. The Lawton report *Making Space for Nature*, the digital revolution in ecology and our values and ways of working are all vital for the future. Five years from now, will each of us look back and say 'I helped to do that'?

Our future will include two crucial changes that will affect us all as environmental managers and ecologists: the Brexit process in the UK and the effects of climate change. Firstly, the evidence very strongly suggests that climate change is happening now. We can see the results in the changing weather patterns and changes in the distribution of species and their phenologies here in Britain and Ireland, and in the reports we read about climate change from around the world. Secondly, the UK will remain a full member of the EU with all the obligations of EU membership until Brexit comes into effect. The progress of the European Union (Withdrawal) Bill and proposed associated legislation through the UK Parliament is expected to run in parallel to the Brexit negotiation process. We are going to have to fight to keep the crucial environmental legislation and policies that we already have. There will be opportunities for improvements, but there will certainly also be attempts to dilute, to downgrade, to repeal legislation. We will need to get involved.

In my view, there are three issues that are fundamental to our involvement in these matters as ecologists or environmental managers:



Tablet being used for ecological surveys. Photo credit Atkins.

- the conservation context, notably the approach set out in *Making Space for Nature* (Lawton *et al.* 2010), summarized as 'more, bigger, better and joined up'
- the future of ecology in a digital world, and
- our values and ways of working as ecologists and environmental managers.

***Making Space for Nature*** is beautifully written in plain English with a mantra

of 'More, Bigger, Better, Joined Up'. The report is written for England but the principles can be applied to the conservation of wildlife and biodiversity in different contexts and geographies. The report argues that we need a step-change in our approach to wildlife conservation. We need to move from hanging on to what we have now, to achieving large-scale habitat restoration and recreation,

under-pinned by the re-establishment of ecological processes and ecosystem services, for the benefit of both people and wildlife (for example, see Figures 1 and 2). What is needed are coherent and resilient ecological networks where habitats are joined up by green and blue corridors extending across landscapes to allow species to colonise new areas and to allow nature to thrive.

I believe this report is the definitive guide for our work as professional ecologists and environmental managers. Its delivery requires us to focus on land use, habitat management and the importance of designated sites. Among other factors, successful delivery requires an in-depth understanding of the critical importance of soil chemistry and hydrology in creating, restoring and enhancing habitats for the future health and wellbeing of everyone. Progress towards the goals set out in the report – ‘More, Bigger, Better, Joined Up’ – needs to accelerate as the digital revolution in environmental recording takes hold.

**The digital revolution in ecology** will largely focus on identification and data-gathering. The technology supporting ecology is changing very fast and costs related to data acquisition and management are dropping rapidly as data storage becomes cheaper. Think of eDNA for newts and fish, add the emerging DNA methods for identifying invertebrates, extend this to the drive for DNA barcoding for identifying plants, animals and fungi. Data collection now routinely involves tablets and apps (Article header image). Extend this to drones, satellites, 360 degree cameras. The digital revolution in data collection, data sharing, processing and interpretation is fundamental for the future of ecology and land management. As environmental professionals, we need to be part of this revolution: familiar and up-to-speed with the new techniques, using the technology and applying it for environmental gain both here and internationally.

#### **Our values and ways of working**

must always be professional and based on scientific evidence as advocated by the Centre for Evidence-based Conservation, Collaboration for Environmental Evidence and Conservation Evidence (see Sources below). The views of professionals and scientists are not always valued by others



Figure 1. New channels and areas of water constructed to create the wetland area known as Rymes Reedbed that is part of the Great Fen, a 50-year project to transform the landscape of the fens between Peterborough and Huntingdon. Photo credit Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire.



Figure 2. A new channel in the Great Fen with the Trundle Mere Lookout designed to give a panoramic view over the newly created Rymes Reedbed. Photo credit Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire.

and there is always a risk that policy-makers and politicians may construct policies first and then seek the evidence later. Proactive, competent and forward-looking ecologists and environmental managers are needed to:

- decide what data to collect, when and how
- evaluate the results of data collection
- implement effective and economic mitigation and compensation measures

and biodiversity enhancements that are justified by empirical evidence, and

- achieve ‘more, bigger, better and joined up’ sites, habitats, ecosystems and landscapes.

On our side, we have CIEEM: our professional institute with its committed and professional staff is a force to be reckoned with. CIEEM encourages and supports ecologists and environmental



## Viewpoint: Change Is Inevitable: How Can We Make a Difference? (contd)

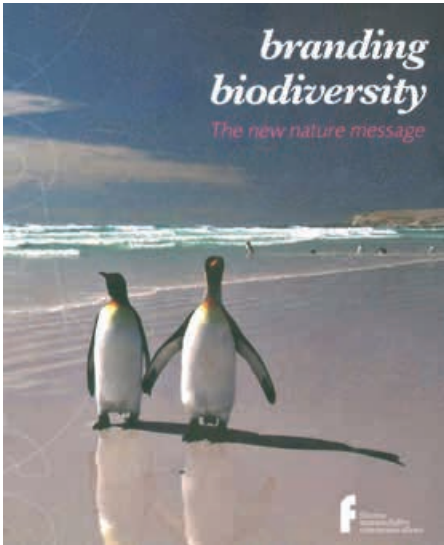


Figure 3. *Branding Biodiversity*. Photo credit Futerra Sustainability Communications.

managers working to high professional standards and actively assists those who seek to qualify as Chartered Ecologists and Chartered Environmentalists. CIEEM has the Competency Framework, an expanding programme of training and an accreditation process for ecology and environmental degree courses. We also have *In Practice* which provides us with a superb resource and means of telling others what we do best. Our members are involved in flagship landscape restoration schemes such as the Great Fen (Figures 1 and 2) and are at the forefront of digital data collection in the field (article header image). We run successful conferences to keep members abreast of the latest developments and our 2017 Awards event celebrated and publicised real achievements in environmental management and ecology.

As a profession, we need to create clear narratives and promote topical stories to explain to government, to the public and to other professionals why biodiversity is crucial to our health and wellbeing. We must raise awareness of the importance of biodiversity both in its own right and as a means of enhancing the quality of life for everyone. ***Branding Biodiversity*** (Futerra Sustainability Communications 2015) is a superb guide for those campaigning for biodiversity and seeking to deliver the right messages to policy-makers and to the public (Figure 3). Using innovative and engaging communication tools, its core theme is to add Action to key messages with less said about losses and extinctions, more said about our love of nature, and to target economic needs for policy-makers and business.

Never forget that it is the general public who generate the pressure on our legislators for effective legal frameworks for biodiversity and who are steadily increasing the membership of the voluntary bodies in both the UK and the island of Ireland. The RSPB now has one million members and the combined membership of the Wildlife Trusts in the UK is around 800,000. A good story and the right words can bring alive the environmental and ecological impacts of technical issues like Brexit and climate change to prompt the necessary action.

What can each of us do to make a difference (Box 1)? In a world of alternative facts, 'fake news' and social media we must always be guided by professionalism, integrity and reputation; sharing ideas and data freely; getting it right and being evidence-based. Of these, integrity is absolutely fundamental and needs to underpin everything that we do.

### Acknowledgements

I am very grateful to to Atkins for the article header image; Lauren Stonebridge and the Great Fen Project for Figures 1 and 2; and to Futerra Sustainability Communications for Figure 3.

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<http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>
- The Great Fen <http://www.greatfen.org.uk/> and <http://www.greatfen.org.uk/restoration/progress>

### Box 1: How can we make a difference?

- Act on *Making Space for Nature* and *Branding Biodiversity*
- Apply the digital revolution to ecology and environmental management
- Provide your local councillors and your local MP with evidence-based information
- Tell the story of your successes but don't hide the failures as they also provide evidence
- Use all forms of social media to promote our profession and our achievements
- Get involved with your local CIEEM Geographic Section
- Encourage your colleagues to join CIEEM
- Become Chartered

### About the Author



John Box has worked in both the public and private sectors and made many contributions to voluntary organisations, including being a past President of CIEEM.

**Contact John at:**  
[john.box@knowlebox.co.uk](mailto:john.box@knowlebox.co.uk)



# CIEEM, Brexit and the Natural Environment: Achieving a Better Future

Jason Reeves MCIEEM

Policy and Communications Manager, CIEEM



As I write this it is just over one year since the UK voted to leave the European Union. It feels like an awful lot longer.

Most of the UK's wildlife and environmental legislation is based on EU legislation and there is still little certainty as to how these will be replaced. Changes to the legislation under which most of the UK ecology and

nature conservation profession works will have potentially profound implications for CIEEM members and the sector, including those working outside the UK in Ireland and elsewhere.

CIEEM continues to work to have as much positive influence as possible on the changes to legislation in relation to the natural environment. Some of this will of course depend on the nature of the UK's

new relationship (on, for example, trade and the 'four freedoms') with the EU.

## The Referendum

Prior to the May 2015 general election, the Conservative Party manifesto committed to a referendum on the UK's membership of the EU by the end of 2017. Having won a majority at the election, the Conservative Party delivered this commitment by holding the referendum on 23 June 2016.

## Feature Article: CIEEM, Brexit and the Natural Environment: Achieving a Better Future (contd)

Prior to the referendum, CIEEM had already set up an 'EU Referendum Steering Group' to consider the potential implications of the UK leaving the EU. We held an initial workshop and published a position paper on the Referendum. In our position statement, CIEEM highlighted the benefits – such as protection of wildlife habitats and species, rigorous standards for pollution control, and the cleanliness of bathing beaches – that have been delivered through EU legislation. We pointed out the positive impact of the Natura 2000 network of protected areas and how this has contributed to creating a coherent and interconnected mechanism across the continent for the benefit of many species and habitats. We also highlighted the enormous legal issues that would be created by a vote to leave. Following a survey of our members, CIEEM promoted its position that, on the basis of protecting the environment, voting to remain a member of the EU was the preferred option.

The referendum result was a narrow majority in favour of leaving the EU. Following our collective surprise, CIEEM issued two statements. These were to reassure members that we understood the potential implications and were actively working to understand the issues potentially affecting the sector and the natural environment. We also felt it necessary to make a statement publicly to say that the UK was still a member of the EU, that nothing had changed, and that nothing would change until we actually left the EU. This still applies today. In July and August 2016, CIEEM wrote to all UK Ministers, MPs, MSPs, AMs and MLAs in relation to Brexit and the natural environment, setting out our position and how CIEEM could be of assistance.

In October 2016, the new Prime Minister Theresa May announced the Great Repeal Bill, which was intended to end EU supremacy over UK legislation and repeal the European Communities Act 1972. We have since had the actual Repeal Bill (now not so Great); more on that later. CIEEM's position on the Great Repeal Bill announcement was that this enabling legislation is needed, however the crucial details of how it will be enacted and its effect on different types of laws had not been disclosed. What was clear was that

Brexit will place a huge burden on both parliament and government departments.

On 17 January 2017, Theresa May set out her 'Plan for Britain', including the 12 priorities that the UK government will use to negotiate Brexit. There was no mention of the natural environment in her speech, although she did hint that the UK would be leaving the 'single market' which would have implications for the natural environment.

The same month we had the Supreme Court judgement and the subsequent approval of Parliament to trigger Article 50 on 1 February 2017. The next day the UK Government published its Brexit White Paper, which was intended to provide Parliament and the country with a clear vision of what they were seeking to achieve in negotiating the UK's exit from, and new partnership with, the European Union. It provided very little clarity. Article 50 was triggered on 29 March 2017, and on this timeframe (and unless there is mutual agreement to extend it) the UK will leave the EU by the end of March 2019.

On 16 March 2017, the UK Government launched the Plan for Britain (and Northern Ireland) website, which outlines how the Government intends to "*build a stronger, fairer Britain as we leave the European Union*". At the time of its launch there was no mention of the environment; there still isn't.

### CIEEM Task Groups

CIEEM initially set up seven Working Groups to look at the following specific topics in relation to Brexit: Land Management and Agricultural Policy; Protected Species; Protected Areas (terrestrial); Marine Protected Areas; Fisheries Policy; Non-Native Invasive Species and Biosecurity; and Water Resource Management and Air Quality. However, following further work and feedback we reformed these seven Working Groups into five Task Groups:

**Land Management:** CIEEM proposes that the agricultural subsidy funds for basic payments and agri-environment schemes are combined into one environmental protection account to address the current perverse incentives (i.e. public funds for public goods). We envisage long-term agreements with land owners to deliver

natural capital outcomes, and see the relationship changing from one of subsidy and support to one of a customer and service provider arrangement.

**Marine Environment:** Like terrestrial land management, the marine environment is complex and we need to bring together fisheries, water quality, pollution and wildlife policies into an overarching strategy and plan. Fisheries and the economics of the marine environment and marine harvesting are a sub-set only of the marine environment and not a separate issue.

**Sites Protection:** We may potentially be losing the EU designations nomenclature (e.g. Special Areas of Conservation, Special Protection Areas), which we see as an opportunity to create a new hierarchy of sites that are important for nature conservation reasons, and preferably something that people find easier to understand.

**Species Protection:** Changes in species protections and licensing are already changing, particularly in England, and we again have the opportunity to design a new system that protects biodiversity generally, whilst also highlighting where we need to put in specific measures for individual species that require greater protection.

**Water:** We need to maintain standards and take a holistic approach across all of the different elements of the freshwater environment that cannot be taken in isolation.

We are now bringing together these ideas into a coherent suite of briefing papers.

With the UK leaving the EU there are not only risks and challenges, but also opportunities for the UK to improve its current environmental policy framework. Consequently we have also created an overarching position paper, which addresses the broad issues that are not specific to any one of the above topics:

**Maintain and Enhance Protection:** The UK must commit, at the very least, to maintaining – however we advocate enhancing – protection and standards for the natural environment following the UK's departure from the EU, in line with our international commitments.

**Devolution:** Once the UK leaves the EU, relevant powers – for example, agriculture and environment – must be repatriated to



the appropriate level within the UK country governance structure. CIEEM recommends that this is within a consistent framework to facilitate cross-border collaboration and trade, and to allow reporting on the UK's international obligations.

**Science and Evidence:** The UK must ensure that environmental legislation and policy is always informed by the best scientific evidence available. The UK is a world-leader in environmental research and practice, and it is vital that the government draws on this expertise. In addition, it is vital that the UK maintains and enhances our world-leading reputation for scientific research and practice. We must not compromise our ability to access the best practitioners, academics, students and others from an international talent pool.

The UK must also ensure the best possible access to European funding programmes and collaborative structures.

**Collaboration:** Almost all environmental issues – from climate change to invasive species – are of international concern and impact, and therefore require a collaborative response across the UK countries, with our only land border with Ireland, and with Europe and the rest of the world.

**Accountability:** Given the large volume of EU environmental legislation and the mostly positive influence that this has had on the UK's environment, we welcome the aim to transfer the body of European legislation into UK law, however it is important that this is undertaken in a robust and transparent manner. It is likely that most statutory instruments – an estimated 800-1000 are likely to be needed – will be made without parliamentary debate. The UK government must ensure that there is sufficient parliamentary time and resource to review the list of instruments and relevant items and provide opportunities to debate those where parliament feels there are potential issues. In addition, all future changes to UK environmental legislation must be subject to appropriate parliamentary scrutiny, to guard against the long-term attrition of legislation through the use of statutory instruments.

**Enforcement and Scrutiny:** Following the UK's exit from the EU, effective mechanisms must be in place for enforcing standards once the UK is outside the jurisdiction of the European Court of Justice and the European

Commission. The UK government must ensure that there is a mechanism in place to ensure that the UK's implementation of environmental policy and legislation is enforced by an independent body and that the UK is not left with a scenario whereby the government is effectively only accountable to itself.

**Principles:** The UK must ensure that the 'precautionary principle', the 'preventive principle' and the 'polluter pays principle', which are the fundamental foundations of environmental protection and frame how environmental policy should be developed (detailed in Article 191 of the Lisbon Treaty), are transposed into UK law.

**Government Capacity and Resources:** The UK must ensure that all levels of local and national government, as well as statutory agencies, have the resources and capacity – such as expertise, staff and funding – required to effectively address the substantial administrative challenges of Brexit.

## An (Unexpected) Election

Theresa May unexpectedly called a snap general election for June 2017. In the run-up to the election CIEEM wrote to the various political parties asking them to include in their election manifestos a commitment to maintaining, or better yet enhancing, the protection of the natural environment following the UK's departure from the EU. We subsequently wrote an analysis of the environmental content of each manifesto.

The aftermath of the election, with Theresa May losing her majority in Parliament, has added another layer of uncertainty to everything else that is going on. CIEEM President, Stephanie Wray, gave her views on the post-election uncertainty, including the implications of an agreement between the Conservative Party and the ultra-conservative Democratic Unionist Party to form a government and the appointment of Michael Gove as the new Environment Secretary. George Eustice MP, Thérèse Coffey MP and Lord Gardiner of Kimble remain in post as the rest of the Defra ministerial team.

Michael Gove is something of a chameleon. He has described himself as a "shy green" yet has also tried (unsuccessfully thankfully) to get climate

change removed from the school curriculum and said that EU wildlife protections hold back business. Since taking up the post however, Mr Gove has said that he is in "listening mode" and that he wants to fulfil the Conservative Party pledge to be the first generation to leave the environment in a better state than they inherited it. His 'Green Brexit' speech on 21 July 2017 gave the environmental sector much to be optimistic about, particularly with regards to not weakening EU protections, reforming agricultural subsidies, emphasising the importance of science and evidence-based policy-making, being open to the benefits of new institutions, and his ambition for Defra's 25-Year Plan for the Environment.

Since the election we have also had the Queen's speech. However, considerable uncertainty remains, not least whether the current government will last long enough to implement the bills and initiatives set out.

## Repeal Bill

The UK government published the European Union (Withdrawal) Bill on 13 July 2017. The Bill (otherwise known as the 'Repeal Bill') still has the main intention to transfer EU law into UK law, and to repeal the European Communities Act 1972. CIEEM still has concerns for the environmental sector, and we will have to see what amendments are brought forward for the Bill before it is enacted. Some of these concerns overlap with our broad issues for Brexit as stated above.

**Principles:** The Bill does not make provision to include the principles from Article 191 of the Lisbon Treaty (see above) in UK law.

**Scrutiny of Delegated Powers:** As expected, government Ministers are to be granted broad-ranging powers to amend EU legislation transferred into UK law. Given the volume of laws that will require amendments this is required, however there needs to be greater scrutiny of the amendments. One suggestion is that the UK government could set up a dedicated Select Committee to look at these amendments. CIEEM was also pleased to see that a two-year sunset clause had been included in the Bill, which means that Ministers will not have these delegated powers indefinitely.

## Feature Article: CIEEM, Brexit and the Natural Environment: Achieving a Better Future (contd)

**Post-Brexit Accountability:** There is unfortunately no clarity in the Bill regarding robust accountability post-Brexit. The Bill has no requirements for new UK institutions (despite what Mr Gove has since said) to replace the EU institutions that currently provide the monitoring and enforcement responsibility. The UK government must put new governance structures in place to address this lack of accountability.

**EU Case Law:** The Bill states that EU case law created up until the day the UK leaves the EU will continue to be applied. However, UK courts will not be bound by any EU case law, but if they intend to dismiss EU case law they will have to apply the same tests as they would use to justify departing from their own domestic case law.

**Primary Legislation:** CIEEM and several other environmental organisations and bodies believe that, to secure environmental standards and protections, the transferred EU laws must be transposed into UK primary legislation through, for example, an Environment Act.

### Implications for the Devolved Administrations and Ireland

Through all of this it could have been all too easy to get wrapped up in the Westminster bubble. We have been very conscious to consider the implications for the devolved nations and the Republic of Ireland in our work and will continue to do so.

The Scottish and Welsh governments have published their own White Papers on Brexit, which describe their distinct approaches to, and challenges from, the UK leaving the EU.

You can read more about the potential implications of Brexit for the devolved administrations and the Republic of Ireland later in this edition of *In Practice*.

### Working in Collaboration

Brexit is too big and wide-ranging for CIEEM to address all the issues in isolation, indeed it would be foolish for us to even try. As such we have fostered new relationships and strengthened old ones to reinforce our messages externally, share intelligence and not duplicate work.

Those we are working with include the Association of Local Government

Ecologists, British Ecological Society, Chartered Institution of Water and Environmental Management, Chartered Institute of Wastes Management, Environmental Policy Forum, Institution of Environmental Sciences, Institute of Environmental Management and Assessment, Institute of Fisheries Management, Greener UK, Landscape Institute, Law Society, Linnean Society, Society for the Environment, Professional Associations Research Network, UK Environmental Law Association, and Wildlife and Countryside Link.

We have also used the opportunity to increase our engagement with governments, agencies, and relevant Select Committees.

### Other CIEEM Activities

We have been invited to give presentations at external events, on 'Brexit and Ecology Professionals', 'The way forward for natural environment policy post-Brexit' and 'Wildlife Law: Understanding Current Policy and Next Steps for Reform'.

In addition, we have published several articles in previous editions of *In Practice*, and contributed to the Harvard Kennedy School report entitled *Making Brexit work for British Business: Key Execution Priorities*.

### Next Steps

We are now working with a political affairs and communications agency to identify the most effective means of disseminating our views and positions on Brexit in the autumn. This is the next stage in how we will use the work put in by the task groups and others.

We will follow the progress of the Repeal Bill, including how and if any amendments have implications for members and the sector. Correspondingly we will also follow the UK-EU negotiations, which have started rather shakily.

CIEEM will continue to keep members updated on both our own activities and other events as they happen.

In the longer term, we will also be using Brexit as an opportunity to improve and strengthen relationships with partners, improve how we conduct our policy work and generally put us in a better place to influence policy-makers and others in the future.

### Acknowledgements

I have to say a very big thank you to everyone who has been involved in our Brexit work so far. This includes the Governing Board, Strategic Policy Panel, the Brexit Working and Task Groups, external partners and collaborators, and also my CIEEM Secretariat colleagues. We would not be where we are now without the help and input from all of these people.

### More Information

The CIEEM Brexit webpage – [www.cieem.net/eu-referendum](http://www.cieem.net/eu-referendum) – contains further information on the above article and continues to be updated as a resource for both members and the public. We publish relevant external news as well as ongoing updates on CIEEM activities on the webpage.

**If you have any queries or comments on the work that CIEEM is doing in relation to Brexit please contact Jason at:** [JasonReeves@cieem.net](mailto:JasonReeves@cieem.net).





# The Great Repeal Bill – Safeguarding the Future of Our Natural Environment Legal Framework?

**Josh Middleton**  
Freeths LLP

The wheels are now in motion for the most important legislative overhaul in the UK's history. Theresa May triggered Article 50 of the Lisbon Treaty on 29 March 2017, with the White Paper for the Great Repeal Bill published the following day. At the time of writing, the draft Bill itself has not been published and is expected in July of this year (*note: please see addendum at end of this article*).

The White Paper provides environmental stakeholders and the wider environmental community with reassurance that our natural environment legal framework will remain substantially the same in the period immediately following Brexit. However, the Paper is not all good news and there remain a number of unanswered questions. Foremost among these are the extent to which any changes to environmental

legislation could be made in the short-term, and what the Government's plans for the protection of our natural environment are in the long-term.

This article considers the developments which have occurred since Penny Simpson's (Partner at Freeths) December 2016 *In Practice* legal update, *Brexit: Potential impacts on our natural environment legal*

*framework* (Simpson 2016). I consider these developments and what their potential impact on our natural environment framework will be, both in the short- and longer-term. I will also address some of the more difficult questions which have arisen from the White Paper.

## What does the Great Repeal Bill White Paper tell us?

The White Paper developed three key points which will have a profound effect on the legal framework for our natural environment: (1) the conversion of EU law into UK law, (2) the future role of the Court of Justice of the European Union (CJEU), and (3) the prospective use of Henry VIII clauses. I deal with each in turn.

## 1. Converting EU law into domestic law

*"In order to achieve a stable and smooth transition, the Government's overall approach is to convert the body of existing EU law into domestic law, after which Parliament (and, where appropriate, the devolved legislatures) will be able to decide which elements of that law to keep, amend or repeal once we have left the EU. This ensures that, as a general rule, the same rules and laws will apply after we leave the EU as they did before"* (emphasis removed).<sup>1</sup>

The White Paper promises that the Great Repeal Bill will, "wherever possible", retain all of the EU regulations and EU-derived laws which form part of our domestic environmental legislation as they stand at the date of withdrawal. This provides welcome reassurance to the environmental community that our natural environment legal framework will, in general, retain its existing protections in the short term.

The decision to convert all EU law to UK law is a practical one from the Government. They are likely to be mindful of the divisiveness of cherry picking the laws which they wish to carry across on our withdrawal, and also of the short timeframe which makes the 'cherry picking' approach impractical. As the White Paper reminds us, *"we need to be in a position to repeal the European Communities Act 1972 (ECA) on the day we leave the EU"*, making it imperative that the conversion process under the Great Repeal Bill is completed within the short timeframe before our withdrawal.

This conversion process under the Great Repeal Bill will not be straightforward. It has widely been recognised that a significant proportion of the estimated 800 pieces of EU environmental legislation are too complicated to be rolled forward on Brexit without detailed technical amendments being made via the use of the Government's delegated powers (discussed below). These amendments range from the removal of references to EU institutions to the more complex consideration of how reciprocal arrangements, which will become one-sided on the UK's withdrawal, will be dealt with.

It is clear, therefore, that the conversion process will be complex and must be carried out diligently to ensure the effective retention of existing EU laws.

## 2. The future role of the Court of Justice of the European Union (CJEU)

*"The Bill will provide that any question as to the meaning of EU-derived law will be determined in the UK courts by reference to the CJEU's case law as it exists on the day we leave the EU.... Once we have left the EU, the UK Parliament (and, as appropriate, the devolved legislatures) will be free to pass its own legislation"*.<sup>2</sup>

The White Paper confirms that our domestic courts will be bound by CJEU case law and jurisprudence which pre-dates our withdrawal from the EU, but any which follows the date of withdrawal will not be binding on our courts. This to "[provide] for continuity" and "maximise certainty" by ensuring that black holes do not open up in our natural environment framework where CJEU judgments had once existed.

This retention of CJEU jurisprudence has again been welcomed by the environmental community. However, it should be borne in mind that the White Paper also confirms that *"Parliament will be free to change the law, and therefore overturn case law, where it decides it is right to do so"*.<sup>3</sup> This is a major caveat on the continuing application of CJEU judgments. Many commentators consider that our withdrawal from the EU will inevitably result in a divergence between UK and EU law, with the result that pre- and post-withdrawal CJEU judgments will have reduced or no application to certain areas of our domestic legal framework in the future.

There are further potentially problematic issues which arise as a result of our divergence from EU law. First, the White Paper confirms that CJEU judgments are to be apportioned the same judicial weight as Supreme Court judgments, and therefore only the Supreme Court can depart from them (unless Parliament changes the underlying legislation). This will have the unintentional result that when the CJEU departs from or overturns an existing judgment following our withdrawal, our domestic Courts will be bound to the "out-dated" CJEU judgment as it stood at the date of our withdrawal.

Litigants requesting that a new CJEU decision be applied in relation to their case would therefore have no other choice but to appeal all the way to the Supreme Court. Whilst our domestic legislation remains

closely aligned to the EU's (i.e. in the immediate years following Brexit), there is a strong argument for our courts to attach significant weight to post-withdrawal CJEU judgments. However, as our legal systems inevitably diverge, this argument will become weaker and it can be expected that the UK will develop its own more distinct body of case law separate from CJEU influence. The White Paper appears to recognise this, providing that the Supreme Court *"while treating its former decisions as normally binding, will depart from its previous decisions "when it appears right to do so"*".<sup>4</sup>

The general separation of our legal framework from the EU's also presents broader concerns as to the development of our environmental law post-withdrawal. There is consensus among environmental practitioners that our links with the rest of Europe have a positive effect on the safeguarding of the natural environment. The current system facilitates cross-border collaboration and knowledge-sharing on environmental issues – consider the Natura 2000 system for the conservation of biodiversity, implemented through the Birds and Habitats Directive. The White Paper does not indicate the extent of our continued collaboration with the EU on these matters. It is likely that this will be determined by any future trade deal agreed between the UK and the EU.

Separation also threatens the effective enforcement of environment law. The European Commission and CJEU have historically played an active role in securing implementation of environmental protection standards, assisted by the deterrent of infraction proceedings for non-compliance. These EU oversight functions will no longer exist on our withdrawal.

The White Paper was silent on what steps will be taken to prevent an enforcement vacuum being created, but the House of Lords in their report *Brexit: environment and climate change* unequivocally state *"governmental self-regulation will not be an adequate substitute [to the EU Commission and CJEU] post-Brexit. An equally effective domestic enforcement mechanism, able to sanction non-compliance, will be necessary to ensure that the objectives of environment legislation continue to be met in practice"*.<sup>5</sup> There are a range of options for the



Government in this regard; from the creation of a new public body or environmental court, to the more ambitious suggestion that an updated Environmental Protection Act be implemented. Despite these options, there remain fears that the Government will instead favour a more “voter friendly” business-first attitude with the effect of relaxing enforcement mechanisms, to the detriment of the environment.

Irrespective of the concerns outlined above, the retention of pre-withdrawal CJEU case law should be considered as a positive development overall. The environmental community will however need to keep a close eye on how the Government effectively implements this change.

### 3. Henry VIII Clauses and why we should be wary

*“The Great Repeal Bill will create a power to correct the statute book where necessary, to rectify problems occurring as a consequence of leaving the EU. This will be done by secondary legislation, and will help make sure we have put in place the necessary corrections before the day we exit the EU”* (emphasis removed).<sup>6</sup>

Henry VIII clauses are, constitutionally, deeply divisive. To provide further explanation, primary legislation is made only by Parliament. It is subject to close scrutiny and requires formal approval from Parliament before coming into effect. In addition, Parliament retains control over the legislation and can make amendments if deemed necessary and appropriate. This system is considered to be constitutionally sound, ensuring a division between the powers of Parliament and the Government. Henry VIII clauses undermine this system by enabling *the Government*, instead of Parliament, to amend primary legislation by way of subordinate legislation. The subordinate legislation generally used is statutory instruments.

Withdrawing from the EU in the manner proposed by the White Paper will require primary legislation to be amended by statutory instruments under the powers of the Henry VIII clauses. This is due to both the volume of amendments required and the short timeframe before withdrawal. This is controversial for the constitutional reasons described above, and also the reduced scrutiny which statutory instruments face.

The risk attached to the use of statutory instruments from an environmental perspective is that important legislation which underpins our natural environment legal framework will be open to amendment and repeal from the time in which the Great Repeal Bill receives Royal Assent. This is irrespective of the fact that the Bill is carrying legislation across in its current form. There is concern that any future amendment or repeal will be guided by the Government’s policy decisions, and without detailed Parliamentary scrutiny.

The White Paper has allayed concerns that the use of statutory instruments under the Henry VIII clauses will be policy-led, proposing a more sensible and restrictive approach to their future use. Their use *“will not be available where Government wishes to make a policy change which is not designed to deal with deficiencies in preserved EU-derived law arising out of our exit from the EU”*.<sup>7</sup> David Davis, Secretary of State for Exiting the European Union, has further explained that they will be used where *“technical changes”* are required post-withdrawal. These statements, taken together, suggests that use of statutory instruments under Henry VIII clauses will be limited to amendments necessary to carry out the conversion process pre-withdrawal, or to give effect to the final withdrawal agreement with the EU post-withdrawal. Their usage will also be time-limited, likely via *“sunset clauses”* which will specify when the power to use them ceases. The White Paper does not confirm the length of this time limit.

The Government’s stated position should be welcomed. The impacts of substantially amending or repealing key pieces of environmental legislation, such as the Birds and Habitats Directives, would be profound. These Directives have significantly developed the reach and effectiveness of the Wildlife and Countryside Act 1981. The Environmental Audit Committee’s report, citing the Woodland Trust, explains *“although these additional protections have been written into UK law via the Habitats Regulations, they rely on the underlying Directives to define terms and conditions, and so would not stand alone if EU legislation no longer applies to the UK without further domestic legislation”*.<sup>8</sup>

Notwithstanding the Government’s reassurances, the fact remains that the future use of these clauses presents a risk that the existing high standards of environmental protection in the UK will be diminished as part of a deregulation of our natural environment legal framework. The current Conservative government is renowned for being *“business friendly”*; consider the nationwide roll-out of the organisational licence in relation to great crested newts (GCN), announced in the recent Government White Paper *Fixing our Broken Housing Market*. This new approach to licensing was initially trialled by Woking Borough Council, and enables activities which may impact upon GCN at developments to be authorised simultaneously with the grant of planning permission for the purpose of *“speeding up delivery of housing and other development”*. The *“business friendly”* approach of the current government may therefore see the opportunity of giving the UK a competitive advantage in trading with the EU as too tempting to resist. The risk of this is however lessened by the expectation that during trade deal negotiations the EU will adopt a hardline stance to the UK short-cutting environmental standards to gain an unfair trading advantage over EU Member States.

Given their constitutional significance and potential divisiveness, we should expect Henry VIII clauses to be at the forefront of future discussions on the direction of our natural environment legal framework, and potentially subject to significant litigation.

### A note on Devolution

Environmental protection is a devolved matter and the current position is that UK countries have general control over their internal environmental policies. This has resulted in a degree of natural divergence between countries. There are concerns that the removal of the EU framework on the UK’s withdrawal in March 2019 will result in a more dramatic divergence, and therefore greater fragmentation of environmental protection throughout the UK.

The White Paper indicates that the Government has recognised the risk of devolved administrations having unfettered control over their internal policies. References in the White Paper to *“repatriation”* and *“work[ing] closely with*

# Legal Update: The Great Repeal Bill – Safeguarding the Future of Our Natural Environment Legal Framework? (contd)

devolved administrations to deliver an approach that works for the whole and each part of the UK” alludes to UK Parliament moving to retake control of devolved powers from Scotland, Wales and Northern Ireland.<sup>9</sup> The Government would undoubtedly prefer to obtain the devolved countries’ consent for such a move, although this is particularly unlikely to be forthcoming from Nicola Sturgeon given Theresa May’s refusal of IndyRef2. The Government may have to fall back on a “hard” retaking of devolved powers through legislative amendments of the Scotland Act 1998 (alongside the Wales Act 2006 and Northern Ireland Act 1998 if required).

## The next steps

When published, the Great Repeal Bill will be subject to detailed parliamentary debate and must be approved by both Houses of Parliament. It is expected that the Bill, if approved as expected, will receive Royal Assent in late 2017, with provisions for the use of Henry VIII clauses immediately coming into force to allow the conversion process to begin. The White Paper is not explicit on when the remainder of the Bill comes into force, although it seems likely that this will be on the date which the UK withdraws from the EU.

## Addendum: the European Union (Withdrawal) Bill

*This section was added following the publishing of the European Union (Withdrawal Bill) 2017-19.*

The European Union (Withdrawal) Bill 2017-19, formerly described as the Great Repeal Bill, was published on 13 July 2017.

The content of the Bill largely mirrors the government’s aims as set out in the earlier White Paper, and discussed in detail above. As expected, the Bill provides for EU-derived domestic legislation to have effect, and for direct EU legislation to form part of, domestic law on and after exit day.<sup>10</sup> In addition, the courts will no longer be bound by European Court decisions and principles on and after exit day, but may take these (and other EU developments) into account “if it considers it appropriate to do so”.<sup>11</sup>

Henry VIII Clauses also feature in the Bill. In relation to deficiencies in the law arising from our withdrawal from the EU and

complying with international obligations, the Bill confirms that “Regulations...may make any provision that could be made by an Act of Parliament”. The scope of this power is limited to an exhaustive list provided, and notably regulations may not create a criminal offence. In recognising the divisiveness of these powers, a time limit of two years has been imposed from the date of exit day, following which no further regulations may be made. Similar powers exist in respect of implementing the withdrawal agreement, with these powers expiring on the day after exit day. The implementation of these powers appears to be sensible in light of the circumstances.<sup>12</sup>

The Bill was accompanied by Explanatory Notes and Factsheets. Of most interest to the environmental community is Factsheet 8 titled “Environmental protections”, which provides a more specific insight into the government’s future intentions on the protection of the environment following exit from the European Union. It confirms that the UK “will uphold all our obligations under international environmental treaties”, listing the Convention on Biological Diversity (CBD) as one of several examples of which the UK will remain obliged to honour. This commitment will presumably also extend to important international treaties to include most notably the Convention on the Conservation of European Wildlife and Natural Habitats (the “Bern Convention”). More unexpectedly, the government has also vowed to improve environmental protection by legislating for a “comprehensive 25 Year Environment Plan”.<sup>13</sup>

The overall impression from the publishing of the European Union (Withdrawal) Bill is therefore positive, although as suggested previously, the environmental community will need to continue to monitor whether the changes implemented in practice are effective and meet the long-term requirements of our environment.

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## Notes

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## About the Author



Josh Middleton is a second seat trainee in the Commercial team at Freeths LLP. His first seat was spent with the Environment team based in Sheffield, developing experience across natural environment law. This ranged from advising on environmental compliance to assisting in wildlife crime matters. Josh expects to qualify as a solicitor in September 2018 with Freeths LLP.  
**Contact Josh at:**  
[josh.middleton@freeths.co.uk](mailto:josh.middleton@freeths.co.uk)



# Brexit: A Devolved View



## Brexit Implications for the Environment in Wales

**Matthew Quinn**

Distinguished Visiting Fellow, PLACE, Cardiff University, and former Director, Environment and Sustainable Development, Welsh Government

Almost all aspects of environmental law, funding, delivery and policy, as well as the important related fields of agriculture, forestry and land use planning, are devolved to the National Assembly for Wales and, in turn, to its executive, the Welsh Government. With this devolved responsibility, Wales has progressively established its own approach: a unique comprehensive agency, Natural Resources Wales, a distinctive legal base, most notably in the recent Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act, and its own separate Rural Development Programme.

The distinctive approach under devolution has been enabled by membership of the European Union, not because of the funding that is so often the focus of discussion, but because the EU legal and programme frameworks have provided a federally-agreed structure within which the different parts of the UK can reflect their own circumstances and aspirations.

In a talk delivered in Chicago on 9 September 2016, Wales' First Minister

Carwyn Jones expressed the view that the loss of the EU legal and operational frameworks and a consequent move to Westminster centralisation would be a threat to the future of the UK. He argued that powers transferred from the EU should flow directly to the devolved institutions where legal responsibility currently resides and that any subsequent UK frameworks should then be ones agreed between equal partners across the administrations. This position was reflected in the joint statement – *Securing Wales' Future* – made with the Plaid Cymru leader on 23 January 2017.

Immediately following the Brexit vote, Welsh Government convened a roundtable of stakeholders across the broad environmental and natural resources interests, ranging from environmental NGOs and farming unions to water companies and food businesses. The aim was to reach a common Welsh position on the future direction for policy and programmes, building on existing engagement that has shaped the new Welsh legal and operational framework.

Discussions were set in the context of the nature of the Welsh environment and the industries that use and shape that environment. Over a third of Wales' land and sea area is under some form of environmental or landscape designation, including three national parks. Eighty-four per cent of Wales' land area is farmed, of which 75% is permanent pasture grassland and 80% is designated as a less favoured area where cultivation conditions are considered poor. Holdings are on average smaller than in the rest of the UK and less than 3% primarily grow crops. This strongly shapes the distinctive landscapes and environmental and social conditions of Wales' rural areas. Public water supply is dependent on small reservoirs and rivers rather than ground water sources, providing a strong link between land management practice and drinking water supply, whilst Wales has abundant opportunities for terrestrial and marine renewables that are not fully realised.

The roundtable work identified a number of key risks and opportunities:

### 1. structure and survival of natural resource-based industries

- high dependence on direct exports to Europe of raw agricultural and fisheries products, as well as probable indirect exports of processed products through supply chains
- vulnerability of upland farming and of the red meat sector in general to changes in support and, above all, to imports from outside the EU
- concern that frameworks for farming and industries such as water and energy were likely to be driven by English conditions and would not be suited to opportunities in Wales BUT
- scope to build a distinctive 'green' offer, based on the degree of commonality of vision across the group, including exploration of commercial payments for ecosystem services
- possible new markets at home and overseas, e.g. for dairy products, subject to processing and environmental pressures being adequately addressed
- scope for more nimble and outcome-based agricultural support

systems, subject to the World Trade Organisation position of the UK

### 2. environmental regulation

- 1,500 pieces of EU regulation that would need to be addressed, especially areas of direct EU regulation such as fisheries, chemicals and nuclear
- perceived risk of reduced regulatory standards, with a 'dive to the bottom' that would be ill-suited to Wales, where the opportunity was generally based on high environmental quality and animal welfare rather than volume and price
- the lack of clarity over how the devolution settlement would be respected and whether the distinctive sustainability and natural resources approach in Wales might be curtailed
- potential side-lining of environmental regulation through treaty and trade agreements where devolved administrations would not be included in the negotiations BUT
- potential (given the right UK frameworks) to tailor legislation and programmes, moving ahead of the pace of EU reform, building on

recent new Wales legislation and drawing directly on international best practice

The Reform Bill announced in the Queen's Speech on 21 June 2017 is intended to establish new UK frameworks for agriculture, fisheries and nuclear safety and transfer existing EU powers and duties to UK Secretaries of State or to the Westminster Parliament. The proposals for the Bill to allow amendments to reflect future trade deals and the way in which the Bill handles appellate functions exercised by EU bodies will be watched with particular interest.

#### About the Author



Matthew Quinn spent 30 years as a civil servant innovating in the field of sustainability, planning and environment. He says he is now very fortunate to have

the chance to consider the opportunities and challenges of that work from an academic standpoint.

**Contact Matthew at:**  
QuinnMJ1@cardiff.ac.uk



## Implications of Brexit for Devolved Environmental Law in Scotland

**Chris Cathrine MCIEEM**

Director, Caledonian Conservation Ltd

Under the Scotland Act 1998 (as amended)<sup>1</sup>, any areas not explicitly reserved to the UK Parliament and UK Government ('Westminster') are devolved to the Scottish Parliament and Scottish Government ('Holyrood'), with the caveat that any legislation must be compatible with EU law. At present, this means that environmental law is fully devolved to Scotland, provided that legislation implements and does not conflict with EU law, such as the Habitats, Birds and Environmental Impact Assessment directives.

Despite the EU providing a common framework, devolution has allowed environmental law to diverge between Scotland and the rest of the UK, with some significant differences including the protection of birds (e.g. traditional nest sites of certain raptors and protection of certain raptors from harassment all year), invasive species (in Scotland invasive species are not defined by a list), translocations, the definitions of 'native' and 'natural range', and the definition and implementation of public bodies' biodiversity duty (underpinned

by the Scottish Biodiversity List). It is also worth noting that references to EU law are integral to the Scotland Act, but not all devolved environmental law relates to implementing EU directives. Therefore, Brexit will have some impact on devolved environment powers and, more fundamentally, on the devolution settlement itself.

Unfortunately, the announcement of the snap General Election has meant that questions relating to this article could not be answered by government representatives as they are now a matter

for the incoming government (at time of writing). The only response to queries received from a UK Parliament civil servant before purdah indicated that decisions had not yet been taken as to which environment powers will be reserved to Westminster after Brexit, and so they were unable to even advise on the appropriate government to speak to. There is therefore a high level of uncertainty regarding the future of environmental law in Scotland, and so it is only possible at this stage to consider the broad potential implications.

As environmental law is presently fully devolved, it is possible that areas currently influenced by EU directives could become the sole responsibility of Holyrood. Environmental protection is central to the *Scottish Government Brexit White Paper*<sup>2</sup> published in December 2016, which acknowledges the importance of on-going co-operation with Europe. Biodiversity does not recognise national borders, and Scotland is important for many migratory birds, as well as supporting significant examples of species and habitats of international importance. Unfortunately, the UK Government response to this white paper<sup>3</sup>, provided in March 2017, states 'there are clear barriers to making your proposals a reality,' although, encouragingly, the letter also commits to uphold the UK's 'obligations under international environmental treaties.'

The *UK Government Brexit White Paper*<sup>4</sup> states that "no decisions currently taken by the devolved administrations will be removed from them" while the *Great Repeal Bill White Paper*<sup>5</sup> is clear that Westminster will provide replacement legislation in areas where the EU currently provides a common framework for devolved competencies. This intent was also confirmed by Prime Minister Theresa May in her speech to the Scottish Conservative and Unionist Party conference on 3 March 2017<sup>6</sup>. Agriculture and fisheries have been provided in White Papers, speeches and in answer to questions in UK Parliament as examples of areas which are at present fully devolved, and where a common UK framework will be provided by Westminster after the UK leaves the EU. It seems reasonable to expect that a UK-wide framework is likely to replace the framework currently

provided by the EU after Brexit, rather than full environment powers being repatriated to Holyrood. It is therefore somewhat concerning that at this stage much of the discourse on the future of environmental protection in post-Brexit UK has focussed on the unpublished *25 Year Environment Plan*, which covers England only and will not be statutory in any case.

Whether environment powers are repatriated to Holyrood or sit with Westminster after Brexit, in either case it could be argued that this will affect the scope of Scotland's devolved competencies. Under the devolution settlement, any changes to devolved powers should be agreed with Holyrood through a Legislative Consent Motion (LCM). However, devolved powers have been removed from Holyrood without consultation or LCM before (e.g. Scotland's devolved renewables obligation powers were removed by Westminster through the Energy Act in December 2013). Following the 2014 Scottish independence referendum, the Sewel Convention, which underpins LCMs, was to be made statute as recommended by the Smith Commission<sup>7</sup> (on increasing devolved competencies as pledged by all major UK political parties). However, the judgement by the Supreme Court during the Article 50 appeal<sup>8</sup> has indicated that the Sewel Convention remains a political convention, and is not legally enforceable, despite the changes brought in with the Scotland Act 2016 that were intended to implement the Smith Commission recommendations. This meant that although the UK Government did not legally require consent from Holyrood before invoking Article 50, by doing so without an LCM they have failed to observe a political convention. Given such historic precedent it is uncertain whether Holyrood will be consulted on, or be able to influence changes to, the framework for UK environmental law after Brexit.

At this stage, it is unclear how much influence Holyrood will have on environmental law after Brexit, and what implications this has for existing devolved legislation.

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## About the Author



Chris Cathrine BSc(Hons) MCIEEM FLS FRES is the founder and Director of Ecology of Caledonian Conservation Ltd. He has over 10 years' experience as a professional ecologist, including eight years' experience in ecological consultancy. He has worked for NGOs, Local Authorities and as a consultant throughout the UK.  
**Contact Chris at:** [chris.cathrine@caledonianconservation.co.uk](mailto:chris.cathrine@caledonianconservation.co.uk)





## A Brexit Perspective from Ireland

**Jenny Neff CECol CEnv FCIEEM**

Vice President (Ireland), CIEEM

**Paul Lynas CEnv MCIEEM**

Convenor, CIEEM Irish Geographic Section

The uncertainty around Brexit continues to dominate Ireland, North and South of the Border. The potential consequences are unknown but expected to be significant in terms of the practicalities of cross-border working for CIEEM members; also in terms of nature legislation and protection of habitats and species in Northern Ireland (NI), not least in relation to the loss of European funding; there are also significant implications for the future management of European sites which straddle the Border.

At the time of writing there has been continuing political uncertainty since the Northern Ireland Assembly elections in March 2017, with no Executive currently in place. The eventual outcome of this may influence strategic implementation of environmental and education policies as well as public spending budget allocations. CIEEM will continue to engage with, and try to build on, contacts already made with stakeholders in NI. This will of course depend upon the result of any future elections and any changes in personnel/post-holders. The Conservative government is now back in power at Westminster, supported in their slim majority with assistance from the Democratic Unionist Party (DUP) following an agreement of an additional funding package for Northern Ireland. It is still unclear how this additional funding will be spent and what, if any, will be on safeguarding the environment of the northern part of the 'Emerald Isle' on which the lucrative tourism sector depends.

The Coalition Government in the Republic of Ireland (RoI) remains in place, although regularly challenged by the opposition parties. No minister has been appointed in RoI with sole responsibility for Brexit as every Government Department will be affected; to date it has been dealt with as a cabinet responsibility, originally led by the Taoiseach (Prime Minister) Enda Kenny, who recently stepped down. However, with the election of a new Fine Gael party leader, Leo Varadkar – the incoming

Taoiseach in June 2017, it is not yet clear how Brexit will be managed by his wider cabinet. CIEEM will continue to engage with, and offer assistance to, stakeholders including in relation to Brexit. To date there have been no indications as to the stance on environmental matters, other than ongoing concerns in relation to fisheries and agriculture.

The CIEEM Irish Geographic Section was represented at a recent conference examining the impact of Brexit on the Environment across the island of Ireland. Attendees included MEPs, and other environmental practitioners from the agriculture, marine and environmental NGO sectors. There was a genuine concern expressed through the day that other pressures such as the complexities of the Irish Border, the economic situation and businesses trying to come to terms with new trading arrangements will take centre stage at Brexit negotiations, at the expense of the environment. It is anticipated that this will have repercussions for the natural heritage across the entire island.

The unique Irish perspective and need for special consideration in terms of the Border has been acknowledged by European leaders and it is hoped that this will continue into the Brexit negotiations as they proceed.

However, the environment appears to be a low priority, especially in the context of uncertainties around Brexit, NI and domestic political matters. It is noted however that RoI is committed to climate change and the need to lower emissions, though it is not expected to meet its renewal 2020 goals (Referred to the ECJ, February 2017).

### About the Authors



Jenny Neff BSc(Hons) MSc(Ecol) CECol CEnv FCIEEM is the CIEEM Vice-President for the island of Ireland and Chair of the Irish Section's Policy Review Group. Jenny is a vegetation

scientist and applied ecologist with over 40 years' experience of Irish habitats and species. She runs an independent consultancy undertaking work for state, semi-state and the private sectors. Her main areas of expertise are: blanket bog and coastal habitat ecology and restoration; EclA, ecological project management for infrastructural projects; and the application of Article 6 of the Habitats Directive.

#### Contact Jenny at:

[jneff.eacs1@gmail.com](mailto:jneff.eacs1@gmail.com)



Dr Paul Lynas BSc(Hons) MRes PhD CEnv MCIEEM is the Convenor of the CIEEM Irish Geographic Section. Paul is an Ecologist at AECOM in Belfast. He

specialises in ornithology and terrestrial mammal ecology, but has a wide range of ecological experience from across Ireland, both North and South. Before moving to AECOM, Paul worked for the RSPB and completed a PhD on skylarks at Queen's University.

#### Contact Paul at:

[paul.lynas@aecom.com](mailto:paul.lynas@aecom.com)

# Biodiversity and Brexit: Emerging Policy Priorities

**Liz Spedding MCIEEM**  
Principal Ecologist, WYG

Keywords: Brexit, Conservation of  
Habitats and Species Regulations,  
Habitats Directive, rewilding, Wildlife Bill



The Brexit process offers all professional ecologists an opportunity to influence the way environmental legislation and policy is adopted in the UK. If we take these opportunities, we should be happier with the outcome. This article provides essential background with an overview of two key government consultations, a summary of recommendations from a recent

review of UK wildlife legislation, and an assessment of the implications for the preparation of a new legal structure in the UK, post-Brexit.

## **Background: The Wildlife Bill**

In 2015, the Law Commission carried out a review of UK wildlife legislation in which they concluded that the previous two centuries of legislation resulted in *unnecessarily complex and inconsistent* legislation (Law Commission 2015). They proposed a new Wildlife Bill that would

integrate various key aspects of UK law, informed both by the EU and by our domestic legislation. In CIEEM's position statement on the EU Referendum in August 2016, it was suggested that the proposed Law Commission Wildlife Bill could be used as an initial draft for future legislation (CIEEM 2016).

The Wildlife Law report recommends reform of relevant legislation and, in effect, amalgamates some of the key areas of law that consultant ecologists rely upon in our work (Law Commission 2015). This legislation is crucial in justifying our advice to clients regarding protected and notable habitats, and species that need to



Hazel dormouse. © WYG.

be considered when assessing potential development proposals. Some of the proposed terminology is similar to that provided in the Conservation of Habitats and Species Regulations 2010 (as amended) and could maintain the levels of protection already afforded to those species currently protected under that Act. For example, the recommendation that:

*'... any reference to causing disturbance to the population of a protected species in an area should include, in particular*

- 1. actions that are likely to impair the ability of the relevant species to survive, breed or rear their young, hibernate or migrate; or*
- 2. actions that are likely to have a significant effect on the distribution or abundance of the population of the species in the area.'*

The Wildlife Law report also specifically recommends that *'the Secretary of State or Welsh Ministers should have the power to issue codes of practice for the purpose of providing practical guidance in respect of the application of the disturbance provisions in relation to specific species or geographical areas.'*

If the Wildlife Bill proposed by the Law Commission were to be used as a basis for new legislation post-Brexit, it would not only provide a framework for amalgamating relevant legislation but would also allow the UK to meet recommendations made within more recent guidance submitted to the Government for consideration. For example, one of the conclusions of the recent 'Fitness Check' of the Birds and Habitats Directives (Milleu, IEEP and ICF 2016) was that *'the goals of the Directives continue to reflect the needs of nature conservation and sustainable use for nature, people and the economy although more efforts are needed to achieve them'*. The report also indicated that the common framework provided by the laws that follow from the Birds and Habitats Directives *'has helped to create a level playing field and avoid a potential deregulatory 'race to the bottom' in environmental standards.'* They have also provided *'a more effective way to achieve... conservation objectives... due to the transnational character of nature and the steps required to conserve it'*.

On 22 November 2016, Dr Therese Coffey MP, the Parliamentary Undersecretary of State at Defra, wrote to the Chair

of the Law Commission giving the Government's response to the Wildlife Bill recommendations:

*'Exit from the EU provides an opportunity to re-examine our regulatory framework and how it works, so that it is fit for purpose to meet our national needs in future and fulfil our international obligations. It means we need to consider the implications of EU Exit for our approach to wildlife policy before deciding whether and how to implement your proposals and whether some of your proposals would need amending in light of EU Exit.'*

*Pressure on parliamentary time also means it is likely to be very difficult to find time to bring forward legislative proposals for major reform in the near future. However, I am happy to support the principle of looking at wildlife legislation as a whole to provide a coherent system which achieves better outcomes. The Law Commission's work will be invaluable in informing the Government's thinking.'*

Taking account of the Law Commission's report, and assuming that the provisions of the Birds and Habitats Directives are retained post-Brexit, the ongoing debate



associated with Article 50 should be less of a concern for politicians and environmental and ecological advisors alike.

### Key consultations and inquiries

There has been much debate within our sector as to the ways in which legislation could change, and speculation about the implications of leaving the EU. The government has consulted widely since the Referendum and environmental organisations like CIEEM continue to work hard towards a positive outcome for the environment.

We are not politicians, but what do we hope the House of Commons and the House of Lords will conclude after considering and assessing the reports submitted to them? Responses to recent inquiries and submissions by professional bodies like CIEEM and by NGOs provide pointers to what our sector would like to see post-Brexit. The CIEEM response to *The Future of the Natural Environment after the EU Referendum* (4 January 2017) and the submission from Environment Links UK and Greener UK to the *Lords EU Select Committee Inquiry – Brexit: devolution*

(March 2017) are particularly relevant as both reports advocate similar approaches.

### The Future of the Natural Environment after the EU Referendum (4 January 2017)

CIEEM's response to this House of Commons Environmental Audit Committee inquiry (CIEEM, September 2016) focused on the opportunity to transform relations between farming and the public. While many of the comments related to the Common Agriculture Policy – one of the principal questions – CIEEM advocated a cohesive approach to devolved decision-making and the need for an ambitious vision for the future of the natural environment including, for example, rewilding (Meech and Green 2017).

The House of Commons report provided seven recommendations, five of which are specifically relevant to our industry. These drew attention to the pledge to be the '*first generation to leave the environment in a better state than it found it*' from the Government's 2015 manifesto. The report stressed that the UK must maintain its current levels of environmental protection, especially if the UK leaves the Single

Market, and recommends commitment to a new Environmental Protection Act to ensure the UK has an equivalent or better level of environmental protection to the EU. The new Act should be underpinned by Defra's two separate 25-year plans, one for the Natural Environment and one for Food, Farming and Fisheries, which should be part of a fully co-ordinated approach. The final recommendation urged Defra to ensure that funding is allocated fairly and transparently between UK nations, with shared objectives and minimum environmental standards, so that the UK can continue to meet its international obligations.

Defra's 25-year plans were originally put forward by the Government's Natural Capital Committee (<https://www.gov.uk/government/groups/natural-capital-committee>). Part of the House of Commons report focusses on the pragmatism of having two separate plans with many arguing that there should be a unified approach, combining the needs of farming with those of the natural environment. Further details can be found at Wildlife and Countryside Link's website <https://www.wcl.org.uk/25-year-strategy-for-nature.asp>.



Great crested newt *Triturus cristatus*. © WYG.

## Feature Article: Biodiversity and Brexit: Emerging Policy Priorities (contd)

### Environment Links UK and Greener UK submission to the Lords EU Select Committee Inquiry – Brexit: devolution (March 2017)

Environment Links and Greener UK presented the collective views of 39 organisations, including CIEEM, to the government inquiry on *Brexit: devolution*. Although a significant portion of the report focussed on the devolution process and the constraints and opportunities facing the Government in that regard, it also drew on some of the conclusions from the recent Evaluation Study to support the Fitness Check of the Birds and Habitats Directives (Milieu, IEEP and ICF 2016). It supported the need for common standards and approaches to environmental protection following our exit from the EU.

The report noted that the four UK devolved nations must work together to develop and implement common standards across borders and recommended alignment on environmental matters. The key points included i) creating ambitious yet flexible common standards that are at least as high as those in existing EU law; ii) preventing a deregulatory 'race to the bottom' whilst encouraging a flexible and ambitious approach for each nation; iii) a fair and transparent funding system; and finally, iv) inclusion of a robust, shared governance arrangement, which should include monitoring and reporting obligations and associated enforcement mechanisms.

### Looking to the Future

Clearly, the work that has already been undertaken by the Law Commission in justifying a new, unifying Wildlife Bill; the 'Fitness Check' of the Birds and Habitats Directives; Defra's two 25-year plans; and responses and submissions to government inquiries from our sector, lay the foundations for an optimistic future.

Based on the discussions to date, three key themes emerge:

- The need for all the devolved nations to deliver ambitious levels of environmental protection, common standards and integrated frameworks and policies for all key areas.
- The preparation of one statute to protect biodiversity in the UK, in line with proposals from the Law Commission for a single Wildlife Bill and following guidance from the Environmental Audit Committee.
- Incorporation of existing EU legislation into any new statute and a strong commitment to avoid any deregulatory 'race to the bottom' in environmental standards.

Whilst politicians will want to show we are moving away from the perceived litany of EU red-tape and regulation, Brexit provides an opportunity through many forums for us to advocate the changes we want to see, including rewilding, for example, as one of the core principles within any regulatory framework. As CIEEM members, we should take as many opportunities as possible to promote, enthuse and inspire the delivery of multiple benefits to nature conservation through every project, plan and strategy we deal with (Driver 2017). To re-iterate a quote from David Lowe's piece in Issue 94 of *In Practice* (Lowe 2016), let us look to the words of Mahatma Gandhi: "Be the change that you wish to see in the world".

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### About the Author



Liz Spedding is a principal ecologist at WYG, and has worked in the ecology consultancy industry for over 14 years. She advises clients on all aspects of ecological

constraints and opportunities within proposed and permitted development projects across a variety of sectors

**Contact Liz at:**  
[elizabeth.spedding@wyg.com](mailto:elizabeth.spedding@wyg.com)



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# Brexit and Management of Trans-Boundary Pollution: How Will Offshore Operations Be Affected?

**Dr Federica Pace Grad CIEEM**  
Marine Technical Director, Baker Consultants

Keywords: Brexit, EEA, marine ecology, trans-boundary pollution

This article considers the possible consequences of Brexit for conservation efforts in the marine environment, particularly the implications for trans-boundary pollution. It focuses on nature conservation issues assuming that the UK will not be part of the European Economic Area in future or will have to renegotiate its terms.

## Background

In March 2016, ahead of the Brexit vote, the Institute for European Environmental Policy examined what could happen to UK Environmental Policy if the UK was to leave the European Union (EU) (Baldock *et al.* 2016). Two scenarios were considered based on whether or not the UK would remain within the European Economic Area (EEA), despite leaving the European Union. In both cases, key pieces of legislation, such as the Birds and Habitats Directives, will no longer apply unless the UK decides to maintain current transpositions in effect.

Eighteen months on, we know that the UK will be leaving the EU and that all access to the European market will be renegotiated; however, uncertainties persist around how the UK will manage its independence.

From an environmental perspective, the key question is whether the laws and mechanisms that have been put in place for nature conservation in response to the EU requirements, such as the designation of Natura2000 conservation areas, will be upheld or whether new standards will be implemented.

Immediately following the Brexit vote, the Government announced that The Great Repeal Bill would be drawn up, meaning that all existing EU-derived legislation will be copied across into domestic UK law. This includes the Habitats Directives, for instance. However, it has since been announced that legislation will only be kept 'where practical', so there is no 100% guarantee that all legislation will be kept in British law.

EU legislation is at the heart of UK policies on environmental quality, nature conservation, climate and energy, and fisheries. All these policies are relevant to the management of the marine environment and are inter-linked. For example, the UK will need to decide whether to comply with the EU Marine Strategy Framework Directive (MSFD) 2008 or whether to draw up new UK policy. In addition, EU environmental policy

regulates emissions of pollutants that may be harmful to humans and animals. Specifically, it includes trans-boundary pollution that cannot be avoided through national legislation such as radiation, heat, electromagnetic fields, underwater noise, heavy metals and hydrocarbons (Box 1).

## Impact of Brexit on nature conservation

Brexit effectively means that the UK will have two choices when it comes to nature conservation: maintain the current legislation and therefore align with EU requirements, or draw up new legislation. The latter option offers an opportunity to relax certain regulations or adopt stricter standards than those currently in place but important questions will have to be addressed regarding implementation. These include:

- Will projects that have already been consented be subject to new regulation or will they be managed according to the standards in place when consent was given? How will this be monitored?
- If new environmental regulation was less strict than at present, will large companies be likely to continue to operate according to EU legislation to comply with their own internal standards and ISO requirements and to satisfy European partners/customers?
- In cases where the UK decides to impose tougher regulations, will projects come to a halt and will companies look elsewhere within the EU to propose their developments?
- How long will it take for new policies to be drawn up and come into force?
- How will the interim period between a decision being made and policy implementation be dealt with?

## What are the practical issues?

The marine environment is exploited for two main reasons: its energy and its fishery. The UK, like the rest of Europe, has ambitious energy targets for the coming years, particularly with regard to renewable energy. Here we consider some practical examples to illustrate how renewables projects may be affected by the post-Brexit issues with specific case studies relating to trans-boundary pollutants, specifically underwater noise and electro-magnetic fields.

### Box 1. Trans-boundary pollution

Trans-boundary pollution is any type of pollution that spreads across more than one country and can apply to pollutants that are spread through air as well as water. Key pollutants and the environmental impacts associated with them are monitored by OSPAR (Oslo/Paris convention for the Protection of the Marine Environment of the North-East Atlantic) and summarised below. Further information and an intermediate assessment of pollutants derived from human activities is available at <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/pressures-human-activities-v2/>.

Environmental Impact	Pollutant
Acidification	Sulphur dioxide (SO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), ammonia (NH <sub>3</sub> )
Eutrophication	NO <sub>x</sub> , NH <sub>3</sub>
Ozone	Volatile Organic Compounds (VOCs), NO <sub>x</sub>
Bioaccumulation of toxic substances	Heavy metals, Persistent Organic Pollutants (POPs)
Death, injury and disturbance to wildlife	Underwater noise, hydrocarbons and plastics, radioactive material, electromagnetic fields (EMF)
Disruption of habitat	Temperature warming, Carbon dioxide (CO <sub>2</sub> )

### 1. Underwater noise and windfarms

In the offshore wind sector, several windfarms are in development to achieve a total of more than 20 GigaWatts (GW) of energy between now and 2030 (RenewableUK 2016). Half of these are already consented, meaning that the environmental statements, including proposals for the mitigation strategy, have already been submitted and agreed

upon. Offshore wind developers are under extreme pressure from the government to drive down costs so that energy will cost less to the end user (consumers); any change in the environmental regulation is therefore risky in terms of increasing the cost of production.

A major impact of wind farm construction is the introduction of energy into the marine environment in the form of

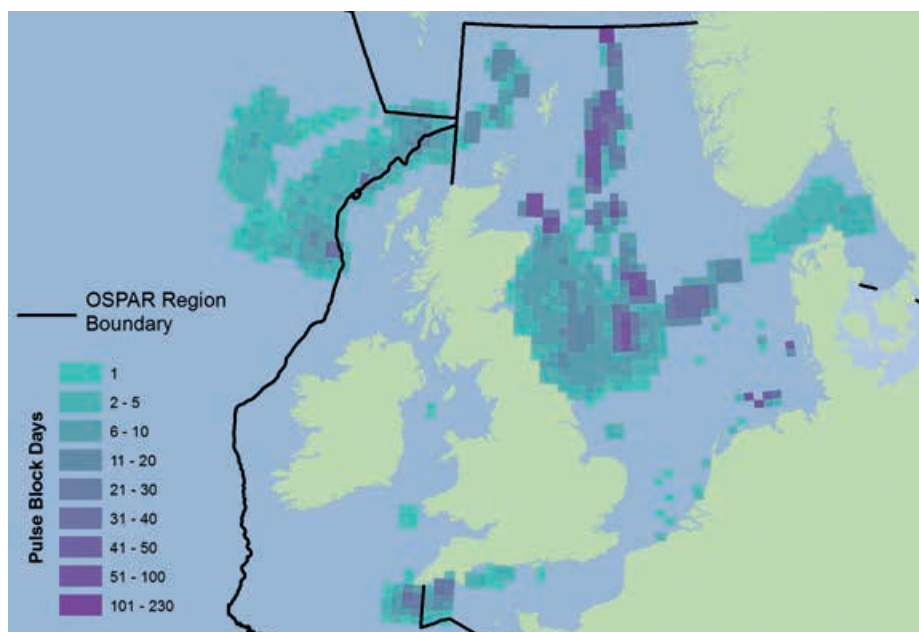


Figure 1. Total pulse block days in 2015, i.e. the number of days that impulsive noise was generated within each UK licensing block. Reproduced from OSPAR (2017) *Distribution of Reported Impulsive Sounds*. © OSPAR.

## Feature Article: Brexit and Management of Trans-Boundary Pollution: How Will Offshore Operations Be Affected? (contd)

underwater noise. This trans-boundary pollutant has been a focus for EU countries in recent years because it is known to impact marine mammals and fish significantly (OSPAR 2009a, Van der Graaf *et al.* 2012). During construction of a wind farm (foundation installation), high levels of noise are introduced by the hammering activities, notably piling, which is a loud impulse sound source with the potential to cause lethal and sub-lethal effects on marine life. As a result, the EU has a requirement that this type of activity is monitored and mitigated to achieve Good Environmental Status (GES), as well as many other activities that generate underwater noise (e.g. seismic exploration and shipping). OSPAR recently published an intermediate assessment for impulsive underwater noise that has been monitored as part of the MSFD commitment to maintain the introduction of energy (Descriptor 11 of the MSFD) at levels that do not adversely affect the marine environment. The intermediate assessment is based on data gathered from different European countries, including the UK, during 2015 (Figure 1).

Figure 1 clearly shows that the UK is a key contributor of underwater noise pollution, particularly in the North Sea, and that activities generating loud impulsive noise have effects across boundaries. The impacts on marine wildlife have been studied increasingly since the publication

of the MSFD in 2008 with much of the research funded by European grants. Impacts range from death and injury at close proximity to the source, typically a few hundred metres away but varying depending on the source, to disruption in behaviour and masking of communication. Behavioural impacts are evident up to and beyond tens of kilometres from the source depending on the hearing ability of the species of interest and the source level. Therefore, activities taking place in UK waters frequently affect animals across country borders.

### Challenges post-Brexit

Noise pollution is already under debate because each individual country in the EU is implementing a different approach to achieving the target imposed by the European Commission. A good example is the way underwater noise impacts are mitigated for during the construction phase of wind farms in two countries at the opposite end of the scale: Germany has a strict threshold approach (BSH 2013) that relies on challenging mitigation techniques whilst the UK focuses on monitoring and then delaying operations if animals are spotted (JNCC 2010, MMO 2014). The ultimate goal of both countries is to ensure that there are no adverse impacts on marine wildlife but the target species/groups are not necessarily the same. In fact, Germany applies a double threshold approach entirely designed around the

need to minimise impacts of sound exposure on harbour porpoises *Phocoena phocoena* (Figure 2). This consists of applying a noise threshold to both the Sound Pressure Level (SPL) and Sound Exposure Level (SEL) generated during piling. These values are typically 190 dB re 1 µPa for the SPL and 160 dB re 1 µPa<sup>2</sup>s for the SEL measured at 750 m from the source (Dekeling *et al.* 2013). In UK waters, a wide variety of marine mammal species have to be monitored and mitigated for, requiring a broader approach (Table 1).

Furthermore, the UK has put more focus on impacts on fish compared to other countries, leading to seasonal restrictions on piling activities when the Environmental Impact Assessment (EIA) has shown the potential of underwater noise to impact on the spawning success of commercially important species, such as the Atlantic herring *Clupea harengus* – a hearing specialist with dedicated hearing structures (Popper *et al.* 2006).

Underwater sound can travel long distances with minimal attenuation, therefore high levels of noise emissions in one country can result in high levels being transmitted across borders.

Furthermore, the fish and marine mammals that are the key receptors of these pollutants are highly mobile and travel across borders meaning that they could experience the impacts in one country but then suffer the impact of

Table 1.

German Approach	UK Approach	Differences
Deterrence of animals from the mitigation area using acoustic deterrents and ramp-up procedure	Deterrence of animals from the mitigation area using acoustic deterrents and ramp-up procedure	None
Monitoring of presence of harbour porpoise using passive acoustic monitoring	Monitoring for presence of marine mammals using visual observation and in some cases using passive acoustic monitoring (during night and low visibility conditions)	UK monitoring done in real-time whilst in Germany post-processing carried out. In UK operations are delayed if marine mammals are spotted within mitigation zone during pre-watch or ramp-up period. In Germany no action is taken.
Requires compliance to double threshold. Noise emissions have to stay below thresholds throughout construction. Levels are monitored (almost always in real-time) throughout construction.	No noise threshold. Levels are monitored for first four foundations (not in real-time).	Both countries require noise model to be submitted during the planning application; in Germany the model is used to determine what noise mitigation tool(s) have to be employed whilst in UK it determines the size of the mitigation zone. In Germany, monitoring is used to check adherence to threshold and non-compliance leads to stop of operations whilst in UK monitoring is used solely to validate the model.





Figure 2. Noise and porpoise monitoring equipment. © Baker Consultants Marine Ltd.

their exposure at another location across borders. For example, the Southern North Sea off the UK east coast, where several Round 3 and deep water wind farms are planned (RenewableUK 2016), is an extremely important spawning ground for the Atlantic herring (Ellis *et al.* 2012), a species that migrates across the whole North Sea. The International Council for the Exploration of the Seas (ICES) has highlighted the need to treat the North Sea ecosystem as a whole in the management of this species (ICES 2006, Dickey-Collas *et al.* 2010).

Any diversification from the EU target by the UK post-Brexit will have significant impacts on the success of mitigation strategies across borders and will directly impact those species the legislation aims to protect. For instance, Natura2000 conservation areas have been established across Europe; the UK like all the other European countries has invested considerable resources to select the sites and to establish a monitoring programme for them. It seems unlikely that all this effort would be disregarded post-Brexit and there is optimism that the areas will be kept as conservation targets. However, the way in which the UK decides to regulate marine pollutants in future will impact not only these areas but also those of neighbouring states.

## 2. Electromagnetic fields from windfarm cables

Electromagnetic fields (EMF) and thermal radiation are produced by submarine

cables when electricity is transported (Figure 3). This is another type of pollution that has the potential to disrupt migration and behaviour of fish and marine mammals (Klaustrop 2006, OSPAR 2009b) yet the cables are an important component of windfarm infrastructure.

EMF consist of both electric and magnetic fields, which can travel 100 m to each side of the cable carrying electricity away from the turbines. EMF levels are affected by cable design, cable geometry and composition (twists, helicity) as well as the electric current, three-phase balance and transient filtering. The burial depth into sediment as well as the soil composition are also important. For example, the conductance of the sediment will change the electric field distribution and thereby the eddy currents and the associated magnetic field.

Electromagnetic pollution may be particularly harmful to fish that use electromagnetic receptors to navigate their environment and especially those that use electromagnetism to guide migratory behaviour (Gill *et al.* 2014). Indeed, several species, such as European eel *Anguilla anguilla*, Atlantic salmon *Salmo salar* and sea turtles have been found to rely on magnetic fields to return to their birthplace for reproduction.

## Challenges post-Brexit

Whilst most cables connect wind farms to the respective national grids, some cables and offshore substations are shared

between countries and managed in partnership. Placement of cables so far has been managed by each country individually even though some of the long cable routes cross borders. In general, no Environmental Impact Assessment (EIA) is required in respect to laying of cables, although some countries, for example Germany, include this as part of monitoring of seabed temperature increase. However, no common programme has been developed to monitor EMF and their impacts; as such, this aspect poses fewer challenges than underwater noise in the regulatory context post-Brexit but there is a risk that it will remain unregulated in future.

## What is likely to happen?

Large infrastructure projects in UK waters and around the world are being planned, developed and constructed by international companies who, in compliance with their ISO policies, aim to carry out the works in line with the highest standards to minimise the impact of their activities on the environment. If the UK imposes



Figure 3. Submarine cables in the OSPAR Maritime area (incomplete). Compiled from different sources by the German Federal Agency for Nature Conservation. Reproduced from OSPAR (2009b) *Assessment of the environmental impacts of cables*. © OSPAR.

tougher regulations, companies will either look elsewhere or reduce their environmental impact further. If the UK relaxes the regulations, it is likely that the work will still be carried out to the higher EU standards, particularly if there are cross-border elements such as cables.

Based on information to date, our assumption is that the UK will continue to implement the current environmental regulations relating to the marine environment. Of course, there will be limited, if any, opportunity to shape future regulations in the EU even though, due to cross-border effects, UK companies may still have to achieve EU targets and demonstrate Good Environmental Status.

## Conclusion

Key issues in the marine environment post-Brexit are:

1. Whether protected areas such as Natura2000 sites will be retained.
2. The impact of changes to pollution legislation on protected sites.
3. Underwater noise pollution trans-boundary effects on migratory species.
4. Regulation of underwater cables that cross national boundaries and the management of associated EMF pollution.

5. If the UK puts in place different requirements from the existing ones, what will the reaction of the industry be? In the case of tougher regulations, there is scope for companies to challenge the Government, particularly for projects where planning permission has already been granted. In the past, there have been cases of projects that were granted before a new or revised standard was issued and, typically, these projects were subject to the requirements that were in place

at the time that they were granted permission for construction. However, there is no guarantee that this will be the case. If the UK puts in place less strict requirements than those applied in Europe, it is difficult to predict what will happen. In the case of underwater noise emissions monitoring for example, the UK has already implemented less strict standards than other countries and the industry is complying with these requirements.

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## About the Author



Dr Federica Pace's expertise combines an undergraduate marine biology with advanced underwater acoustics and signal processing studies applied to marine mammal sounds.

She has managed large infrastructure projects, designing and applying marine mammal mitigation plans and monitoring underwater noise emissions. Her work includes the application of appropriate technology to efficiently monitor marine wildlife and inform environmental impact assessments. Federica is a member of the CIEEM Marine Special Interest Group.

**Contact Federica at:**

[f.pace@bakerconsultants.co.uk](mailto:f.pace@bakerconsultants.co.uk)



# The Investigation and Prosecution of Wildlife Crime – Post-Brexit Challenges and Opportunities

**Pete Charleston**

Conservation Wildlife Crime Officer, Bat Conservation Trust

Keywords: Bat Conservation Trust, enforcement, EPS, sentencing, species legislation, species of conservation concern



Brown long-eared bat *Plecotus auritus* roost in building. Photo credit Hugh Clark / [www.bats.org.uk](http://www.bats.org.uk).

We consider the implications of Brexit for the legislation concerning crime against species of conservation concern. We discuss the effectiveness of the protection currently offered through criminal law and consider the work of the Bat Conservation Trust in improving enforcement, monitoring and assisting wildlife volunteers, ecologists, investigators and prosecutors. The Bearing Witness for Wildlife Crime project is used to demonstrate an effective way forward that may be adapted to include other species of conservation concern.

## Introduction

There is much discussion as to whether our protected species legislation will become diluted when the United Kingdom leaves the European Union. Many hope that the protection offered to species as a consequence of the EU Birds and Habitats Directives will be retained. This follows from the European Commission's recent "Fitness Check" of EU nature legislation, which concluded that the directives remain



highly relevant and fit for purpose. They added *'Full achievement of the directives will depend on substantial improvement in their implementation'* (European Commission 2016). Indeed, a review of the directives by the UK in 2012 reached similar conclusions (HM Government 2012).

The need for improvement in the implementation of both the Birds and the Habitats Directive is also recognised in the EU's biodiversity strategy (European Commission 2011), the first target of which is to protect species and habitats through *full compliance, efficient management and better enforcement* of EU nature law.

Statutory authorities discharging their obligations to have regard to biodiversity through both planning and criminal law, as envisaged by the directives, deliver protection of both species and habitats. There is much case law and legal opinion but the Bat Conservation Trust (BCT) and others feel that too little regard is given to how the criminal law protecting our native species of wildlife is being enforced. The Conservation (Habitats, & c) Regulations were introduced in 1994 and have been subjected to amendment and replacement on a number of occasions; other legislation has increased levels of fines that can be imposed by magistrates. Despite these changes, the majority of criminal offences against UK wildlife are of a summary nature (misdemeanours) and cannot be tried in Crown Courts. This is a significant barrier to understanding the extent of wildlife crime and the way the Police investigate it; allegations of wildlife crime are not recorded in the same manner as offences such as theft, assault or public disorder and therefore the extent of wildlife crime remains unknown. Furthermore, the Police cannot make evidence-based decisions about the level of resource they need to allocate to these issues and it is difficult to assess performance in this area.

### Bat Conservation Trust's Bat Crime Investigations Project

#### In the beginning.....

In 2001, BCT initiated an Investigations Project based on the successful model used by the RSPB. Research undertaken in the first two years demonstrated that the level



Barn being stripped. Photo credit Shirley Thompson / [www.bats.org.uk](http://www.bats.org.uk).

of criminal offending directed towards bats and known to BCT was of concern and was likely to be merely the tip of an iceberg. In recent years, efforts have been made to record how many investigations of bat crime are undertaken by the Police across the UK.

#### Working with the Police

Since 2010, BCT have recorded 120 to 150 investigations into bat crime annually. Every Police force in the UK has undertaken one or more investigations with some such as Devon, Cornwall and the Metropolitan Police dealing with far more cases than others. Wildlife crime officers in forces dealing with only small numbers of cases cannot build up any degree of expertise so BCT maintains contact with as many investigating officers as possible, providing both legislative and investigative advice. We also monitor the progress of every investigation until advised of completion and the manner in which a case is to be disposed of. By doing this, BCT is providing a crime recording system, which can be used to identify bat crime hotspots, record *modus operandi* and assess performance of individual forces.

In 2006 the National Wildlife Crime Unit (NWCU) was formed. This is a Police-led intelligence unit whose work focuses on UK wildlife crime priorities. The unit does not act as a recording centre for wildlife crime but does collate and analyse criminal intelligence submitted to it. An agreement with Crimestoppers ([crimestoppers-uk.org](http://crimestoppers-uk.org))

means that any report of wildlife crime received by that organisation is forwarded to the National Wildlife Crime Unit.

BCT, as routine, submits intelligence on bat crime to the National Wildlife Crime Unit and also works closely with the unit's investigative support officers who provide invaluable support to local investigating officers. Intelligence submissions assist the National Wildlife Crime Unit in identifying organised criminal activity, in particular where it crosses boundaries between Police forces.

#### Potential outcomes of cases investigated

Analysis of the past three years' bat incidents reveals that Police investigations mostly are unable to confirm that a criminal offence has actually taken place. Often the evidence required to prove a case to the criminal standard, beyond reasonable doubt, is simply not available. But in up to a third of cases, the Police provide crime prevention advice to those involved, ensuring that they will think again about committing offences in the future.

Only 15-20% of bat crime investigations confirm that offences have been committed. The majority of these will be dealt with outside the criminal justice system, often through the use of formal cautioning. More often in recent years, restorative justice is used where it has been decided that prosecution is not in the public interest. This can bring conservation benefit that cannot be ordered by the

courts and, where used appropriately, is considered to be a valuable means of case disposal. For example, a developer in the West Midlands agreed to write a letter setting out his experiences of being investigated for destroying a bat roost, saying how great the personal impact, both financial and psychological, had been (Bat Conservation Trust 2016a). This letter has since been widely used by those working to raise awareness of the issues.

Between 2010 and 2015, BCT recorded around 700 Police investigations into bat crime but only 18 cases were heard in court, with findings of guilt being returned in 17 cases. This low prosecution rate, less than 3% of cases investigated by the Police, reinforces the need for penalties to be dissuasive – a fundamental requirement of criminal law.

### Working for appropriate sentencing

In August 2013, sentencing for bat crime and, more broadly, wildlife crime reached an all-time low when a developer in Humberside was fined just £210 for destroying seven roosts used by several bat species when he demolished buildings on land for which planning permission had been sought: just £35 per roost!

That low point, however, did act as a catalyst to improve sentencing for bat crimes. Since then, we have found the Crown Prosecution Service (CPS) to be keen to ensure that wildlife crime is prosecuted as effectively as most cases are now investigated. The Crown Prosecution Service has created a network of specialist wildlife crime prosecutors who review every case of bat crime submitted to them and are also available to provide direction and advice on Police investigations.

In the past, there were many cases where sentencing was weak, with fines being

imposed that were less than the costs saved by the offender for not following lawful process. Working with witnesses, the Police and the Crown Prosecution Service, courts now receive information on the financial gain linked to the offence, thereby providing an indication of what the minimum financial sanction should be. As a consequence, most fines in recent years have been higher than those imposed previously.

Crucially, the work undertaken in relation to proportionate sentencing led to a landmark case at Derby Crown Court where a Proceeds of Crime Act confiscation order for over £6000 was imposed on a developer who illegally destroyed a bat roost in Matlock. Such legislation is commonly used to confiscate the criminal assets of those involved in organised crime such as human trafficking or dealing in controlled drugs. Its use in sentencing for a bat crime is welcomed and concludes a long-running debate as to whether the legislation can be used in such cases.

The Matlock case was also of great significance because this was the first occasion that a bat-related case had ever been heard in a crown court. The comments of the judge, when it came to sentencing, were also of significance. When imposing a fine of £3000 in addition to the £6000 confiscation order he said that the offence was at the lower end of the scale of offending. These comments can be brought to the attention of magistrates hearing future cases suggesting that even minor offending merits a substantial fine.

But whilst we can reflect on certain cases that appear to drive forward our aim to ensure that criminal sentencing is appropriate and dissuasive, much remains to be done. In the most recent case, the owner of a house and his builder were fined derisory amounts for illegally destroying a bat roost, despite having told an ecologist that he would pay a fine rather than delay work until a licence could be obtained. Inappropriate sentencing is less about the weakness of legislation and more about ensuring that prosecutors and courts are provided with the information needed to allow for informed sentencing. At present, there are no sentencing guidelines for wildlife crime available to the courts. The Scottish Sentencing Council has undertaken to produce

sentencing guidance and representations are being made to the Sentencing Council for England and Wales with a view to addressing this.

### Conservation impact statements

The use of conservation impact statements is common practice for all types of wildlife crime. Police guidance on the professional investigation of wildlife crime identifies the value of such evidence. The Crown Prosecution Service routinely asks BCT to provide evidence of the conservation impact on the species of bat affected by criminal behaviour. Magistrates and the judiciary welcome this additional information when deciding on an appropriate sentence; they receive little or no training in relation to wildlife crime and most will have no experience of wildlife crime.

### The importance of witnesses

Obtaining sufficient evidence to prove a case of bat crime to the criminal standard can be immensely difficult. Witnesses are crucial in this process. Successful prosecutions are unlikely without evidence compiled through surveys undertaken by professional ecologist or experienced bat workers.

Acting as a witness in any criminal proceedings is, for many, a stressful and time-consuming experience. It often lays bare the difficulties associated with evidence in criminal law where cases must be proven beyond reasonable doubt. Detailed, dated notes and photographs from the time of the offence, or as soon as possible thereafter, will increase the chances of prosecution and conviction.

### Other species

The Police undertake many investigations into allegations of offences against European protected species, such as great crested newt *Triturus cristatus*. However, such investigations are not recorded systematically and there is very little information available to demonstrate the extent of criminal offending against these species, still less to draw any conclusions as to whether allegations are being effectively investigated and prosecuted. The same can be said of species protected by schedules 5 and 8 of the Wildlife and Countryside Act because of conservation concerns. The RSPB continue to record instances of bird crime with a particular focus on raptor



Bat roost in brick. Photo credit Keith Zealand / [www.bats.org.uk](http://www.bats.org.uk).

# Feature Article: The Investigation and Prosecution of Wildlife Crime – Post-Brexit Challenges and Opportunities (contd)

persecution whilst organisations such as the RSPCA and Badger Trust record allegations of what might be termed welfare-related wildlife crime that, whilst deplorable, has little or no impact on the conservation status of the species concerned.

## Bearing Witness for Wildlife Crime

In November 2016, BCT launched the Bearing Witness for Wildlife Crime project to extend the scope of our investigations work to include allegations of offences against other protected species of conservation concern (Bat Conservation Trust 2016b). We aim to provide similar advice and assistance for species such as great crested newt, water vole *Arvicola amphibius* and protected plants but without impinging on the work being undertaken by NGOs championing other species.

Bearing Witness for Wildlife Crime will also work to ensure that sentences for all wildlife crime are dissuasive. We will do so in collaboration with other conservation NGOs through Wildlife and Countryside Link.

## Conclusion

Compared to other European countries, it can be argued that the legislation protecting bats is being well enforced in the UK. The evidence suggests that enforcement here can be held up as best practice to other EU member states where prosecutions for bat crime appear to be almost non-existent. However, all species of bats found in the wild in the UK are European Protected Species and the future of protected species legislation is uncertain post-Brexit.

Historically, the UK has recognised the need to protect bats and their roosts through the Wildlife and Countryside Act 1981. It seems likely that more recent Regulations implementing the Birds and Habitats Directives will be brought into UK domestic legislation, although there remains the risk that these may be amended subsequently without appropriate consultation. The recommendations made by the Law Commission in their draft Wildlife Bill may also be reconsidered making the complete removal of legal protection for European Protected Species, including bats, unlikely.

Of greater concern is that, post-Brexit, the requirements of EU directives to provide comprehensive protection,

effective enforcement and dissuasive sentencing for listed species will no longer apply. Experience suggests that the UK government, whilst prepared to implement legislation, is less concerned with effective enforcement. Whilst we remain in Europe there is always the potential to challenge government by referring complaints to the EU. This option will cease, post-Brexit. Many are calling for an enforcement mechanism for ensuring that UK authorities adequately discharge those duties that were previously overseen by Europe. Such a mechanism must be available in order to ensure that wildlife crime is effectively recorded, investigated, prosecuted and sentenced. Without such safeguards wildlife crime is likely to slip further down the enforcement agenda, with limited police resources being directed elsewhere.

## Note

CIEEM members are bound by a professional code of conduct and are expected, in usual circumstances, to report breaches of legislation to relevant enforcement agencies. If you have reported suspicions of crime involving species protected by conservation law to the Police, or are considering doing so, then BCT would welcome contact (please email [pcharleston@bats.org.uk](mailto:pcharleston@bats.org.uk)). If needed, we are available to liaise with investigating officers with a view to ensuring that allegations of offences are effectively addressed but we are also looking to maintain records of how much wildlife crime is being reported. Recording of offences will be a key component in any argument to increase the amount of resource the Police put to wildlife crime.

## About the Author



having served as a full-time wildlife crime officer in North Wales.

**Contact Pete at:**  
[PCharleston@bats.org.uk](mailto:PCharleston@bats.org.uk)

Pete Charleston works for the Bat Conservation Trust as the Conservation Wildlife Crime Officer for the Bearing Witness for Wildlife Crime Project. He is an ex-police officer

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# Accepting Little Losses to Allow Genuine Gains – A New Approach to Great Crested Newt Mitigation Licensing

Keywords: European protected species (EPS), EPS licensing policies, great crested newts

**Matt Oakley CEnv MCIEEM**  
Principal Ecologist, Atkins Ltd

**Luke Gorman CEcol MCIEEM**  
Principal Ecologist, Atkins Ltd

**Octavia Neeves MCIEEM**  
Environment Manager, Network Rail

**Claire Wansbury CEcol CEnv FCIEEM**  
Associate Director, Atkins Ltd

Natural England has published four new policies to change the way mitigation licences are issued for European protected species (EPS) in England. The policies aim to reduce the time and financial burdens placed on developers when EPS are encountered, while providing investment in positive conservation action such as the creation and long-term maintenance of habitat.

Detailed guidance is not currently available and the approach is expected to evolve as it is applied in practice. Open sharing of experience is therefore critical to achieving cost savings and reaping the biodiversity benefits these policies should allow. This article provides a summary of the new policies and examples of how they can be used by consultants, developers and Natural England working together to shape mitigation strategies for great crested newts *Triturus cristatus*.



Great crested newt. Photo credit Atkins Ltd.

## Background

Where EPS are affected by development projects, mitigation licences can be obtained under the Habitats Regulations (2010) provided strict criteria are met. Among these criteria, the applicant must demonstrate that, taking any mitigation set out in a legally binding method statement into account, the Favourable Conservation Status of the species will be maintained. Since 2015, Natural England has been collating evidence and consulting on policy changes and innovative approaches to licensing for European Protected Species (Natural England 2016). The trial of new approaches recognised the costs and frustrations of applicants 'spending considerable time and money surveying

*and moving small numbers of animals... with little or no benefit for the conservation status of the animals'* (Natural England 2016). Natural England published four new formal licensing policies in January 2017 (Box 1). Full details of these policies are available online (Natural England and DEFRA 2017). Natural England's stated intention is that these policies '*will encourage planners and conservationists to think on a wider, landscape scale – channelling investment into bigger, better, more joined-up habitat for wildlife. In short, the changes will mean the application of the law is focused on the measures which are most effective at protecting populations.*' (Natural England 2016).

**Box 1.**

**Policy 1 – Greater flexibility when excluding and relocating European Protected Species (EPS) from development sites.**

**Policy 2 – Greater flexibility in the location of newly created habitats that compensate for habitats that will be lost.**

**Policy 3 – Allowing EPS to have access to temporary habitats that will be developed at a later date.**

**Policy 4 – Appropriate and relevant surveys where the impacts of development can be confidently predicted.**

<https://www.gov.uk/government/consultations/wildlife-licensing-comment-on-new-policies-for-european-protected-species-licences>



Figure 1. Great crested newt. Photo credit Atkins Ltd.

Great crested newts (Figure 1) are the 'bête noir' some consider most likely to delay any building scheme because of the need to survey at specific times of the year. Some expert ecologists have expressed reservations over a system where development projects spend large sums to 'rescue' very small numbers of individual newts. They have argued that the same budget could have contributed to more positive conservation measures, such as pond enhancement or creation. It is heartening that Natural England has listened to these concerns.

The publication of the policies does not mean that licences using 'traditional' approaches (Figure 2) are no longer available for great crested newts or other

EPS, but they increase opportunities for innovation. Guidance on Policy 1, which enables reduced use of fencing and capture exercises, and Policy 2, which creates potential for off-site compensation, states that the avoid – mitigate – compensate hierarchy must be followed. This approach accords with the National Planning Policy Framework and the published draft Biodiversity Net Gain Principles (CIRIA, CIEEM and IEMA 2016). The approach set out in Policy 3 has already been used successfully for great crested newts at Crown Farm Quarry (case study 2, below). Where impacts can be predicted with confidence, particularly where they will be minor, applying Policy 4 could reduce survey costs by, for example, using eDNA survey

instead of full population survey. However, this Policy must be applied with extreme care as, if detailed survey is then required, up to a year's delay could result until the next population survey window. Critically, all of these policies can only be applied where there is confidence that Favourable Conservation Status will be maintained.

These policies, either individually or together, could theoretically be applied to mitigation strategies for any EPS in England, although the consultation exercise focused on great crested newts. There is no 'one size fits all' approach to maintaining the Favourable Conservation Status of species with widely varied habitat requirements. For example, the Bat Conservation Trust (BCT) advised Natural England that decisions regarding the application of each policy to any individual EPS must take account of current ecological knowledge about that species (BCT 2016). However, there will certainly be cases where it is already appropriate to apply certain policies to other EPS, as demonstrated by the recent licensed work on the A338 affecting sand lizards *Lacerta agilis* (Natural England 2017). This work focussed on substantial habitat restoration and creation rather than fencing and capture, in keeping with Policy 1, and the approach created by Natural England, Dorset County Council and CGO Ecology was highly commended for innovation in the 2017 CIEEM awards.

### Practical application of the new policies for great crested newts

Policies 1, 2 and 4 are of most relevance to development projects given their focus on alternatives to translocation, off-site compensation and the level of survey required. Policy 3 is more applicable to long-term development projects such as quarries. The following case studies demonstrate how the new policies can be utilised when developing a mitigation strategy for great crested newts in three different scenarios.

#### Case Study 1 – Midland Main Line Capacity Increase Scheme (2015 and 2017)

This case study compares two sections of the Midland Main Line railway currently going through a process of electrification and capacity increase between London



and Sheffield. The first, Kettering to Corby (K2C, 1.5 km), involved earthworks completed under a standard great crested newt mitigation licence; and the second, Bedford to Kettering (B2K, 38 km), is following a mitigation strategy based upon the new EPS licensing policies.

### K2C Earthworks, 2015

Approximately 1.5 km of earthworks were programmed to take place on embankments within 250 m of ponds supporting breeding populations of great crested newts. The habitat consisted of a mosaic of grassland, scrub and semi-mature trees with a high probability of encountering great crested newts and therefore a mitigation licence was obtained from Natural England prior to the commencement of operations.

Amphibian-proof fencing was erected around the footprint of the earthworks and 257 great crested newts were moved to adjacent habitat unaffected by the works over 92 nights between June and September 2015. The new embankments were seeded with a standard grassland seed mix, which should become suitable habitat for great crested newts in a few years' time. There was no long-term benefit to the populations of great crested newts and the cost of the work was estimated to be £105,000.

### B2K Earthworks, 2017

This project is larger scale with earthworks programmed from July 2017 along 38 km of railway line. Six sections of earthworks are situated within 250 m of ponds supporting distinct breeding populations of great crested newts.

The timing of the works provided the opportunity to utilise the newly adopted licensing Policies 1, 2 and 4. Discussions with Natural England centred around the use of off-site habitat creation and compensation measures to provide long-term benefits to the conservation status of great crested newts, and in return avoid the requirement to install exclusion fencing and undertake expensive translocations of each of the six populations affected. Instead, Finedon Station Compensation Site, a 5-ha intensively managed grassland field owned by Network Rail and adjacent to the Midland Main Line, would be enhanced for great crested newts through the creation of breeding ponds, hibernacula and woodland and scrub planting. This site was chosen because it included two ephemeral ponds supporting a small population of great crested newts. Although there was ample terrestrial habitat in this location, the great crested newt population was only small, most probably due to the lack of permanent aquatic habitat.

A 30-year maintenance and management plan was agreed between Network Rail and Natural England. This agreement will safeguard great crested newts in the long-term and enhance their conservation status in the Bedford area. As no aquatic habitat was affected by the earthworks, the loss of small numbers of great crested newts from each population adjacent to the railway was unlikely to affect their conservation status significantly at this local scale, and therefore would also have no significant effect on the conservation status of great crested newts at the regional or national scale. Therefore, the only mitigation was destructive searching and removal of any great crested newts encountered to areas of suitable habitat (railway embankments) outside of the works' footprint.

The total cost of habitat creation, maintenance and monitoring of the great crested newt population at Finedon Station Compensation Site will be in the region of £75,000-£100,000. This compares to an estimated £350,000-£500,000 (for raw materials and installation of fencing, consultancy fees and safety staff) using traditional mitigation techniques, as implemented for the K2C scheme. Overall, this approach will therefore provide cost savings and reduce programme risks for Network Rail while providing a substantially better contribution to great crested newt conservation than a standard licence would have done.

### Retrospective Case Study 2 – Crown Farm Quarry (2003-present)

The basic principles of Policies 1 and 3 have been implemented at a sand and gravel extraction site in Cheshire long in advance of the release of the new policies. A great crested newt development licence has been in place at Crown Farm Quarry, Cheshire, since 2003, which does not exclude or relocate great crested newts from the site but instead encourages the species to utilise the permanent and temporary habitats within the site.

The great crested newt licence was obtained based on commitments that:

1. Existing areas of good quality terrestrial and aquatic habitat for great crested newts would be protected from quarrying activities, with protected



Figure 2. Traditional' mitigation using fencing and pitfall trapping. Photo credit Atkins Ltd.





Figure 3. Pond creation at Crown Farm Quarry. Photo credit Atkins Ltd.

areas clearly indicated to the workforce by signage or separated from active quarrying areas by large sand bunds.

2. Thorough hand searches for great crested newts would be carried out whenever work operations required the disturbance of suitable terrestrial habitat. Any newts discovered would be relocated to good quality terrestrial habitat within the nearest of two receptor sites.
3. Additional refuges for great crested newts would be created within areas of suitable habitat.
4. Works areas and access tracks would be kept free of potential places of shelter for great crested newts, i.e. kept as bare sand or hardstanding. Great crested newts generally commute and disperse under the cover of dark and could move freely across these areas at night but were not present during the day when the quarrying works occur. This approach maintained habitat connectivity and free movement of individual newts between different parts of site the without compromising their survival.

In addition, habitat creation, restoration and enhancement (not a requirement of the great crested newt development licence) was undertaken at the site (Figure 3).

Great crested newt population size class assessments have been undertaken at Crown Farm Quarry biennially from 2003 to 2017 inclusive, in accordance with Natural England guidance (six survey visits using bottle traps, torchlight surveys and egg searching between mid-March and mid-June; English Nature 2001). The newt

population has increased from around 10 newts per survey in 2003 to 361 newts per survey in 2017, demonstrating a clear biodiversity gain. This increase shows that the basic principles of Policies 1 and 3 can work well at mineral extraction sites, if implemented appropriately, and the presence of great crested newts at an active mineral extraction site need not pose a significant constraint to mineral extraction. At long-term, multiphase schemes there may be scope to use this approach effectively for wider biodiversity gains.

## Case Study 3 – Didcot Sidings (2017)

Network Rail planned to bring the disused Didcot Sidings back into use in 2017. However, the defunct sidings had been colonised by great crested newts because they provided ideal resting and hibernation sites close to a large pond. Network Rail looked to the new licensing policies when developing an overall mitigation strategy for the project as part of a licence application.

Policies 1, 2 and 4 were applied, as illustrated on Figure 4. This scheme provides a particularly good illustration of the key to applying Policy 2, which is to understand the landscape in which the work would be taking place. Where are other ponds? Where is other suitable habitat? How do these habitats connect to the site in

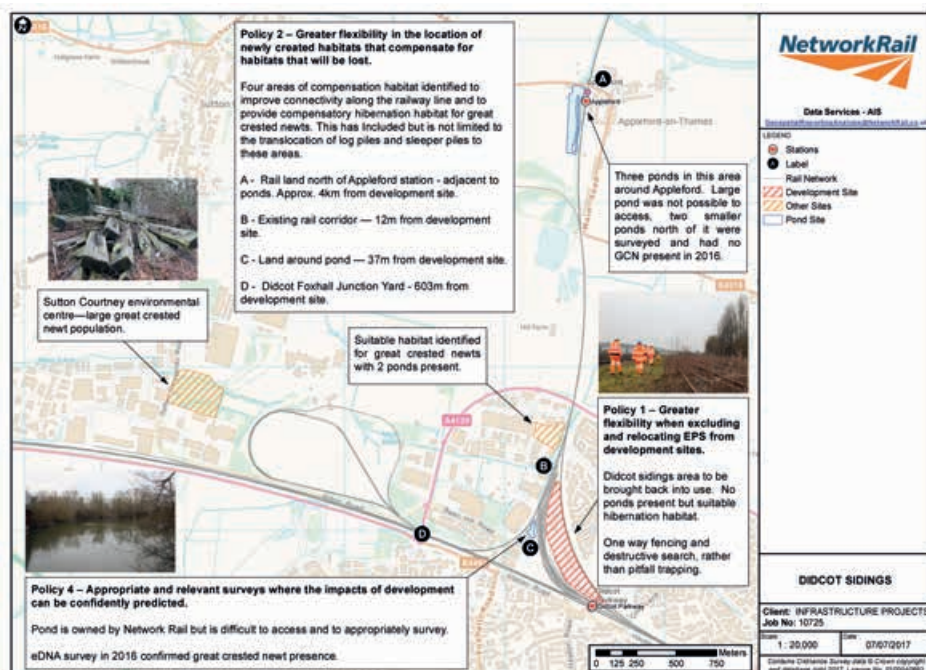


Figure 4. Didcot Sidings Mitigation and Compensation Strategy. Photo credit Network Rail.

question? Are other mitigation licences active in the area? Are there other known records of great crested newts in the area? Answering these questions through a desk-based mapping exercise will enable the best opportunities for mitigation/enhancement to be identified quickly. In this case, new and enhanced habitats will extend the connectivity of the newt population linearly along the rail corridor towards other ponds and populations.

Application of the new Policies allowed Network Rail to contribute to great crested newt conservation in the Didcot area and save at least nine months on the construction programme by removing the need to complete comprehensive survey work ahead of redevelopment.

## Conclusions

The case studies reported here highlight how the adoption of the new licensing policies for great crested newts can achieve significant financial and time savings to a development scheme, whilst also achieving long-term conservation benefits to the species. This experience demonstrates that the policies are relatively easy to apply to great crested newt mitigation strategies, due to the extensive knowledge and information available on this species' habitat requirements, and ability to adapt to change. What isn't clear at this stage is how these policies can be adopted for other EPS species, for example bats, where the success or failure of standard mitigation techniques such as bat lofts is

less well understood and many species can travel more than 10 km in one night, making the requirements of "off-site" mitigation difficult to determine.

The policies should result in further innovation in approaches to great crested newt mitigation. It is essential that information about good and bad examples are shared, along with the challenges faced and lessons learned.

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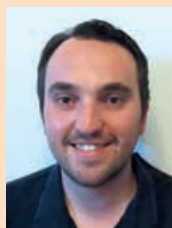
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## About the Authors



Matt Oakley has been involved with great crested newt mitigation licensing for over 10 years, and is a Registered Consultant on Natural England's Low Impact Class Licence. Matt has held great crested newt mitigation licences for two Nationally Significant Infrastructure Projects: Redditch Branch Enhancement Scheme and Norton Bridge Junction Improvement. In 2015 Matt obtained a Project-wide licence for great crested newts for the Midland Main line electrification scheme, which is understood to be the first of its kind.

**Contact Matt at:**  
matt.oakley@atkinsglobal.com



Luke Gorman is a Principal Ecologist with Atkins. He manages the Warrington ecology team and specialises in herpetology. Luke holds a great crested newt survey licence for England, Scotland and Wales and is a Registered Consultant able to use Natural England's Great Crested Newt Low Impact Class Licence. He has worked on numerous high profile, and innovative, great crested newt mitigation schemes throughout the UK and in Scandinavia over the past 14 years.

**Contact Luke at:**  
luke.gorman@atkinsglobal.com



Octavia Neeves is an environment manager at Network Rail. Her role covers the Infrastructure Project Region of Western, Wales and Crossrail. Octavia has seven years' ecological and environmental experience with the last four years specialising in rail infrastructure projects.

**Contact Octavia at:**  
Octavia.Neeves@networkrail.co.uk



Claire Wansbury is an Associate Director of Ecology within Atkins. She has particular interest in the Habitats Regulations, biodiversity gain and Ecosystem Services, and finding opportunities for wildlife through pragmatic solutions to issues within development projects.

**Contact Claire at:**  
Claire.wansbury@atkinsglobal.com



# Human Impacts on Nature Reserves – The Influence of Nearby Settlements

Keywords: anthropogenic, disturbance, housing, nature reserves

Fin Rylatt, Lauren Garside and Sara Robin  
Yorkshire Wildlife Trust

Recreational disturbance and damages can result in significant negative impacts on wildlife and habitats, and the addition of extra housing to an area can increase such pressures considerably. There has been little investigation of the impacts of increased recreational pressures on habitats outside of European Designated Sites and there is little evidence of impacts on non-statutory designated sites (such as Local Wildlife Sites). This article investigates the relationship between housing proximity and frequency of damage and disturbance on Yorkshire Wildlife Trust nature reserves, and how such impacts should be considered when determining the likely impacts of additional housing to an area.

## Introduction

Yorkshire Wildlife Trust (YWT) manages over 100 nature reserves spanning a variety of landscapes and habitats in both rural and urban areas. Whilst our reserves are managed for people to re-connect with nature just as much as they are for wildlife, there is a delicate balance to be struck to satisfy both these differing needs and ensure that increased engagement with the public doesn't result in biodiversity losses.

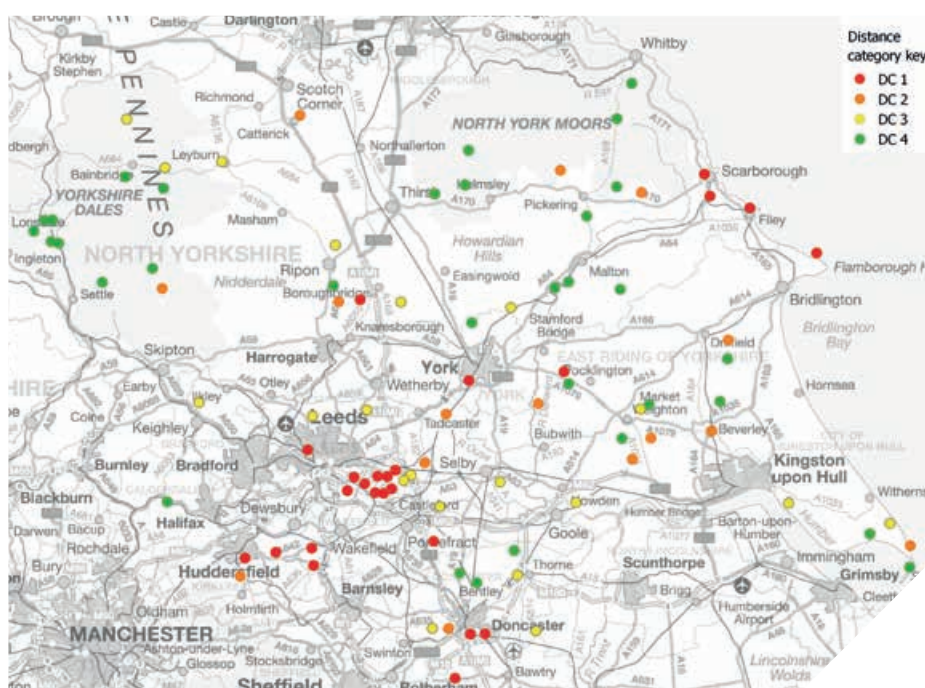


Figure 1. Map of Yorkshire Wildlife Trust nature reserves colour coded according to proximity to settlements. Distance categories – DC1: within 100 m, DC2: 101-500 m, DC3: 501-1000 m, DC4: 1001+ m.

Due to a lack of current research, Yorkshire Wildlife Trust undertook an analysis into the impacts of housing on nature reserves with the aim of better understanding why damage and disturbance occurs and how it may be prevented. This article presents an analysis of the different types of damage and disturbance and the impact that the proximity of housing may have on such incidents.

## Methodology

In order to assess the problem, incidents of damages and disturbances were logged during visits to 94 nature reserves by YWT reserve officers during 2016. As such visits are ad-hoc in their nature, the data were collected opportunistically

rather than on set inspections specific for the study. Reserve officers were provided with definitions of each damage/disturbance type to ensure consistency. The data were collated on a central Excel database and analysed.

Five types of damage and disturbance were defined and recorded by reserve officers:

1. Litter and fly-tipping
2. Damage and disturbance by dogs and other domestic animals
3. Anti-social behaviour including vandalism, graffiti, barbecues
4. Theft and destruction of wildlife and property
5. Damage by vehicles.



Nature reserves were allocated to distance categories depending on their proximity to settlements (Figure 1). A settlement is defined in this study as any place made up of clusters of twenty or more dwellings, retail units and/or business/industry units.

The following categories were used to assess the relationship between disturbance and proximity of settlements to YWT nature reserves:

- **DC1:** 0-100 metres from nearest settlement (total reserves: 26)
- **DC2:** 101-500 metres from nearest settlement (total reserves: 16)
- **DC3:** 501-1,000 metres from nearest settlement (total reserves: 20)
- **DC4:** 1001+ metres from nearest settlement (total reserves: 32)

Frequency categories were used to quantify the occurrence of incidents. Each frequency category was assigned a numerical weighting so that a frequency **score** could be calculated for each category of damage and disturbance. This accounted for the differences in frequency of each individual report (with reports ranging from one-off incidents to frequent incidents) and allows for a simple comparison of frequency across all distance categories (Figure 2):

- **One-off** – incidents occurring only once/rare – assigned a weighting of 10
- **Occasional** – on average occurring once a month or less often – a weighting of 20

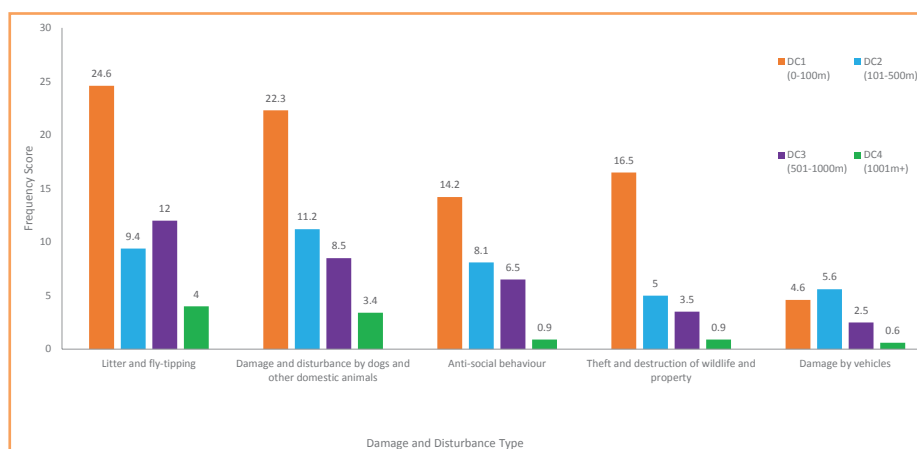


Figure 2. Frequency score of each damage and disturbance type across 94 nature reserves sub-divided by distance category.

- **Frequent** – on average occurring more than once a month – a weighting of 50

## Limitations

The Yorkshire Wildlife Trust is unable to maintain a constant presence on nature reserves due to limited staff resources. The data collected are therefore likely to represent an underestimate of the number of damage and disturbance incidents, especially those which may be undetectable after the incident has occurred, such as disturbance of wildlife by people and dogs. The results of this analysis must therefore be used cautiously, especially in relation to mitigation for housing schemes. In these cases, detailed visitor surveys of nature reserves will be

required to determine the likely impacts of any increased housing on specific sites and the scale of mitigation required.

## Results

Damages and disturbances were reported at 67 (71%) of the 94 nature reserves that were included in this analysis. This was limited to one type on many reserves but four or more types of disturbance were recorded from some reserves (12%). Table 1 details the 139 incidents by damage and disturbance type, distance and frequency category.

There was a significant negative relationship between the proximity of a nature reserve to a settlement and the frequency of damage and disturbance incidents (linear regression:  $n = 94$ ,  $df$

Table 1. Total number of damage and disturbance reports by distance category (sample size: 94 nature reserves; \* = one-off, \*\* = occasional, \*\*\* = frequent).

Damage and disturbance type	Number of reports for each distance category												Totals
	DC1 (26 reserves)			DC2 (16 reserves)			DC3 (20 reserves)			DC4 (32 reserves)			
	*	**	***	*	**	***	*	**	***	*	**	***	
Litter and fly-tipping	3	8	9	0	5	1	1	4	3	4	2	1	41
Damage and disturbance by dogs and other domestic animals	1	6	9	0	4	2	1	3	2	1	5	0	34
Anti-social behaviour	2	5	5	1	6	0	0	4	1	3	0	0	27
Theft and destruction of wildlife and property	3	5	6	2	3	0	1	3	0	1	1	0	25
Damage by vehicles	1	3	1	1	4	0	0	0	1	0	1	0	12
Totals	67			29			24			19			139

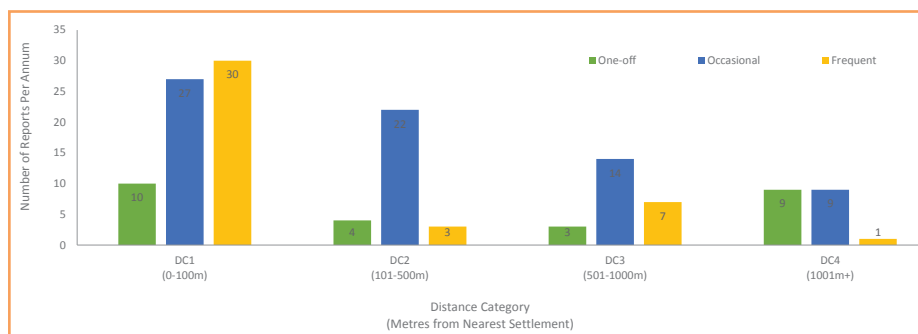


Figure 3. Total number of reports of all types of damage and disturbance for nature reserves in each distance category (139 incidents across 94 nature reserves).

1,92,  $P < 0.0001$ ). The greatest frequency of incidents occurred at YWT reserves within 100 m of a settlement, which was true for all disturbance types apart from damage by vehicles (Figure 2).

Damages and disturbances reported as *frequent* (>1 per month) were highest at DC1 reserves (within 100 m of a settlement), accounting for 73% of all incidents described as *frequently* occurring (Figure 3). Litter and fly-tipping was the most recurrent type of damage and disturbance at YWT nature reserves (30%), with damage by dogs and other domestic animals occurring at similar levels (24%). Anti-social behaviour (19%) and theft and destruction of wildlife and property (18%) were less common and damage by vehicles (9%) was the least recorded damage type. (Table 1, Figure 4)

## 1. Litter and fly-tipping

Reports of litter and fly-tipping show that it is the most persistent damage type faced by YWT. Of the 41 reports of litter and fly-tipping, over 80% were described as either *occasional* or *frequent*. Most incidents of littering and fly tipping occurred on nature

reserves in DC1, accounting for 49% of the total number of reports, and the highest frequency score (Table 1, Figure 2). There is a clear decline in frequency score (62%) from DC1 to DC2 reserves.

Managing litter and fly-tipping occupies a great deal of YWT's time and involves dealing with an array of waste including general litter, unwanted furniture, building rubble and tyres. The build-up of litter on nature reserves leads to wide-ranging negative consequences including habitat degradation, chemical pollution and injury/death of wildlife.

The data collected in this study suggests that littering is especially problematic at reserves surrounded by residential areas. Anecdotal evidence from reserve officers also suggest that it is especially problematic around schools. Reserves located further away from settlements still suffer from litter and fly-tipping but reports tend to be of one-off incidents involving larger items (such as furniture fly tipping, Figure 5) rather than general dropping of litter (Figure 2).

## 2. Damage and disturbance by dogs and other domestic animals

This type of damage mostly concerns dog fouling on nature reserves but also includes other illegal activity such as sheep worrying by dogs and fly grazing by horses. The impact of cat predation on wildlife has not been taken into account in this study, due to practical difficulties associated with data collection. Nevertheless, this is likely to occur on YWT nature reserves, as highlighted in studies by The Mammal Society (Wood *et al.* 2003). It will be more prevalent in nature reserves close to settlements and must be given consideration during the determination of planning applications.

Those nature reserves closest to settlements experienced the highest frequency of damage relating to domestic animals, as dog owners are more likely to use reserves close to their homes for dog exercising. Fifty-eight per cent of all reserves within 100 m of a settlement (DC1) reported frequent or occasional damage of this type, compared with just 16% of DC4 reserves (>1 km away from settlement) (Table 1). The lower frequency of damage by dogs on DC4 reserves could be due to fewer people within close proximity of the nature reserves.

Although YWT allows dogs on many of its reserves, dog fouling is illegal and the unpleasant task of clearing up is too often left to YWT staff. Dog waste in large amounts is known to alter the chemical composition of soil, which leads to changes in the plant species which occur there, and may have significant impacts on the quality of grassland habitats (Bonner and Agnew 1983, Taylor *et al.* 2005).

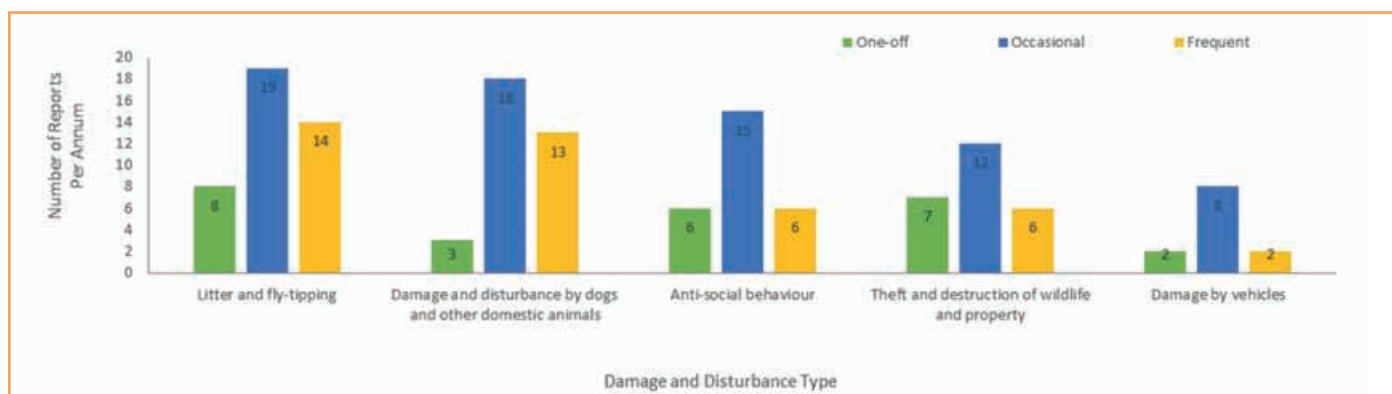


Figure 4. Total number of reports of each type of damage and disturbance (139 incidents across 94 nature reserves).





Figure 5. Fly tipping often consists of large pieces of furniture that are difficult or costly for people to dispose of, such as this armchair fly tipped on a SSSI meadow. Photo credit Jim Horsfall.

Dogs are often let off leads on nature reserves, contrary to YWT signposted instruction. Dogs therefore stray off paths, which are positioned to avoid sensitive wildlife areas, resulting in damage to habitats and disturbance of animals, which can have significant negative impacts on breeding and survival rates. Furthermore, serious incidents of dogs attacking sheep has led to the curtailment of sheep grazing on nature reserves, and the loss of biodiversity enhancement from conservation grazing schemes. This leads to serious issues for YWT where grazing is specified in legal management agreements.

### 3. Anti-social behaviour

Anti-social behaviour on reserves encompasses a wide range of activities including graffiti, camping and barbecues (Figure 6), which can be hugely damaging to habitats. Whilst graffiti may not have significant wildlife implications, it does reduce a reserve's attractiveness to visitors and their sense of safety. Removing graffiti is therefore an essential and recurring task at many reserves.

There is a clear link between the level of anti-social activity at nature reserves and the proximity of reserves to settlements (Figure 2). Forty-six per cent of DC1 reserves were subject to anti-social behaviour compared to just 25% of DC3 reserves and 9% of DC4 reserves (Table 1). This behaviour peaks during the summer

months when parties and barbecues become a regular occurrence at many reserves within 500 m of the nearest settlement (Figure 2). More secluded reserves are less prone to such activities.

### 4. Theft and destruction of wildlife and property

This type of damage can be very costly and proximity to settlements has a large bearing on how heavily a reserve is impacted. It includes the cutting down and burning of trees and plants, destruction and theft of gates and fences (Figure 7), damage to hides and spraying of herbicides on plants. Destruction of trees and habitats can have long-lasting impacts on nature reserves.

Reports of this type were greatest at DC1 reserves, accounting for 54% of all

reports of theft and destruction (Table 1). Frequent incidents were only reported from nature reserves within 100 m of the nearest settlement and became rarer the further from a settlement a reserve was located. Residential areas in the immediate proximity of a reserve are linked to the likelihood of forced access onto Trust land through the removal of fencing and gates.

### 5. Damage by vehicles

Damage by vehicles is the least frequent disturbance at YWT's nature reserves. Despite this, incidents can be amongst the most damaging with burnt-out cars (Figure 8) and vehicle use inflicting long-term and potentially irreversible damage to rare habitats such as salt marsh and MG4 grassland (Figure 9).



Figure 6. Campfire damage at woodland nature reserve. Photo credit Jim Horsfall.





Figure 7. Newly installed gates are frequently the target of thieves, often to allow illegal access for vehicles or livestock or to install the gate on private property. Photo credit Jim Horsfall.



Figure 8. Burnt-out car abandoned on a grassland SSSI nature reserve.  
Photo credit Jim Horsfall.



Figure 9. Tyre marks caused by off-road driving on a sensitive saltmarsh nature reserve.  
Photo credit Andrew Gibson.

Interestingly, damage by vehicles is the only type of damage and disturbance not correlated directly with distance category. Reports were greatest at reserves between 100 and 500 m from the nearest settlement (DC2: 42% of the total number of incidents, Table 1). Reserves over 500 m from the nearest settlement were subject to lower frequencies of damage by vehicles and reserves furthest from a settlement rarely reported this as a problem (DC4: 8% of total damage by vehicles reports).

### The way forward

This analysis has highlighted that the proximity of a nature reserve to the nearest settlement can be a key predictor of the frequency of damage and disturbance likely to arise. Each of the five types of damage identified generally occurs more frequently the closer the reserve is to a settlement. This provides evidence that nature reserves within 100 m of settlements are vulnerable compared to secluded reserves located over 1 km from the nearest settlement. Although these results are not surprising, they nevertheless raise important questions. With biodiversity in the UK in long term decline (HM Government 2011) and development pressures to deliver increased housing numbers (Department for Communities and Local Government 2017), it is crucial that impacts are recognised and solutions sought. Protecting nature reserves from damage should be a planning priority, whilst at the same time the responsible public use of green spaces should be encouraged in order for communities to benefit from the numerous health and wellbeing benefits that they provide.

In this study, all but one type of damage and disturbance decreased between DC1 and DC2 reserves. The first step in the planning process should therefore be to locate new housing developments at least 100 m from reserves, and ideally more than 500 m away. Where this is not possible, the establishment of an ecological buffer, or 'eco-zone', between housing developments and nature reserves could help to reduce the likelihood of anti-social incidents, littering and dog fouling on reserves. Ideally, the 'eco-zone' should be provided within the development site boundary with its creation and management funded by the housing developer with ample space designated for various recreational activities.

Such an approach is taken around the Thames Basin Heath Special Protection Area (SPA) through the creation of SANGS – Suitable Alternative Natural Green Spaces which divert recreational disturbance pressures away from sensitive bird habitats, avoiding bird disturbance incidents (Thompson 2015). For SANGS to be effective they must be more attractive to users than the nearby nature reserve or Special Protected Area, and the careful design of these areas is important in deterring damage incidents.

Education and engagement with local residents is essential in the effort to promote the responsible use of nature reserves and reduce impacts such as dog fouling and anti-social behaviour. YWT offers free membership for residents of new housing schemes to encourage residents to connect with and value the wildlife surrounding their new home. Nature reserve supporter groups ('Friends of' groups) can also be an important tool in reducing damage and disturbance incidents through creating a sense of community ownership over reserves and fostering community cohesion. Associated volunteering and outreach events provide health and wellbeing benefits through physical activity, connecting with nature and meeting neighbours.

The change in land use to accommodate new housing poses a significant risk to nature reserves nationally. Proper consideration of impacts along with sensitive siting and design of housing developments can go a long way towards

avoiding damage and disturbances, and the provision of natural greenspaces within development sites can provide long-term benefits for communities. This is the policy adopted by The Wildlife Trust nationally. At present, planning policy offers limited protection for non-statutory sites, with no specific mention in the National Planning Policy Framework, therefore it can be difficult for NGOs to negotiate adequate mitigation to protect their sites from additional housing. Better protection of non-statutory sites through national and local policy is essential to ensure that new housing sites are properly delivered for both wildlife and communities. Improved facilities such as dog waste bins, interpretation boards and footpaths could also help to promote responsible usage of nature reserves, and help to ensure that reserves remain rich in biodiversity.

### Note

The full report on which this article is based is available from the authors on request (lauren.garside@ywt.org.uk).

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### About the Authors



Fin Rylatt is a Conservation Planning and Policy Trainee at Yorkshire Wildlife Trust. Fin is a human geography graduate from the University of Sheffield and his role with

Yorkshire Wildlife Trust is his first within the conservation sector.

#### Contact Fin at:

[finlay.rylatt@ywt.org.uk](mailto:finlay.rylatt@ywt.org.uk)

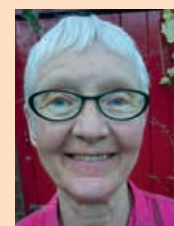


Lauren Garside is a Conservation Planning Officer for Yorkshire Wildlife Trust where she advises on the impacts of development on Yorkshire's wildlife

and natural habitats. She provides ecological advice on a wide range of development control applications and LPA policies.

#### Contact Lauren at:

[lauren.garside@ywt.org.uk](mailto:lauren.garside@ywt.org.uk)



Sara Robin is a Conservation officer at the Yorkshire Wildlife Trust, commenting on planning applications in North Yorkshire. She has a particular interest in mitigation

for developments, the impacts of development on wildlife sites, and sustainable transport.

#### Contact Sara at:

[sara.robin@ywt.org.uk](mailto:sara.robin@ywt.org.uk)



# Featured CIEEM Training Events

## Making the most of BREEAM and Home Quality Mark

**London, 5 October**

*Trainers: Nick Betson CEnv MCIEEM and Max Wade CEcol CEnv FCIEEM*

An introduction to the ecological component of BREEAM and how to get the most from it. Sessions include worked examples of how BREEAM/HQM/Code for Sustainable Homes criteria can be used for maximum ecological benefit.

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**Buxton, 26-27 September 2017**

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### NEW

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This course is aimed at anyone required or wanting to deliver short talks or guided walks. Sessions include talk structure and content, planning a guided walk route, ensuring audience engagement and safety, use of MS PowerPoint and Prezi for presentations as well as how to use projectors and other technology. Training is primarily classroom based, with outdoor sessions to demonstrate and practice guided walks.

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## Intermediate QGIS for Ecologists and Environmental Practitioners

**Co. Westmeath, 23-24 October 2017**

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### NEW

This two-day course focuses on using QGIS as a tool for data analysis and producing more complex maps accurately and efficiently. Pitched at intermediate level, the course offers ideal progression from our entry level QGIS training and includes some pre-event work to help ensure all delegates have a similar level of QGIS knowledge prior to attendance.

## QGIS for Ecologists and Conservation Practitioners

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### NEW LOCATION

Over two days, delegates will learn how to use free, open source, Quantum GIS software to access a variety of environmental data sources.

## Ecological Modelling

**Cardiff, 1 December 2017**

*Trainers: James Vafidis MCIEEM and Robert Thomas*

This course covers the fundamentals of modelling, and offers a solid foundation

for understanding the principles and applications of ecological modelling as well as insights into evaluating and interpreting models from other ecologists

## Habitats Regulations Assessment (HRA) of Projects

**Swansea, 19 October 2017**

*Trainer: Caroline Chapman MCIEEM*

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.

## Developing Skills in Appropriate Assessment

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### NEW

Aimed at those with some experience of Appropriate Assessment, this training offers the opportunity to work with others to produce and present an outline Appropriate Assessment relating to projects based at Bull Island. Each project will challenge delegates in respect of the SPA and SAC designations on site and explore issues of retention and substitute consent.

## Habitats Regulations Appraisal (HRA) Scotland

**Inverness, 21 November 2017**

*Trainer: Sue Bell CEcol CEnv FCIEEM*

Designed specifically for anyone working in Scotland, this training provides a thorough understanding of the overall purpose, process and methodology of Habitats Regulations Appraisal, including Appropriate Assessment and the roles of different organisations and individuals in the process. This training is aimed at beginner/intermediate level.

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# An Alternative Approach to the Reporting of Categories of Significant Residual Ecological Effects in Environmental Impact Assessment

**John Box** CEcol CEnv FCIEEM

**Mike Dean** CEcol CEnv MCIEEM  
Director, MD Ecology Limited

Keywords: EcIA, EIA, significant effects

**Matt Oakley** CEnv MCIEEM  
Principal Ecologist, Atkins Ltd.

Practitioners may be required to use a matrix to determine the significance of residual effects in order to achieve consistency with other disciplines in an Environmental Statement. These matrices typically rank importance (or value) of an affected feature and the 'magnitude' of the impact to derive categories of significant residual effects. The CIEEM Guidelines for ecological impact assessment avoid and discourage the use of such matrices because the categories involved are subjective and value-based rather than evidence-based and often establish arbitrary transitions from one category to another. This paper sets out an alternative approach for categorising significant residual effects if required in Environmental Impact Assessment without using a matrix. It should not be used routinely; only where specifically required.

## Introduction

The CIEEM guidelines on ecological impact assessment (EcIA) (IEEM 2010, CIEEM 2016) explain the process for determining the significance of effects due to impacts on important ecological features. Significance is a concept related to the weight that should be attached to effects when decisions are made by a competent authority (an organisation or individual who is responsible for determining an application for consent for a project). For the purpose of EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for important ecological features or for biodiversity in general. Conservation objectives may be

specific (e.g. for a designated site), or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of geographical scales from international to local. Professional judgement is used to decide on the significance of the effects based on a scientifically rigorous assessment of the available data and an understanding of how a specific feature is likely to be affected by the activities associated with the proposed project. In EcIA, it is only essential to assess and report significant residual effects (those that remain after mitigation measures have been taken into account).

Those undertaking EcIAs in Environmental Impact Assessments (EIAs) may be required to use a 'matrix approach' by a client, project manager or EIA coordinator to assign significant residual effects to categories (e.g. major, moderate, minor). Such an approach typically uses a matrix to combine the importance (or value) of a feature and the 'magnitude' of the impact on the feature (which can be negative or positive) to generate a set of categories of significant residual effects. Table 1 gives an example of such a matrix. The Table includes 'negligible' importance, 'negligible' magnitude and 'neutral' significant residual effect as such terms may be used in EIAs.

A matrix approach is commonly used in EIA by disciplines other than ecology. In many cases, its use is required to ensure consistency across all the topics of an Environmental Statement (ES).

A benchmark for international good practice is Performance Standard 6 of the International Finance Corporation (International Finance Corporation 2012), which specifies the requirements to be met in respect of biodiversity conservation and the sustainable management of living natural resources. This standard focuses on required outcomes for developments affecting natural or 'critical' habitat for threatened species and emphasises achievement of 'net gain' outcomes through appropriate implementation of the mitigation hierarchy. This is required

## Feature Article: Alternative Approach to Reporting Significant Residual Effects in EIA (contd)

**Table 1. Example of a matrix approach for determining categories of significant residual effects**

		'Magnitude' of impact on feature			
		High	Medium	Low	Negligible
Importance (or value) of feature	High	<i>Major</i>	<i>Major</i>	<i>Moderate</i>	<i>Neutral</i>
	Medium	<i>Major</i>	<i>Moderate</i>	<i>Minor</i>	<i>Neutral</i>
	Low	<i>Moderate</i>	<i>Minor</i>	<i>Minor</i>	<i>Neutral</i>
	Negligible	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>

regardless of impact magnitude or significance for any residual effect on important biodiversity features. There is therefore nothing in the International Finance Corporation guidance or performance standards requiring the use of such matrices or ranking of significance. Instead the emphasis is on evidence-based adaptive management of risks.

The CIEEM EclA guidelines avoid and discourage the use of the matrix approach (CIEEM 2016, paras 5.37 & 5.38), in common with the original EclA guidelines (IEEM 2006, paras 4.52 to 4.54), as it is considered to have a number of disadvantages for assessing the significance of residual effects. These are set out in Box 1.

### An alternative approach for determining categories of significant residual effects

This paper sets out an approach in Table 2 for reporting categories for the significant residual effects generated by application of the CIEEM EclA guidelines without using the matrix format (as shown in Table 1) for situations where practitioners are required to use such an approach in an EIA. These categories of significance of residual effect should only be used following completion of the assessment of whether the residual effects are significant or not in terms of conservation objectives or conservation status with reference to an appropriate geographical scale. This table should be used to guide mitigation action at the appropriate geographical scale.

#### Box 1: Disadvantages of a matrix for assessing the significance of residual effects

1. The matrix approach is based on the importance (or value) of an ecological feature and the magnitude of the impact on the feature. The importance and the magnitude of the impact are assigned by those undertaking the EclA to categories such as 'high', 'medium', 'low' and 'negligible'. This use of such categories is either subjectively based on experience or quasi-objectively defined using a set of definitions generated by the EclA team. Such categories are value-based rather than evidence-based. There are no agreed definitions of such categories of 'magnitude' or 'importance'.
2. In the context of such a matrix, the term 'magnitude' covers different characteristics of an impact such as extent, duration, frequency, timing and reversibility as well as magnitude in the sense of size, amount, intensity and volume (CIEEM 2016, paras 5.9 to 5.19). The use of 'magnitude' as an aggregate term in a matrix blurs the distinction between the various separate characteristics of an impact and thus favours a subjective interpretation. The matrix approach obscures the ecological detail needed to understand the actual outcome.
3. The significance of the residual effects is derived from the intersections between the 'magnitude' and importance (value) axes in the matrix using categories such as 'major', 'moderate', 'minor' and 'neutral'. These are subjective terms, often with arbitrarily defined thresholds, that will mean different things to different professionals and to the public. One ecologist's 'minor' significant residual effect may not mean the same as the same term used by another professional, especially if the second professional is in a different discipline to ecology. Competent authorities using the results from such a matrix must distinguish between, for example, an effect of moderate significance against one of minor significance without any guidance other than an intuitive understanding of these terms, which are inevitably subject to individual interpretation. The EclA may add a commentary on the significant effects of a project and the different categories of significance but the headline categorisation will influence those making the decision about a project.
4. A matrix approach such as that shown in Table 1 can equate the significance of the effect of a 'low' impact on an ecological feature of 'high' importance with a 'high' impact on a feature of 'low' importance. Inconsequential impacts on a SSSI, for example, could be assessed as being of 'moderate' significance as could the total loss of a locally important population of a species of principal importance for the conservation of biodiversity or a species listed in the local Biodiversity Action Plan (a 'high' impact on a feature of 'low' importance). In some matrices, even 'high' impacts on features of 'low' importance can be assessed as being of 'minor' significance. This can serve to downplay or mask effects on locally important features (Figures 1, 2 and 3). Consequently, such a matrix does not guide the applicant or the decision-maker to identify and secure appropriate and proportionate mitigation.
5. Cumulative effects are very difficult to assess using a matrix approach. For example, the Standards for Highways (2008) guidance for the assessment and management of environmental effects, which is based on a matrix approach, has a separate section on determining the significance of cumulative effects that comes after the matrix of significance of residual effects and uses different terms.

Table 2. Categories of significant residual effects

Geographical scale at which the residual effect is assessed as being significant following the CIEEM EclA guidelines	Category of significant residual effect
International, European, national or regional	Major
Regional, metropolitan, county, vice-county or other local authority-wide area	Moderate
Local	Minor



Determining a regional geographical scale for the assessment of residual effects can be problematic as there is often a lack of contextual information. The term 'regional' is often poorly defined and therefore subject to different interpretations.

Figure 1. A pond used by breeding birds and amphibians with associated flora and fauna; the pond is of importance in a local context. Photo credit Mike Dean.

Figure 2. A species-rich double hedgerow of importance in a local context. Photo credit Mike Dean.

Figure 3. Pasture with many anthills of the yellow meadow ant *Lasius flavus* that is of importance in a local context. Inset is a section through an anthill. Photo credit John Box.



For these reasons, due consideration must be given to how the geographic context of the regional scale is defined, and how this assessment has been made. In some cases, the scale at which the residual effect on a feature is assessed may be more comparable with effects at a county scale rather than a national scale and the use of a 'moderate' category of significant residual effect may be more appropriate together with appropriate justification.

This alternative approach for the determination of categories of significant residual effect goes further than the CIEEM EclA guidelines. It should not be used routinely, but only where those undertaking the assessment are required by the client or EIA co-ordinator to produce outcomes which are consistent with the categories of significant residual effects used by other disciplines, normally as part of an Environmental Statement. This approach may not be considered acceptable where existing specific guidance exists (e.g. highway schemes where Standards for Highways (2008, 2010) sets out the assessment methodology).

Both the determination of significant residual effects using the CIEEM EclA guidelines and the category of significant residual effect derived from Table 2 should be presented in the ecology chapter of an Environmental Statement. In other words, the ecology chapter of the Environment Statement could report that the assessment had followed the methodology provided by CIEEM (2016) to derive a significant residual effect at, for example, a county scale with appropriate justification for this conclusion. It would also state that this falls into the moderate category of significant residual effect following the additional methodology set out in the relevant section of the ecology chapter (in this case, Table 2) as required to ensure consistency across all the topics of the Environmental Statement (with a cross-reference to any overall assessment methodology chapter in the Environmental Statement).

This approach has been developed particularly with EIA projects in mind where other members of multidisciplinary project teams are using a matrix (for example, Table 1) to report on significance of residual effects. However, it could be used for EclAs undertaken in relation to a non-EIA project



## Feature Article: Alternative Approach to Reporting Significant Residual Effects in EIA (contd)

where a client requires the ecologist to use the matrix approach to ensure consistency with other environmental disciplines (see para 1.4 of the EclA guidelines, CIEEM 2016). Normally, it is expected that EclAs would follow the CIEEM EclA guidelines and not use such a matrix: the approach set out in Table 2 would not therefore be needed.

Practitioners should strongly resist any treatment of significant residual effects assigned to the category of 'minor' significance in Table 2 in a different way to residual effects in a 'major' or 'moderate' category, for example by not reporting 'minor' significant residual effects in the Environmental Statement or EclA. This would downplay or mask residual effects that are significant at the local scale. This could lead to a failure to identify, design and implement adequate mitigation that is appropriate at that scale. For example, the loss of a locally important population of a species occurring on very few remaining sites (e.g. restricted local distribution) (Figure 3) or the loss of a species-rich hedgerow that might be significant at a local scale (Figure 2). In both cases, the competent authority may quite reasonably seek proportionate mitigation through a planning condition or obligation, i.e. to make an otherwise unacceptable development acceptable (see Annex A of BS42020:2013, British Standards Institution 2013).

### Conclusion

The approach set out in this paper is fundamentally different to that used by other EIA disciplines to determine categories of significant residual effects in that it is not based on a matrix of importance (or value) and 'magnitude'. This should be made clear in the description of assessment methods in the ecology chapter of the Environmental Statement or the EclA and suitably cross-referenced in the assessment methods section.

When using categories of significant residual effects in an EclA, it is very important to make a clear distinction between evidence-based and value-based judgements so that competent authorities and stakeholders are aware of the level of subjective evaluation and professional judgement that has been used. Spurious quantification should be avoided in which significance categories are used without clear evidence-based definitions of the criteria and thresholds that underpin them.

It is strongly recommended that use of this approach for reporting categories for the significant residual effects generated by application of the CIEEM EclA guidelines is agreed with the co-ordinator for the EIA or other environmental assessment, the planning consultant, the client and, ideally, the competent authority.

### About the Authors



John has long been interested in EclA and was part of the working group that produced the 2006 EclA Guidelines and chaired the technical review group that generated the revised 2016 EclA Guidelines. Currently he is involved in the amalgamation of the terrestrial and marine EclA guidelines that is due to be published by CIEEM in 2017.

#### Contact John at:

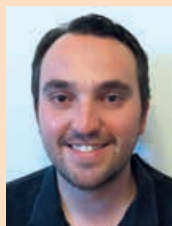
john.box@knowlebox.co.uk



Mike is an ecological consultant and has been undertaking ecological impact assessments for almost 20 years. He was part of the technical review group which revised CIEEM's EclA Guidelines, leading to their publication in 2016. Mike runs workshops on ecological impact assessment as part of CIEEM's Professional Development Programme, and presented at CIEEM's Spring conference and a joint CIEEM/EMA webinar in 2016 on this topic.

#### Contact Mike at:

mike@mdecology.co.uk



Matt has led the ecological input to Environmental Statements for a range of major infrastructure projects in the UK and internationally, including most recently East West Rail Phase 2. Matt has authored Atkins ecological impact assessment reporting templates and has delivered a series of ecological impact assessment training courses to the Atkins ecology team.

#### Contact Matt at:

matt.oakley@atkinsglobal.com

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# CIEEM Policy Activities and Engagement

**Jason Reeves MCIEEM**

Policy and Communications Manager, CIEEM

Understandably, a large portion of our policy work has revolved around Brexit and the implications for members and the ecology and environmental management sector. If you haven't already done so, you can read more about our Brexit activities on page 9.

We have however been active in other policy areas as well.

## UK General Election 2017

In the run up to the general election, we wrote to all of the political parties<sup>1</sup> asking them to include in their election manifestos a commitment to maintaining – or better yet enhancing – the protection of the natural environment following the UK leaving the EU. We subsequently wrote a brief analysis of the environmental content of each manifesto, which you can read on the CIEEM website<sup>2</sup>. It is safe to say that the Liberal Democrat manifesto is far ahead of the other main parties with regards to the environment.

CIEEM President, Steph Wray CEcol CEnv FCIEEM, followed up the election result – a loss of a majority for the Conservative Party – with her views on the uncertainty created by the result<sup>3</sup>.

Since the election, a new Environment Secretary has been appointed in the form of Michael Gove. Michael Gove is the highest profile politician to take up the post in many years and this is an opportunity to take advantage of the media and other coverage that he will get to push environmental issues further up the agenda in Westminster. George Eustice, Thérèse Coffey and Lord Gardiner of Kimble remain in post as the rest of the Defra ministerial team.

We followed up the election with a brief overview of the important issues for the environment in the Queen's speech<sup>4</sup>. This included the inclusion of the Repeal Bill, Agriculture Bill, Fisheries Bill, HS2 extension from Birmingham to Crewe, and the announcement of additional £500 million per year investment in England's technical education system.

## New Environment Minister

As noted above, Michael Gove has been appointed as Environment Secretary – replacing Andrea Leadsom.

He has given a number of public addresses since taking office, the most noteworthy being his address at WWF's Woking headquarters on 21 July 2017<sup>5</sup>. This talk was billed as his first keynote speech as Secretary of State. CIEEM is pleased with the ambition proposed by Mr Gove, particularly with regards to not weakening EU protections, reforming agricultural subsidies so that public money pays for public benefits, emphasising the importance of science and evidence-based policy-making, being open to the benefits of new institutions (which other parts of government had previously dismissed), and his ambition for Defra's 25-Year Plan for the Environment.

There were however issues that were not addressed, including how environmental powers will be repatriated to the devolved administrations post-Brexit and how primary legislation in the form of a new Environment Act could safeguard environmental standards and protections from being weakened post-Brexit.

We have followed up the speech by writing to Mr Gove to offer our help (both individually and collectively with partners) with advice and suggestions on how to deliver his ambitions for the natural environment.

## Statutory Nature Conservation Bodies

The Institute has continued to strengthen our relationship with the SNCBs.

For example, we have met with Natural England representatives to discuss their strategic approach going forward and how CIEEM could play a bigger role in their ambition to move to a more landscape-based approach to conservation. We have also had initial discussions with NE representatives on the forthcoming reform of bat licensing.

We have met with senior staff at NRW and NPWS to develop better links in Wales and Ireland respectively, and continue to be engaged in Scotland as well.

## CIEEM speaking at external events

CIEEM President Stephanie Wray CEcol CEnv FCIEEM and CIEEM CEO Sally Hayns CEcol MCIEEM have both spoken at Westminster Energy, Environment and Transport Forum events. Stephanie spoke on 'The way forward for natural environment policy post-Brexit'<sup>6</sup> and Sally on 'Wildlife Law: Understanding Current Policy & Next Steps for Reform'<sup>7</sup>.

Stephanie also spoke at the Society for the Environment's World Environment Day event in June on 'Innovation, Partnership and the Value of Nature'.

### Further Information:

For more information on CIEEM's policy activities please see [www.cieem.net/policy](http://www.cieem.net/policy) or contact [policy@cieem.net](mailto:policy@cieem.net).

### Notes

1. <http://www.cieem.net/news/407/cieem-calls-for-environmental-commitments-in-election-manifestos>
2. <https://www.cieem.net/news/411/what-do-the-uk-election-manifestos-say-about-the-environment>
3. <https://www.cieem.net/news/412/cieem-president-responds-to-post-election-uncertainty>
4. <https://www.cieem.net/news/418/what-does-the-queens-speech-mean-for-the-natural-environment>
5. <https://www.cieem.net/news/424/michael-goveeys-green-brexits-speech>
6. <https://www.cieem.net/news/417/cieem-president-speaks-on-natural-environment-policy-post-brexits>
7. <https://www.cieem.net/news/422/cieem-ceo-speaks-on-natural-environment-law>



# CIEEM Celebrates Excellence in the Sector

**CIEEM**  
AWARDS

**Emma Downey**  
Marketing Officer, CIEEM

**Jason Reeves MCIEEM**  
Policy and Communications Manager, CIEEM

On Wednesday 21 June 2017, the impressive Drapers' Hall in London played host to a room full of excited, nervous and proud ecologists, environmental managers and project leaders. They were there to represent the ongoing inspirational work that they do for the profession, for biodiversity and for their stakeholders. The CIEEM Awards are the annual celebration of practical ecology and environmental management and continue to highlight fantastic projects, individuals and organisations that make such a difference to improving our natural environment.



Awards winners, finalists and attendees



Trophies ready to be presented to the Awards winners



Awards attendees enjoy the grandeur of The Drapers' Hall





Left to right: Baroness Barbara Young (CIEEM Patron and Awards guest speaker), Stephanie Wray (CIEEM President), Des Thompson ((CIEEM Fellow and Awards host)), and Sally Hayns (CIEEM CEO)

CIEEM President, Stephanie Wray CEnv FCIEEM, started proceedings and introduced our guest speaker, Baroness Barbara Young. Baroness Young gave a captivating speech, discussing what will happen to UK wildlife law post-Brexit and the ambiguity and impacts around implementation. She summarised the thoughts of many in the room, insisting that there was plenty of opportunity for the sector to be excited about our role in shaping the future and using our valued expertise to communicate with parliament and to demand to be heard on what is of significance for the protection of our natural environment in the coming years. You can watch the video of her talk on CIEEM YouTube channel.

True to form, CIEEM Fellow Des Thompson delighted in his role as master of ceremonies, keeping the audience in anticipation and not allowing the particularly hot day to stifle the excitement of the Awards Presentation.

CIEEM would like to extend a very grateful 'thank you' to everyone who helped to make the 2017 Awards the most successful yet. This includes all of the Awards entrants, winners and finalists, but also those who continue to support

the Awards, and who recognise the importance of celebrating best practice in ecology and environmental management. We have to give a very special 'thank you' to our sponsors and judges, without whom the Awards simply would not happen.

### Best Practice – Large-Scale Practical Nature Conservation

**Winner:** Delamere Living Landscape – Cheshire Wildlife Trust and Forestry Commission

**Highly Commended:** Pearls in Peril – Scottish Natural Heritage

**Highly Commended:** The Arun and Rother Connections – RSPB, Sussex Wildlife Trust, South Downs National Park Authority



Representatives from the Delamere Living Landscape project with Barbara Young (far left)

### Best Practice – Innovation

**Winner:** EcoReporter App – Network Rail

**Highly Commended:** Water & So Much More – Northumbrian Water Group

**Commended:** A338 Bournemouth Spur Road – Hanson UK, Dorset County Council Strategic Partnership



Octavia Neeves MCIEEM (right) with Barbara Young

### Best Practice – Knowledge Sharing

**Winner:** TomBio QGIS Plugin – Field Studies Council

**Highly Commended:** Mersey Gateway – AECOM, Merseylink, Mersey Gateway Environment Trust

**Highly Commended:** Inner Forth Landscape Project – Inner Forth Landscape Initiative

**Highly Commended:** Ecosystem Assessment and NCA profiling in Kachchh District – University of Greenwich, Gujarat Institute of Desert Ecology



Representatives from the Field Studies Council with Barbara Young (far right)



## Best Practice – Stakeholder Engagement

**Winner:** Mersey Gateway  
– AECOM, Merseylink, Mersey Gateway Environment Trust

**Highly Commended:**

The Inner Forth Landscape Project  
– Inner Forth Landscape Initiative

**Highly Commended:**

Sharing Good Practice Programme  
– Scottish Natural Heritage



Representatives from the Mersey Gateway project with Barbara Young (centre)

## NGO Impact Award

**Winner:** Birmingham and Black Country Nature Improvement Area  
– The Wildlife Trust for Birmingham and the Black Country

**Highly Commended:**

National Biodiversity Network Atlas  
– National Biodiversity Network

**Highly Commended:** Woodberry

Wetlands – London Wildlife Trust



Representatives from the Birmingham and Black Country NIA with representatives from Awards sponsor MFL

Sponsored by:  

## Promising Professional Award

**Winner:** Rachel Bamford GradCIEEM

**Highly Commended:**

Rachael Maddison GradCIEEM



Rachel Bamford (left) and Rachael Maddison (centre), with Jon Riley MCIEEM from The Ecology Consultancy

Sponsored by: 

## Corporate Achievement Award

**Winner:** Free Range Egg Tree Planting Scheme – The Lakes Free Range Egg Company



David and Helen Brass from The Lakes Free Range Egg Company

## Student Project Award

**Winner:** Jacob Willmore

**Highly Commended:** Anna Spence



Jacob Willmore (centre) with Katie Shilcock from TEP (left) and Barbara Young (right)

Sponsored by:  

## In Practice Award

**Winner:** *An Innovative Approach to Landscape-Scale Peatland Restoration* by Rachel Short MCIEEM and Peter Robson CEnv MCIEEM (published September 2016)

**Highly Commended:** *The Case for High-Density Compact Cities* by Lincoln Garland CEnv MCIEEM (published June 2016)

**Highly Commended:** *Evidence of Benefit to Breeding Birds from Blanket Bog Restoration at Dove Stone in the Peak District National Park* by Geoff Carr CEnv MCIEEM and Dave O'Hara (published September 2016)



Authors Rachel (centre) and Peter (right), with Ian Crossley from Greenhouse Graphics

Sponsored by: 



## Members' Award

**Winner:** Philip Perrin CEnv MCIEEM

**Highly Commended:**

John Haddow MCIEEM



Philip (left) and John (right), with Fran Tattersall from Wildcare

Sponsored by:  **Wildcare**  
Nationwide Ecology Supplies

## CIEEM Medal

The CIEEM Medal is the Chartered Institute's highest accolade and is awarded annually in recognition of an outstanding single or life-long contribution to the field of ecology and environmental management. This year the Medal has been awarded to Professor **Sir John Lawton**, who will be presented with the award at the CIEEM Autumn Conference in November in Manchester.



Professor Sir John Lawton FRS is the recipient of the 2017 CIEEM Medal

## Sponsorship Statements

### Wildcare

Wildcare were delighted to show our support for the ecology industry by sponsoring the CIEEM Members' Award.

As suppliers to the UK and Ireland's ecologists we are continuously impressed by the passion that our customers have for the natural world, and their dedication to protecting and enhancing it. CIEEM members' professionalism shines through in both the work they carry out, and in their expertise.

We are therefore very proud to be able to work with CIEEM to help celebrate the achievements of the nominees for the Members Award.

### MFL

The work done by CIEEM and its members has great importance to the natural environment, and as a key supporter for over 20 years MFL was delighted to have played our small part in celebrating the success of projects large and small at the 2017 Awards. Our congratulations go out to all those involved in this year's event.

We look forward to working with CIEEM and its members now and in the future.

### Greenhouse

Greenhouse has sponsored the CIEEM Awards for the last four years. The event fits perfectly with our sustainability ethos and being able to support such worthy projects is a great honour. The Awards event has always been superbly organised and hosted at first class venues, which reflects very well on all event stakeholders.

### TEP

TEP was proud to sponsor the 2017 Student Project Award at the Chartered Institute of Ecology and Environmental Management luncheon. With TEP's 20th birthday very much in our minds we were pleased to recognise the work of universities, students and researchers. We congratulate Jacob on his thesis and wish him well as he starts his ecological career.'

### The Ecology Consultancy

Deeply committed to professional development, The Ecology Consultancy has always focused efforts on nurturing talent within the industry and takes pride in the passion, professionalism, and reputation for excellence that its team (and past alumni) has shown within the field of ecology, whilst still also maintaining a unique and vibrant company ethos. With this focus on talent nurturing in mind, The Ecology Consultancy proudly supported the 2017 CIEEM awards by sponsoring The Promising Professional Award. An award that recognises achievements of those starting a career in ecological and environmental management and highlights the importance of ensuring excellent professional standards now and in the future.

For more information on the CIEEM Awards please visit  
[www.cieem.net/awards](http://www.cieem.net/awards) or contact [awards@cieem.net](mailto:awards@cieem.net).

# Where the Money Goes: How CIEEM Spends Your Money

Have you ever wondered what happens to your membership subscriptions and your course/conference fees? Every year CIEEM publishes its financial accounts as part of good governance. We are aware, however, that they may not be the most exciting read so we thought a short summary might be of interest.

Typically, the Institute's annual income and expenditure more or less balances out. Occasionally there is a loss (which may be a planned loss, as in 2016-17 when we needed to invest significantly in a new IT system). Occasionally there may be a surplus which is always welcome. Inevitably, the Institute does need to build up its financial reserves in order to protect it from unforeseen events and to have some capital it can draw on to invest in new products and services for members. As a non-profit organisation it is not CIEEM's intention to make money over and above what it needs to run effectively, to deliver a high standard of benefits, services and activities for members and to promote the profession. Diagram 1 (opposite) shows the sources of income for the 2016-17 financial year. Not surprisingly membership and chartership subscriptions are our main source of income and are the lifeblood of the Institute. This is typical of most professional bodies unless they have a large publishing arm. Professional development activities including conferences, training courses and degree accreditation are also very significant, accounting for over a third of our income.

Diagram 2 shows how we spent the money. Again, membership support and professional development activities, including careers work, dominate our expenditure, accounting for 50% of the total. Running the Secretariat including office costs, IT and financial management is the next biggest cost item. Professional standards activities include conducting

disciplinary investigations, producing or revising guidance and specific projects. The production and distribution of *In Practice*, media work and e-communications accounts for about 7% of the total. A similar total is spent on supporting Member Networks which are an excellent way of bringing members together to share their experiences. Policy work, engaging with governments and statutory bodies and responding to consultations is a key area of activity that, in these uncertain times, is becoming increasingly important. Finally, the Institute has to be well run and governance covers the necessary costs of bringing Governing Board members and Advisory Forum members together to ensure that CIEEM is managed effectively.

## The Future

In 2017-18 we have had to increase our planned expenditure on policy and communications work significantly as we respond to the challenges and opportunities arising from the UK's decision to leave the EU in 2019. We all know that this decision has huge consequences for the management of the environment and for employment opportunities. It is vital that our profession's voice is heard in government circles so we do have to invest heavily in this area. Providing more country-based support to members and responding to the increasing divergence of legislation and policy in devolved countries of the UK and in Ireland is a main focus of activity. Professional standards is another area where we are hoping to invest in more guidance and tools for our members to use.

Building up our financial reserves is a priority. Typically, a non-profit organisation should have 4-6 months of 'free' (i.e. uncommitted) reserves. CIEEM's reserves are typically at 3-4 months and, at certain times of the year when our

income is at its lowest, below that. We need to create a more resilient financial cushion in order to have money to invest in new projects that are non-income generating areas of activity.

The Governing Board is very aware of the financial challenges that our members experience and tries to keep the necessary subscription rates increases manageable and proportionate to the increased costs that the Institute faces. Balanced against this is the ambition to provide the same level of services, support and benefits to our members as other professional bodies with much larger membership bases (and therefore incomes). The Board is actively looking at ways to diversify our income and to create additional income streams so as to create those more resilient financial reserves without placing more burden on members. This is challenging but our members deserve the best services and support we can offer as we work together to advance our profession.

For more information  
please contact:  
[enquiries@cieem.net](mailto:enquiries@cieem.net)



Diagram 1. CIEEM Income 2016-2017

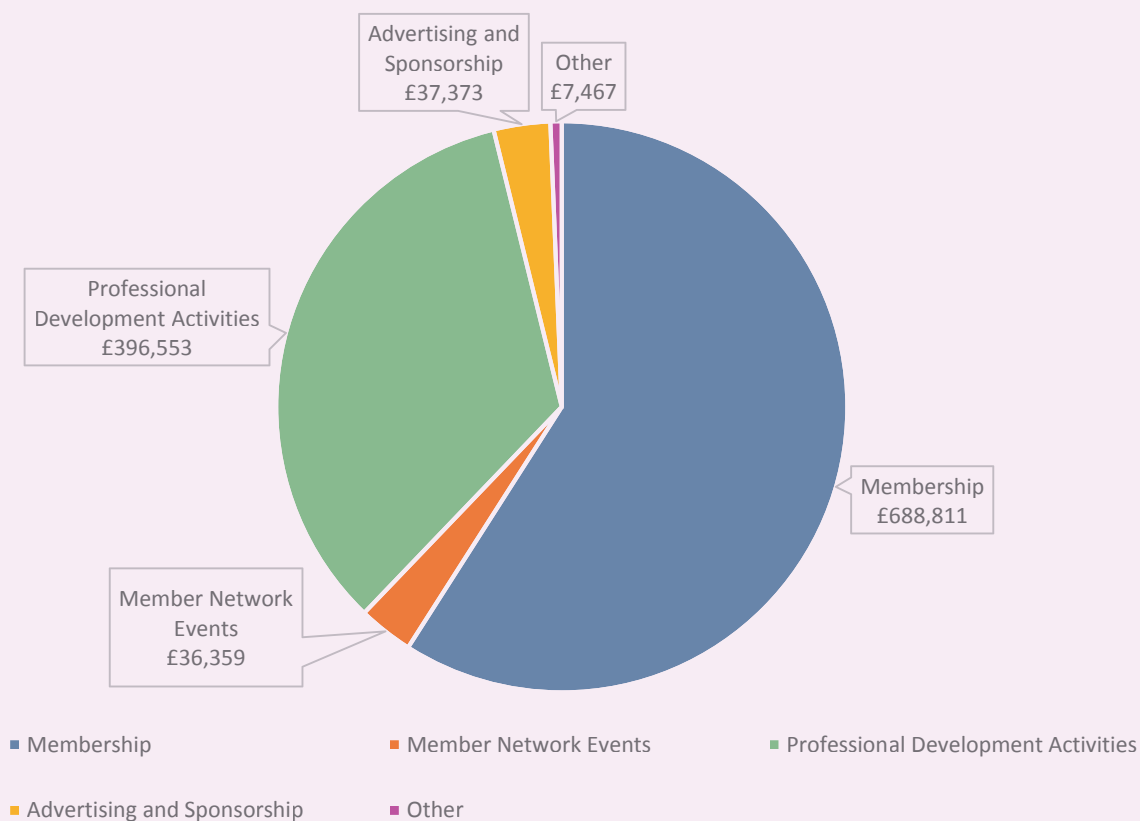
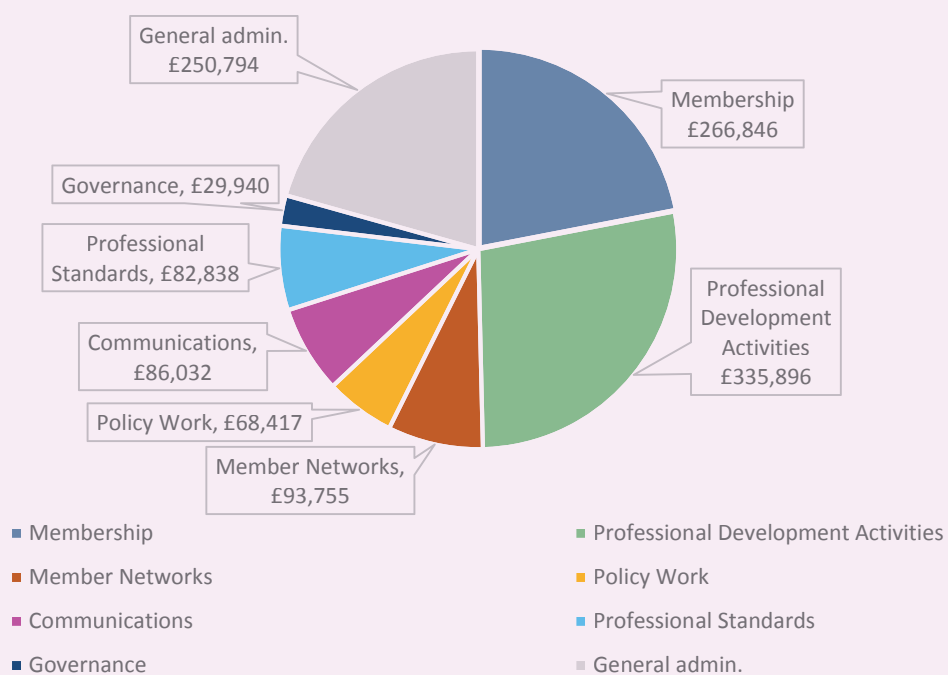


Diagram 2. CIEEM Expenditure 2016-2017



# CIEEM in Numbers

Unless otherwise stated, the below information represents the year April 2016 to March 2017.

## At a Glance

At the end of the March 2017, CIEEM members totalled **5,024**. There were **325** volunteers who contributed over **16,500** hours of valuable time each year to make CIEEM what it is – that represents roughly **8.5** FTEs! CIEEM has **17** members of staff.



## Membership

We welcomed **321** new members, including **185** new Student members. Our Membership Team processed an average of **11** new applications and **12** upgrades every week. Our Full member retention rate was a fantastic **97%**.

There has been an **87%** increase in Chartered Ecologists and a **24%** increase in applications for Chartership overall (Chartered Ecologist and Chartered Environmentalist).

We supported **53** members with abeyance agreements.

## Member Networks

There were **83** Member Network local events, organised by **150** Geographic Section volunteers, and which were attended by over **2,000** delegates. This was a brilliant opportunity for members to network and share experiences.



## Professional Practice

Our Professional Development team organised **130** training courses, attended by **1,699** delegates, alongside organising **7** conferences that were attended by **855** individuals. The average feedback for training events was **4.6** (scored out of 5, with 4 = 'very good' and 5 = 'excellent'). We also conducted **8** webinars, reaching an audience of over **2,000** people.

Since the online CPD Tool was launched **2,448** members have started using it and have logged a total of **271,440.5** hours of CPD.

CIEEM has now accredited a total of **21** degrees, of which **7** were accredited last year. There were **1,417** members registered on the Professional Directory.

We investigated **25** complaints against members.

## Policy and Communications

The Policy and Communications team posted **51** news items to the website, in addition to publishing **48** articles (in four editions of *In Practice*) and **24** e-newsletters.

On social media, we tweeted **365** times (we promise it wasn't one a day) to over **4,500** followers. And our more than **6,500** LinkedIn followers started over **120** new discussion threads.

On policy, we responded to **9** consultations and queries, and contributed to over **50** engagement events and meetings.



## Carbon Emissions

CIEEM activities produced **19.2** tonnes of CO<sub>2</sub> (from travel associated with Governance and meeting attendance, and from Secretariat energy consumption in Winchester). To help offset this, CIEEM donated **£200** to the Plantlife 'Important Plant Areas' project.



# A Membership Fit for the Future

**Stuart Parks**

Membership Manager, CIEEM

As CIEEM continues to grow as a professional body it attracts and welcomes members who work for an increasingly wide range of ecological and environmental employers in many varied roles, from surveying and analysing field data to providing high level input into environmental policy.

CIEEM's membership now also varies greatly in terms of professional experience and standing, from chief executives and directors of large organisations to students and apprentices who are developing their skills and experience at the earliest stages of their careers. The diversity of this unique mix of members is one of the Institute's core strengths and has enabled it to become the leading professional body representing ecologists and environmental managers in the UK, Ireland and abroad, raising the profile of the profession and promoting the highest standards of practice for the benefit of nature and society. Because we represent the views and expertise of an informed, engaged and committed body of members, CIEEM can also work with other professional bodies, learned societies, associations and NGOs to hold governments to account over the continued improvement and implementation of environmental legislation and policy and ensure that messages are clear and unequivocal in terms of what needs to be done to safeguard and enhance the environment. In addition, through its membership subscriptions, this growing body of like-minded individuals, all sharing a common commitment to act as custodians of the natural world, provides the crucial income that CIEEM needs to continue to deliver a growing range of membership

benefits; act as the professional face and voice of the sector; promote and enforce high standards of professional practice; influence legislation and policy pertinent to the profession; build and develop local, regional and national networks of professionals; and positively influence recruitment into the profession. (You can find out more about how CIEEM makes use of its income in the article on page 56.)

As members would expect, the Secretariat embraces a philosophy of continuous improvement and the membership team, with the invaluable support of the Membership Admissions Committee (MAC) (you can read more about MAC's work on page 62), has been focusing on how the Institute can continue to increase the size and diversity of its membership body. This work is addressing three main areas: making our processes more efficient; developing a better understanding of our members' needs; and improving the overall membership offer.

The introduction of the competence-assessed application process brought with it a fresh set of administrative challenges for Secretariat staff and MAC members alike. Similarly, a diverse membership body presents a diverse set of needs to be addressed. Our efforts so far have therefore been largely focused on simplification: making the application process as straightforward as we can for applicants without compromising standards, and as simple to administer as possible in order to speed up the process and increase the membership team's capacity to work on improving our relationships with members. Recent changes to the application and assessment processes have already started to show improvements in this area and we plan to take these processes online to make it even easier to apply for or upgrade membership.

This increased capacity, coupled with recent investment in a much-needed

replacement database, has provided us with an opportunity to work on activity beyond the application and membership renewal processes. Recently the membership team has been reviewing its performance and has agreed some customer service standards to make sure that we continue to provide a helpful, professional and responsive service to members and prospective members. In addition, new systems allow us to increase our efforts to find out more about our members and, more importantly, to do something with this information and identify where change may be needed. Through a number of new channels we will be gradually building an improved picture of members' expertise and interests, of their preferred communication styles, and of what members expect from their professional body. This work will inform a fundamental review of our membership offer at all grades, addressing issues such as services desired, support required and affordability, amongst others.

What we already know is that members value not only the sector and policy news that comes through their inboxes and letterboxes; the generously discounted training and conference fees; the professional recognition and sense of pride that comes with the award of post-nominals; the knowledge that they can put their membership into abeyance or defer payment when needed; that they can more easily plan their CPD through a dedicated online platform; and can promote their services through an online professional directory. We will continue to explore other potential benefits for members (for example our recently agreed partnership with Wildcare) to improve our offer still further.

In order to take advantage of a broader range of benefits and receive support, guidance and information that is most appropriate to them it is important that members are at a grade of membership that best reflects their level of competence and professional expertise. Not only does

this bring benefit through increased professional recognition, but it also allows members to take advantage of opportunities that arise within the sector as a growing number of agencies and organisations recognise CIEEM's Competency Framework. Even if you think you are not yet ready to upgrade your membership, it is a good idea for members to familiarise themselves with the Competency Framework and plan their future professional development with this in mind.

The Institute now has over 1,000 members with Chartered status who, along with Fellows, make up more than 20% of our total membership body. As we continue our efforts in schools, colleges and universities to attract the professional ecologists and environmental managers of the future, it is vital that we continue to recognise and reward our most experienced professionals through Chartership and Fellowship. Fellows and Chartered members are increasingly involved in key areas of policy development including, for example, helping to formulate our responses to issues raised by the outcome of the EU referendum. Work continues therefore to streamline the Chartership application processes

and promote the value of Chartership to a wider audience. We look forward to receiving more applications from eligible Full and Fellow members in the future.

So, as a member, how can you support our efforts to increase the size, diversity and influence of your membership body?

- i. If you are enjoying the benefits of membership and support CIEEM's mission, **please renew your subscription**. Membership subscriptions are due for renewal annually on 1 October and all members should by now have received a renewal notification outlining action required. Thank you for the continued support your subscription provides.
- ii. Make some time over the next 12 months to assess your skills and experience and consider whether this is reflected in your current grade of membership. If not, it could be time to **upgrade your membership**. If you have moved beyond Basic level competence, then an upgrade to Associate or even Full membership may well be overdue. If you have built significant experience over a number of years, perhaps it is time to consider **becoming a Chartered Ecologist or**

**Environmentalist?** Whatever path seems most appropriate for you, we will commit to making the process as straightforward as we can and will offer guidance throughout.

- iii. CIEEM members automatically become part of their regional or national network, which provides opportunities to meet fellow professionals at locally-organised events. You might even choose to represent both the sector and CIEEM at university careers events or through STEM activities in local schools. Whether through attending your first event or helping to organise one, is the next subscription year the one where you **get more involved?**
- iv. Alternatively, why not **volunteer with CIEEM** and help to shape the work of your Institute? CIEEM's standing committees play a vital role in reviewing, developing and delivering the Institute's strategic activity. In fact, volunteer members support every area of the Institute's work – perhaps you could too?

For more information  
please contact:  
[membership@cieem.net](mailto:membership@cieem.net)

# Lisa is chuffed with herself right now.



Chartered  
Institute of  
Ecology and  
Environmental  
Management

Lisa used the money she saved on CIEEM training to help buy that awesome camera she wanted and has finally captured the perfect shot of a barn owl.

Stay part of the leading professional membership body supporting ecologists and environmental managers and receive discounts on training, conferences and an extensive variety of ecology supplies and equipment.

Renew your membership by 1 October, visit: [www.cieem.net](http://www.cieem.net)



# Celebrating Our Volunteers

**Sally Hayns CEcol MCIEEM**  
Chief Executive Officer, CIEEM

Earlier this year I described our volunteers as the heartbeat of the Institute (and indeed of many professional bodies). As the Wordle diagram shows, we are fortunate to have members freely giving their time to support a high number of CIEEM activities on which the wider membership depends.

*I strongly believe in investing in our profession to promote excellence and ensure our profession is appropriately respected.*

The activities shown in the diagram are led by, or substantially supported by, over 350 volunteers who between them contribute a staggering 16,500 volunteer hours a year. That is equivalent to 8.5 members of staff! Of course, it is not only the time that volunteers donate that is so valuable. It is the wisdom, expertise, enthusiasm and creativity that they bring to CIEEM activities that is priceless.

Let us be clear. The work that these volunteers do benefits all of us, whether it be engaging in the governance of the Institute, organising events and activities for fellow members, judging our annual Awards, assessing applications for membership and chartership, dealing

*Participating [...] allows me to learn from very experienced and conscientious ecologists, and gives me time to reflect on the day to day work I do and become a better ecologist.*



## South West England Section visit to Braunton Burrows

with disciplinary enquiries, critiquing articles for *In Practice*, writing guidance for practitioners, helping with policy consultation responses, or any one of the other activities that members rely on. They also provide important outreach opportunities by working jointly with other bodies and engaging with potential new members at events, as well as connecting with students and early career ecologists, helping them grow their exciting new career. All of this work contributes to CIEEM's important role in raising standards and strengthening the profession. We hope (and feedback from volunteers confirms this) that those involved get something back from the experience. As well as enjoying the experience and the opportunity to engage with fellow members from other

organisations and sectors, our volunteers often report that they learn a lot from the activities that they are engaging with and appreciate the opportunity to 'give something back' to the profession. Peer-to-peer learning, networking with other members and seeing different insights into common problems are all part of the benefits. Of course, volunteering can also be counted towards the member's annual CPD requirement.

## How To Volunteer

Volunteering opportunities are generally advertised to members via *In Practice*, the eNewsletter, the CIEEM website or direct email. Opportunities vary in terms of time commitment and duration but we generally try to provide an estimate of both as part of the role description. There will be a recruitment and selection process which varies according to the type of opportunity and the need at that time. For example, if it is a governance role there may be a specific practice sector or membership grade that is required to fill a vacancy. For other roles enthusiasm and energy may be all that is required. You can volunteer simply by giving your time to a consultation that matters to you.

Some roles require travel to face-to-face meetings on specific dates and times whilst others can be office or home-based

*Being on the committee gets me out there into a bigger, wider world of like-minded people beyond my office, or site, or wherever it is I might be working. In doing so, I also get to participate in what I see as important activities, including driving up professional standards, and therefore, in my own small way making 'environmentalist' or 'ecologist' a legitimate career choice, justly on a par with other such professions.*

## Professional Updates

and may be able to be done flexibly. If the role does require travel or other direct costs then these can be reclaimed from the Institute. Whatever your interest or potential time commitment, there is likely to be a role to suit you.



CIEEM Governing Board meeting (March 2017)



On behalf of the Governing Board, the Secretariat and all our members who benefit so directly from your dedication and enthusiasm, I would like to offer a huge thank you to all our CIEEM volunteers!

*I get to discuss the latest ecological issues with the best ecologists in their fields.*

*As a busy environmental practitioner, I never seemed to have time (or, more truthfully, to make time) to get involved in the local Section Committee, so I have great respect for those members who are busy professionals but still manage to commit some of their time! Now I am semi-retired from the day job (but somehow still busy) I resolved to do more and make up for my previous laxness – to give something back, if you like. I give my time and brain power to help the South West England Section Committee engage with and support members. And I get a lot out of it as well – it keeps me in touch with my profession and other professionals and it's an outlet for my skills and creativity that otherwise would become frustrating.*

*The regional and national Section Committees are a vital part of the two-way process between CIEEM and its members, especially at a local level. I live and worked in the far South West, though my work took me around the country and worldwide. The South West England Section is the second largest by far in terms of numbers (after London and the South East), and members are spread throughout the six counties. However, I was always aware that there were few events and other forms of direct engagement, for members (and particularly students) in remoter regions, like Cornwall, even though we have a significant number of members there. Now I know why – organising events takes time and effort, and Committee*

*resources are stretched. So, I got stuck in and organised some, both field visits and evening talks, and the response was amazing and so rewarding! There is a real hunger in all corners of every region for networking and engagement with other ecologists through CIEEM. And this brings members and students into closer contact with CIEEM so they can see how it is relevant to them.*

*So, don't complain that not enough happens in your local area – or that you don't know what CIEEM does for you – get stuck in, get involved and make it happen!*

**Nick Coppin MCIEEM**

Vice Convener, South West Geographic Section Committee

# Supporting Membership Growth

CIEEM's Membership Admissions Committee (MAC) is one of the Institute's three standing committees that undertake strategic and operational tasks on behalf of the Governing Board. MAC meets four times a year and is comprised of 15 Full and Fellow members serving in a voluntary capacity. The committee's remit is to provide strategic support for the Membership Manager by keeping under review CIEEM's membership admission regulations, membership grades and fees and eligibility criteria. MAC also monitors membership trends and advises

on appropriate actions to increase retention and growth. The bulk of the work carried out by MAC members, the assessment of membership applications, actually happens between meetings. MAC members play a vital role in assessing applications for professional grades of membership, assisted by a smaller pool of volunteer assessors who do not form part of the committee.

Here, MAC's current Chair – Dr John Rose CEnv MCIEEM – and two other Committee members share their experience of volunteering as a MAC member so far.



**Dr John Rose**  
CEnv MCIEEM  
Course Leader,  
MSc Environmental  
Management, Sheffield  
Hallam University

I joined IEEM (as it then was) in the mid 1990s as a consultant ecologist. For many years I was a largely inactive member. However, when I moved into university teaching I wanted to ensure that I did not lose touch with developments in professional ecology and so decided to become more involved with the Institute. I

joined the Training, Education and Career Development Committee (TECDC), which I went on to Chair for the maximum allowed period. After the best part of a decade involved with TECDC I felt that I needed a break and did not immediately seek to be involved with any other committee. However, my view that I needed to have some direct involvement with professional ecology in order to teach the subject effectively had not changed and after a few years I decided to look again at opportunities to be involved with CIEEM. I saw an advert saying that MAC needed new members so decided I would see if I could contribute to that Committee. Fortunately for me, they lacked academic members and so I was invited to join.

Little did I realise what an interesting time I had chosen to join the Committee. The process of assessing applications was moving from one based on length of experience to one based on competence. Although the hard work had been done in writing the Competency Framework, it had not yet been implemented. As a result, I had the opportunity to help with bedding in the new approach and so have been able to take back to my students how a competency-based approach works.

Initially, application numbers were low as potential members were unsure of the new process. Gradually however, application numbers rose and it became clear that the additional time required to review competency-based applications meant that volunteer Committee members were struggling to keep pace with the number of applications. The Committee therefore decided that we needed to review the application process to see if it could be speeded up without compromising the quality of the assessment. This review has now been completed and, within my relatively short period on the Committee, a third version of the application review process is about to start.

I am hoping that my next few years on the Committee will not see as much change as the last few. However, based on my experience to date, I am not holding my breath. What I do know is that they will not be boring!



**Matthew Hague**  
**CEnv MCIEEM**  
Consultant Ecologist,  
Brady Shipman Martin

### ***Why did you join the Committee?***

I thought membership would be a way of giving something back to CIEEM, which has been very important in helping my career to develop over the years, and secondly that Committee membership would allow me to regularly interact with a lot of experienced ecologists from across a range of sectors throughout Britain and Ireland. I hoped I would learn something from the other members!

### ***What have you gained from being a MAC member so far?***

Even more than I expected, it has been extremely rewarding. It is great to be able to contribute to the growth of the Institute, but just as importantly, we on MAC have a responsibility to ensure that standards are maintained. It is a serious responsibility that I enjoy. More personally, I have enjoyed meeting new people and catching up with old friends at the regular meetings.



**Corin Simmonds**  
**CEcol MCIEEM**  
Principal Consultant, RSK

### ***What have you gained from being a MAC member so far?***

I have thoroughly enjoyed the process of assessing applications, although it is hard work. It is a satisfying process to accept applicants whom you can see have worked so hard on their applications and are such a credit to our industry.

### ***Have you found that Committee work has influenced any areas of your work?***

My more in-depth understanding of the application process I hope has helped me guide my colleagues through the process. It has also opened my eyes to other parts of our industry and the integration and knowledge sharing that can be achieved between us.

### ***Have you found that Committee work has influenced any areas of your work?***

Yes, definitely. I have learned a lot about the way other ecologists work, particularly people who aren't consultants like me. It has been very helpful. I also come away from meetings knowing more than I did before, and that's always good.

### ***Has any aspect of your MAC role surprised you?***

Yes, I knew it would be interesting, but I didn't expect that it would be so diverse, or that we as Committee members would have such an important role in helping to develop policy within the Institute. I am not surprised at how interesting and enjoyable it has been.

### ***Would you recommend volunteering on a standing committee to other members?***

I certainly would, it's very rewarding to contribute to the growth of the Institute. It's also pretty good for your own career development.

### ***What three words would best describe being a member of MAC?***

Rewarding, satisfying and useful.

### ***Has any aspect of your MAC role surprised you?***

I have been surprised at the depth of topics covered in our meetings and the challenges for CIEEM to integrate the various aspects of its function as an Industry body. This is also covered in the interesting and diverse Committee members.

### ***Would you recommend volunteering on a standing committee to other members?***

Yes. It is so important that we have willing volunteers to help raise the profile of CIEEM so we can drive decisions and make a real difference to our profession. It is such a valuable way of contributing and learning new skills at the same time.

### ***What three words would best describe being a member of MAC?***

Challenging, interesting and sometimes baffling!



# Changes to Members' CPD Obligation

**Karen Hood-Cree**

Professional Development Co-ordinator, CIEEM

Members' Continuing Professional Development (CPD) obligations are changing as of 1 October 2017. Full, Fellow, Associate and Graduate members will now be required to complete and record a minimum of 30 hours CPD per year rather than the current rolling average of 30 hours CPD per year. We hope that this change will make it easier for members to keep up-to-date with where they are with meeting this obligation and to record it appropriately. Any member who, due to exceptional circumstances, will have difficulty meeting

this requirement in any one year should contact the Secretariat for advice.

CPD is more than training courses and conferences. There is a wide range of CPD activities available and the majority are free or low-cost. The diagram illustrates many of these activities, some of which you may never have thought of, and there will be others that are not listed. The key criteria for CPD is that it is an activity from which you can learn something that you can then apply in your professional life.

CPD can be defined as either **structured** ('directed') or **unstructured** ('self-directed'). Members are required to do a minimum of 20 hours structured CPD per year. The remainder can be structured or unstructured.

## Recording your CPD

Your member obligation includes keeping a record of your CPD. You can access the online CPD Tool via the members' area of the website to create your record, keep a history of CPD, and also plan future

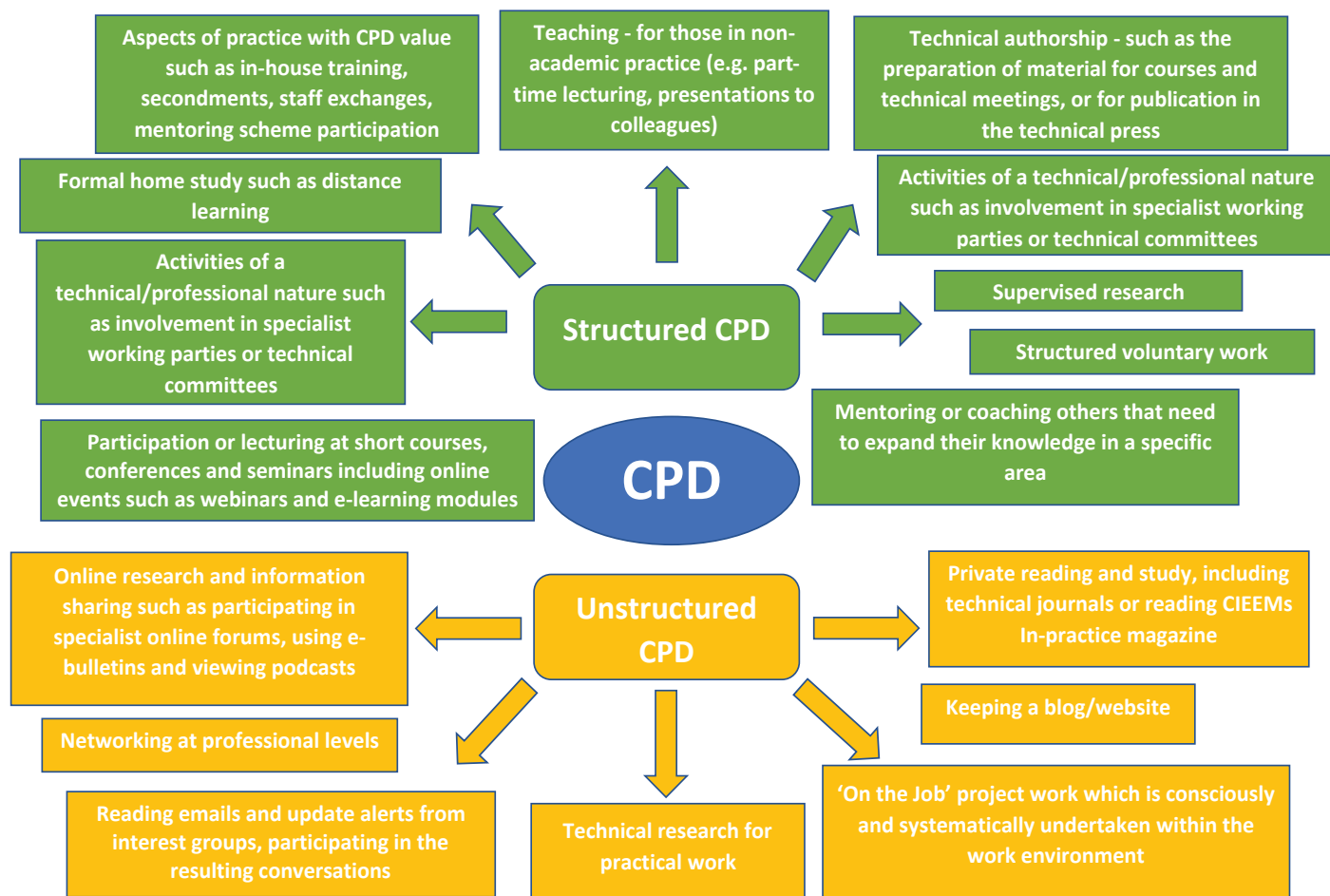


Figure 1. There are many ways to undertake CPD

activities. However, you can also keep your own paper or electronic record. Try to make it a habit to record your CPD activities including any reading, online participation, networking or research.

Each year CIEEM undertakes a random audit of members to check that they are meeting their obligation with regards to CPD. If you are contacted as part of the audit you must supply your CPD record (if you have used the online tool we can check it automatically so that is less hassle for you). A failure to provide evidence of satisfactorily undertaking CPD is a potential breach of the Code of Professional Conduct. Members have had to attend disciplinary hearings and have even been excluded from membership for failing to comply so please do not let that be you.

Undertaking CPD is an opportunity to develop your knowledge and skills and is an investment in your career. Seize it!

### To get the best out of your CPD:

**Reflect** – Look at your development needs and make use of the online CPD planning tool to find a way of meeting them.

**Expectations** – From both yourself and others. What is expected from you in your role and what is the standard you would like to be able to achieve looking forwards?

**Changes** – Are there any recent changes in your life or at work that are stopping you from achieving your goals?

**Responsibilities** – What responsibilities do you have at work and can you match these to your CPD requirements?

**Knowledge Gaps** – Take a closer look at the skills you may either need to progress or those that would add to or enhance your existing skill-set.

**CPD Tool** – The Tool has been developed for members and is there for you to use.

If you require any further advice regarding undertaking CPD or using the online CPD tool please do not hesitate to contact us at [CPD@CIEEM.net](mailto:CPD@CIEEM.net) – we would be more than happy to assist you with any advice or help.

# Student Hub

## How You Can Make Networking Your Best Friend

We get it, walking into a room full of seasoned professionals can be a daunting experience and whilst you try to carefully consider whether to eat the croissant (in case of that mid-mouthful-awkward-question-answering moment), it's important to just remind yourself that everyone in that room was you, whether that was recently or a longer time ago. Everyone has to start somewhere. So relaaaaaax, networking is the best way to make contacts in your chosen sector who you can call on for advice, direction and introductions. We've put our heads together and come up with some great tips and ways you can network through CIEEM and, hopefully you might pick something up that you can use in the future.ure.

- **After the event:** send a brief 'great to meet you' follow up message. Use social media to keep up with your new contacts and keep expanding your networks.

*Research the topics and presentations beforehand, especially in relation to the workshops so you can have an active involvement and participation. Make the most of networking opportunities and be bold. Also aim to meet up with fellow students.*

**Hadden Turner**

BSc Conservation and Environment

CIEEM has two types of Member Network ([www.cieem.net/member-networks](http://www.cieem.net/member-networks)):

**Geographic Sections**, which are regionally based, and **Special Interest Groups**, which are topic-based. Each group is run by a committee of volunteer CIEEM members who contribute their time to (amongst other things) run local events (<http://cieem.activclient.com/CIEEM/Events/Event-Listing.aspx>), many of which are free or low cost and open to members only. These events offer a great opportunity to meet people working in your chosen sector and learn new skills to complement your studies. Many committees will welcome student committee members (subject to availability) and all are keen to encourage and support early careers members into the profession. Find out more about how you can get involved at [www.cieem.net/get-involved](http://www.cieem.net/get-involved).

## Network at Conferences

Keen to make contacts with practitioners? Unsure where to start? Conferences can be a great place to meet ecologists and environmental managers and our top tips aim to help you make the most of these networking opportunities:

- **Before you go:** Check out the programme and get a copy of the delegate list. Use Google or LinkedIn to research delegates or speakers you may want to connect with and prepare questions in advance.
- **When you arrive:** Ask the organisers to help with introductions. Have a few key questions ready. Exchange contact details.

## Join Member Networks and Network for Free!

Once you've started your journey towards a career in the environmental sector as a student, it's never too early to begin exploring who's who and beginning to build your own networks. Joining a professional body like CIEEM is a great start, but you will need to take an active part to get the most out of the opportunities available to you. You can do this by attending training, events and conferences, joining our LinkedIn Group (<https://www.linkedin.com/groups/4306428>) and/or getting involved with your local Member Network.

## Networking Without Even Leaving the House

If you've just started on the new series of *Game of Thrones* or have disappeared under a mountain of shiny new text books, you might be reluctant to leave the house, but that's not a worry. You can network from the sofa – by connecting with us on social media. We have a very active Twitter account (@InstEcolEnvMan), with over 4,600 followers. We also have an engaging LinkedIn group, with a varied thread of discussion topics you can get involved with.

## Student and Careers Working Group



**Vicky Bowskill**  
Member Networks  
Co-ordinator



**Emma Downey**  
Marketing Officer



**Krystie Hamilton**  
Professional  
Development  
Co-ordinator



**Sarah Hayward**  
Assistant  
Membership Officer



**Lexie Munro**  
Professional  
Development  
Co-ordinator



# 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.

## New Chartered Members

CIEEM is pleased to announce the following new Chartered members:

Chartered Ecologist	
Bernard Fleming CEcol MCIEEM	Poppy McVail CEcol CEnv MCIEEM
Neil Madden CEcol MCIEEM	Gabrielle Graham CEcol MCIEEM
Philippa Harvey CEcol MCIEEM	Paul Hodges CEcol CEnv MCIEEM
Stephen Lockwood CEcol MCIEEM	Jon Curson CEcol MCIEEM
Nicholas Sibbett CEcol CEnv MCIEEM	Scott Cafferty CEcol MCIEEM
Sarah Kydd CEcol MCIEEM	

## Application deadlines

CEcol application due date	CEnv application due date	CEnv report submission deadline
5 January 2018	2 March 2018	25 May 2018

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



**Luke Gorman**  
CEcol MCIEEM

**Principal Ecologist,  
Atkins Ltd**

### Why did you join CIEEM?

I applied for Associate membership with CIEEM (formerly IEEM) during my first year working as a Graduate Ecologist with Atkins Ltd in 2004. Membership of CIEEM is a recognised benchmark of professionalism within the sector and I was keen to be part of a creditable and respected organisation. CIEEM promotes the continued development of knowledge and skills and the Code of Professional Conduct emphasises the fundamental principles of competence, integrity and ethical standards; all principles I hold in high regard.

### Why did you apply for Chartered status?

I applied as soon as the opportunity arose in 2013. I believe that the Register of Chartered Ecologists promotes the highest standards of professional practice and, in time, will raise the standards of practice in the wider ecology sector. I also wanted to help promote the importance of the Chartered Ecologist award to others in the sector.

### How did you find the Chartership application process?

I found the process stimulating. Whilst completing the application form I found myself reviewing my career to date; my achievements, my technical ability, the innovative approaches to mitigation I have used over the years and also how I have helped advance the technical ability of other ecologists within the Atkins team. The interview was relaxed but challenging; a real emphasis was placed on providing clear evidence to justify the claimed competency of my chosen subject areas as well as the three mandatory ones.

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

I have been fortunate enough to lead the ecological input into several interesting and complex schemes over the years and continue to do so. Although the type of work I undertake hasn't altered significantly since receiving Chartered status, it is very apparent that the status has increased recognition and respect for my knowledge and skills amongst other professionals, employers, colleagues and clients. In the future, I consider it likely that clients will request that the ecological input into complex and/or nationally

important schemes is led by a Chartered Ecologist in order to provide assurance of the highest standards.

### Would you recommend applying for Chartership to your peers and colleagues?

I would not hesitate to recommend it to my peers and colleagues who meet the qualifying criteria. The experience is challenging but highly rewarding. Gaining Chartered status demonstrates a strong commitment to the ethos and values that characterise our profession and is also important for continued career development.

### What is the best thing about your job?

I have worked as an ecologist for over 14 years and have a genuine passion for ecology. I am very fortunate to work with a fantastic team of technically excellent ecologists and there is collaboration between the regional Atkins ecology teams. My work is never boring, no two days are the same, and there is always a new and exciting challenge around the corner.

If you are interested in submitting your own profile please contact the Registration Officer, Michael Hornby, at [RegistrationOfficer@cieem.net](mailto:RegistrationOfficer@cieem.net).

# British Ecological Society



## BES-CIEEM Summer School 2017

In July, CIEEM helped us host the third annual Summer School in Pembrokeshire for 50 talented undergraduates from across the UK and Ireland.

Its purpose is to encourage undergraduates to pursue ecological and environmental careers and exposes students to a week of intense field experience and career development. Things kicked off with a plenary talk from Jane Memmott and a chance for undergraduates to meet with PhD mentors. By 06:30 on Tuesday morning, we were on the beach for a pre-breakfast BioBlitz; the remainder of the day was spent exploring mammal ecology and entomology. After dinner, our students trekked out into the night for some nocturnal ecology and UV tracking of invertebrates.

Six CIEEM members offered guidance on some of the work they are involved in, illustrating the range of career options and how they fit together. The first part of the workshop was based around a local site visit and considered the different ways ecologists may be involved in assessing and managing a site – either as a nature reserve or when a development is proposed for that area. This was followed by a protected species and sites ‘expert session’, exploring relevant legislation and the overall aim of site/species protection. Case studies were used to illustrate how bats, badgers and bird species can be protected from the impacts of development.

Our students were encouraged to consider how research informs and is informed by practice, and how they might develop a breadth of skills that would allow them to pursue career options without closing any doors.

The wildlife paradise of Skomer Island was a highlight and our students had an opportunity to study marine and island ecology with a final session on conservation. Again, we were pleased to include 10 students from ‘In2Science’ – a programme that targets A-level students from black and other minority ethnicities, lower socio-economic backgrounds or being the first in a family to consider pursuing Higher Education. We are incredibly proud that previous students secured places at Oxford as a result of their experiences at our Summer School.

Interested in helping out at our 2018 Summer School? Contact Amy Padfield, our Education Officer: amy@britishecologicalsociety.org. Look out for the Storify-ed adventures on our Twitter feed: @BritishEcolSoc

## Annual Meeting 2017 (11-14 December, Ghent, Belgium)

Registration and abstract submission is now open for our joint Annual Meeting. It will bring together 1,200 international delegates from our ecological community. This meeting will build closer ties between European ecological communities, discuss the latest advances and focus on the major environmental challenges at the European level. Our plenary speakers are Iain Couzin, Sue Hartley, Carlos Herrera and Louise Vet.

Our thematic topics include:

- Bridging the resilience of social-ecological systems with natural capital
- Eco-evolutionary dynamics in an urbanized world
- Environmental and Ecological Metabolomics
- Frontiers in agro-ecology: multi-trophic trait-based approaches for climate adaptability
- Linking functional diversity of terrestrial and marine primary producers – the potential of remote sensing
- Rewilding as a contemporary conservation strategy

And workshops include:

- Designing Interactive Games for Outreach
- How can Citizen Science Advance Ecology? From Data Collection to Biodiversity Observation Network Design and Mobile Technology Application
- Managing Stress: How to Identify the Signs and Learn Techniques to Manage them
- Techniques for Decision Making in Conservation

## Journal of Applied Ecology

The *Journal of Applied Ecology*, as usual, has a wealth of resources suitable for CIEEM members:

- **Toward prediction in the restoration of biodiversity**  
<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12940/abstract>  
With restoration outcomes notoriously

challenging to predict, this Special Feature looks at ecological theory alongside restoration practice in order to better-understand the process and ultimately support managers’ abilities to repair ecosystems.

- **Policy direction: Integrating invasive species policies across ornamental horticulture supply-chains to prevent plant invasions**  
<http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12953/full>  
Policy implications. Closing the plant invasion pathway associated with ornamental horticulture requires government-industry agreements to fund effective pre- and post-border weed-risk assessments that can be subsequently supported by widely adopted, as well as verifiable, industry codes of conduct. This will ensure producers and consumers make informed choices in the face of better targeted public education addressing plant invasions.
- **Cross-journal Associate Editor open call**  
<http://www.britishecologicalsociety.org/AEcall>  
Senior Editors are seeking applications in a limited number of specific subject areas:
  - Disease and pathogen ecology, including disease vectors and zoonoses
  - Benthic and coastal ecosystem function and restoration
  - Insect dynamics and forest management
  - Connections between ecological theory and restoration
- **Journal of Applied Ecology Associate Editor mentoring opportunity**  
<http://bit.ly/2sY4x9t>  
Aimed at those with less than five years post-PhD and little to no editorial experience

## Contact

Richard@britishecologicalsociety.org  
@BritishEcolSoc  
[www.BritishEcologicalSociety.org](http://www.BritishEcologicalSociety.org)

# 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.

For further information about Member Networks and how you can get involved, please visit [www.cieem.net/get-involved](http://www.cieem.net/get-involved).

## SOUTH EAST ENGLAND

### Go-Wild @ The Knepp Re-wilding Project 23 June 2017

South East Section members had a good day out at the Knepp Estate rewilding project in Sussex in June.



Delegates saw first-hand the results of rewilding in action. This included a walking tour of Repton Park, lake and wetland habitats, as well as a 'safari tour' of the more remote areas of the estate – which are managed for low density grazing deer, longhorn cattle and Tamworth pigs. We were lucky enough on the day to have some great views of the purple emperor butterfly, one of the species which has benefitted from the rewilding project, with the highest count in the UK being recorded at the estate this summer. Delegates were also treated to a locally sourced organic lunch – which provided an informal chance to network with other members of the Section.

## WALES

### Visit to the Elan Valley Meadows 8 July 2017

On a beautiful sunny mid-Wales day, our group gathered at the Elan Valley Visitor Centre before moving off to see two sets of rich hay meadows. In the morning, we were led by Michael Hayes to the Coronation hay meadows of Caeau Penglaneinon where, amidst the fantastic richness of fields full of wood bitter vetch, greater butterfly orchids, eyebrights, fairy flax, great burnet and saw-wort, he described his work devising management regimes to maintain the meadows' biodiversity.

After lunch we joined Sorcha Lewis to see some of the natural history highlights of her farm adjoining Penygareg Reservoir. Evidence of water voles in pond-side rushes and purple moorgrass were first on the list followed by examination of old birch trees for Welsh clearwing moths. Having seen mountain pansy flowering in plant-rich grazed pasture, we moved to the waterside hay meadow which, with over 120 species of flowering plants, did not disappoint. Unsurprisingly most of the flowers of our morning visit were well in evidence in Sorcha's meadows, but with some additions and in differing proportions, which gives each of the species-rich meadows in this valley its own individual character. Our thanks to Michael and Sorcha for their help in making this visit a great success.



Mike Hayes with the CIEEM Wales Group in the Caeau Penglaneinon meadows ©Fred Slater



Sorcha Lewis leading the group through hay meadows towards Penygareg reservoir ©Fred Slater

### Other events this quarter have looked at:

- European eels in the North East
- Urban fringe wildflower meadows in the North West
- Net Gain, farm wildlife and Nathusius' pipistrelles in the South East
- Owl pellet ID and beaver impacts in the South West
- Heathland restoration in the West Midlands

All these events are organised by our volunteer Member Network committees, so if you have an idea for an event in your area – especially if you are able to offer a little bit of time to help organise it – please do contact your Committee to discuss.

To find out what is going on in your area, and contact your Member Network Committee, visit: [www.cieem.net/member-networks](http://www.cieem.net/member-networks)



### LAUNCH OF NEW ECOLOGICAL RESTORATION AND HABITAT CREATION SPECIAL INTEREST GROUP

This autumn sees the launch of CIEEM's newest Special Interest Group (SIG) with the new Committee being elected as part of the 2017 elections. The new group will be working on events, policy engagement and other initiatives relating to wide-ranging aspects of ecological restoration and habitat creation.

To find out more about this what this new group will be getting up to as they begin making plans, visit:  
[www.cieem.net/special-interest-groups](http://www.cieem.net/special-interest-groups)



### 2017 ELECTIONS

#### Nominations:

September is the time of year when we are inviting nominations to join our Member Network committees. Look out for emails giving details of how you can nominate yourself and note the deadline of **25 September** for these to be submitted.

#### Voting:

Online election polls will be circulated to all members in mid-October and the deadline for voting will be **17 November**. Results will be announced later in November.



You can find details of all the current Member Network Committee vacancies at: <https://www.cieem.net/cieem-committee-vacancies>

### Member Network Conferences

#### East of England Section Conference and Annual Members' Meeting 2017

#### Habitat Creation and Restoration in the East of England

13 September 2017, Cambridge

#### Welsh Section Conference 2017

#### Turning Policy into Practice: Realising the Environmental Potential of New Legislation in Wales

5 October 2017, Newport

#### South West England Section Conference and Annual Members' Meeting 2017

#### Life in Earth: Soils – The Forgotten Science in Ecology

6 December 2017, Okehampton

For further details and bookings visit <http://events.cieem.net/Events/Event-Listing.aspx>

Look out for upcoming events in your area and keep up to date with what's been going on at  
[www.cieem.net/member-networks](http://www.cieem.net/member-networks).

For information on vacancies in your Member Network committees visit  
[www.cieem.net/cieem-committee-vacancies](http://www.cieem.net/cieem-committee-vacancies).

# New Members

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

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

## ADMISSIONS

### Full Members

David Barber, Petrina Brown,  
Dr Fiona Devaney, Dr Sarah Grinsted,  
John Jones, Emma Mundy, Karen Rentoul,  
Elizabeth Tinsley

### Upgrades to Full Membership

Rebecca Bond, Aline Brodzinski,  
Helen Chance, Lucy Elliott, Kathryn James,  
Benjamin McLean, John O'Connor,  
Gemma Nixon, James Porter, Aidan Ryan,  
Stephen Sanger, David Spencer,  
Nikki Taylor, Georgina Timmis,  
Peter Watson, Elizabeth White

### Associate Members

Paul Cassidy, Samantha Dawson,  
Anna Dennis, Robert Dunn, Carolyn Gillen,  
Tara Hall, Bridget Keehan, Dean LeFeuvre,  
Kate McCrum, Michael Murfin,  
Andrew Torsney, Gemma Watkinson,  
Richard Wheat

### Upgrades to Associate Membership

Annika Binet, Rachel Bover, Peter Clark,  
Stephen Docker, Jeffrey Grant,  
Robyn Guppy, Karl Harrison, Jamie Ingram,  
Hannah Knight, Gareth Lang,  
Taryn Rodgers, Donald Scott,  
Kathryn Skinner, Philip Smith

### Graduate Members

Robert Allen, Stephanie Ball, Celia Barlow,  
Jade Chenery, Georgina Davey,  
Hazel Doyle, Sacha Elliott, Joseph Evans,  
Rosie Fisher, Ben Franklin, Steven Fyffe,  
Claire Gilby, Emilie Gorse, Nicholas Gray,  
Jacob Hall, Victoria Harrison, Peter Haynes,  
Flora Haynes, Laura Heading,  
Natalie Hooton, Daniel Hulmes,  
James Humphries, James Hutchison,  
Ben Jones, Phillip Joyce, Charlotte Long,  
Susan Loughran, Kirsty McConnell,  
Rosie Ormerod, Phillip Playford,  
Joshua Richardson, Rachel Seddon,  
Rozanna Shah, Caroline Smallthwaite,  
Danielle Treanor, Sophie Warnock,  
Charlotte Wood, Thomas Wright

### Upgrades to Graduate Membership

Lucy Bartlett, Stephanie Davies,  
Joseph Denny, Ruth Holland,  
Francesca McDowell, Paul Sheridan,  
Adam Smith, Lindsay Webster

### Qualifying Members

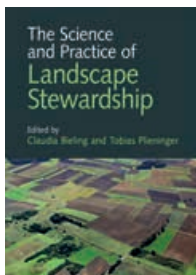
Stephen Akeroyd, Sean Graham,  
Viktoria Hobbs, Kari Mcsherry, Finlay Rylatt

### Student Members

Karoline Allu, Sam Bacon, Emma Baker,  
Hayley Barrett, Carol Boulty, Alice Brown,  
Gary Brown, Dr Amelia Charles,

Emma Chilton Emily Cole, Darren Connor,  
Connie Corbin, Ellen Davies,  
Rowena Diamond, Claire Doohan,  
Lyndsey Dowdall, Harry Ferguson,  
Alec Ffitch, James Field, Marco Fioratti,  
Savannah Fradley, Rosalind Gray,  
Victoria Harris, Isabel Hassall,  
Charlotte Hewitt, James Heywood,  
Sandra Hilder, Sam Hillman,  
Jordan Hitch, Alexandre Hodges,  
John Johnson, Daniel Jones,  
Aneesh Kale, Nicole King,  
Kieran Leigh-Moy, Daniel Lines,  
Hannah Lockwood, Sarah Mackinnon,  
Sofia Magarinos, Eleanor Martell,  
Mantas Mickevicius, Jade Musto,  
Brendan Noone, Christopher Norris,  
Benjamin Nunn, Shaun O'Neill,  
Samantha Perks, Jennifer Pilkington,  
Carl Platt, Daniel Plunkett, Lyana Radzif,  
Peter Raynor, Thomas Reid,  
Alexander Rozek, Nicholas Salter,  
Emma Smith, Katy Smith, Sophie Smith,  
Rachel Sollitt, Elliott Spiller,  
Theodore Stanley, Joanna Stephen,  
Jennifer Stollery, Alison Stuart,  
Elliot Tasker, Louisa Theeman,  
Trystan Thomas, Francesca Thorley,  
Ross Turnbull, Anna Williams, Daniel Willis,  
Elizabeth Willott, Natasha Woest,  
Kate Wolstenholme, Jessica Yanetta

## Recent Publications



### The Science and Practice of Landscape Stewardship

Editors: Claudia Bieling and Tobias Plieninger

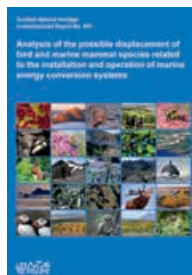
ISBN-13: 9781107142268

Available from: [www.nhbs.com](http://www.nhbs.com)

Price: £39.99

This publication explores the principles of landscape stewardship and their

application in fields such as agriculture, ecological restoration and urban green infrastructure, providing insights into the potential benefits and challenges of landscape stewardship and identifying future paths for the science and practice of landscape-related sustainability efforts.



### SNH Commissioned Report 947: Analysis of the possible displacement of bird and marine mammal species related to the installation and operation of marine energy conversion systems

Free download: <http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=2471>

This study provides a comprehensive review of the wildlife

observed at Billia Croo and the Fall of Warness since observations began and, specifically, investigates the potential influence of device installation, operation and related activity, upon marine wildlife distribution and abundance.



### Guide to Flowers of Walks and Waysides

Authors: Rebecca Farley-Brown and Lizzie Harper (illustrator)

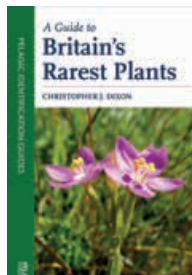
ISBN-13: 9781908819345

Available from: [www.nhbs.com](http://www.nhbs.com)

Price: £3.50

From black medick to bugle, from willowherb to woundwort, this Field

Studies Council guide covers some of the common flowers encountered on country walks, growing in hedgerows, grassy areas and meadows.



### A Guide to Britain's Rarest Plants

Author: Christopher J. Dixon

ISBN-13: 9781784271466

Available from: [www.nhbs.com](http://www.nhbs.com)

Price: £19.99

This guide describes 66 native species of plants that have the most narrowly restricted ranges in Great Britain. The

reasons for their rarity and the work being done to save them is given for each species, together with its habitat to allow the reader to better understand the ecological context.



### The Barbastelle Bat Conservation Handbook

Authors: Ian Davidson-Watts and Matt Zeale

ISBN: 9781784270544

Available from: [www.pelagicpublishing.com](http://www.pelagicpublishing.com)

Price: £34.99

This Handbook is a long-awaited guide

to barbastelle bat ecology, behaviour, conservation management and threats, the first publication of its kind to draw together all of the scientific research on the barbastelle bat into one comprehensive volume.



### Europe's Changing Woods and Forests: From Wildwood to Managed Landscapes

Editors: Keith J. Kirby FCIEEM and Charles Watkins

ISBN-13: 9781786391926

Available from: [www.nhbs.com](http://www.nhbs.com)

Price: £44.99

Bringing together key findings from across the continent, this publication provides a comprehensive account of recent research and the relevance of historical studies to our current conservation and management of forests.



### Using ecosystem engineers as tools in habitat restoration and rewilding: beaver and wetlands

Law, A. *et al.*

**Science of The Total Environment 2017, Volumes 605-606: 1021-1030**

This study illustrates that an ecosystem engineer can with time transform agricultural land into a comparatively species-rich and heterogeneous wetland environment, thus meeting common restoration objectives. This offers a passive but innovative solution to the problems of wetland habitat loss that complements the value of beavers for water or sediment storage and flow attenuation.

Open access: [http://www.sciencedirect.com/science/article/pii/S0048969717315929?ad\\_id=2391](http://www.sciencedirect.com/science/article/pii/S0048969717315929?ad_id=2391)



### The new EIA Directive (2014/52/EU) and UK water impact assessment practice

Mustow, S.E.

**Impact Assessment and Project Appraisal 2017, Volume 35, Issue 3**

This paper considers how impact assessment practice relating to all aspects of the water environment will be affected by the transposition of the amended environmental impact assessment (EIA) Directive (2014/52/EU) into UK legislation. Key elements of the new Directive are identified, such as requirements relating to monitoring, climate change (including adaptation), biodiversity, human health and coordination with Water Framework Directive (2000/60/EC) (WFD) Assessment. The extent to which existing guidance and practice already meet these new requirements is assessed, through a review of relevant guidance and selected environmental statements (ESs). Key areas where water impact assessment (WIA) practice needs to be adapted to take account of the new requirements are identified. Substantial changes in practice are likely to be required to incorporate human health assessment into WIA and to demonstrate that competent experts are used to conduct WIA. New guidance will be needed relating to competent experts and improved guidance will be required for WFD Assessment.

More information: <http://www.tandfonline.com/doi/full/10.1080/14615517.2017.1322809>

### Critical catchments for freshwater biodiversity conservation in Europe: identification, prioritisation and gap analysis

Carrizo, S.F. *et al.*

**Journal of Applied Ecology 2017, 54: 1209–1218.**

While Critical Catchments cover almost half of Europe, priority catchments are mostly in southern and eastern Europe where the current level of protection is not sufficient. This study presents a foundation for a Europe-wide systematic conservation plan to ensure the persistence of freshwater biodiversity. The study provides a powerful new tool for optimising investment on the conservation of freshwater biodiversity and for meeting targets set forth in international biodiversity policies, conventions and strategies.

Open access: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12842/full>

### Scenarios of habitat management options to reduce predator impacts on nesting waders

Laidlaw, R.A. *et al.*

**Journal of Applied Ecology 2017, 54: 1219–1229.**  
**doi:10.1111/1365-2664.12838**

Using a 7-year study of breeding lapwing and redshank, the authors first identify features that influence nest predation, and then use this information to compare the magnitude of change in nest predation rates that could potentially result from future landscape management scenarios. The management scenarios suggest that, for breeding waders in wet grassland landscapes, creating areas of tall vegetation and concentrating surface flooding (to encourage high nesting densities and influence nesting distribution) can potentially help to reduce the unsustainably high levels of nest predation that are preventing population recovery.

Open access: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12838/full>

### Applying plant ecological knowledge to increase agricultural sustainability

Weiner, J.

**Journal of Ecology 2017, 105: 865–870.**  
**doi:10.1111/1365-2745.12792**

Plant ecological knowledge accumulated over the past 150 years has enormous implications for agriculture, but most of these implications have not been appreciated by ecologists or agronomists. The author presents several of the most salient examples. The modern scientific method tells us how we should test hypotheses, but it says nothing about how hypotheses are generated. We need to address the agricultural research agenda if it is to serve the interests of farmers, consumers and society as a whole, rather than narrow but powerful economic interests.

Open access: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12792/full>

### Benefits of increasing plant diversity in sustainable agroecosystems

Isbell, F. *et al.*

**Journal of Ecology 2017, 105: 871–879.**  
**doi:10.1111/1365-2745.12789**

The benefits of diversifying agroecosystems are expected to be greatest where the aims are to sustainably intensify production while reducing conventional inputs or to optimize both yields and ecosystem services. Over the next few decades, as monoculture yields continue to decelerate or decline for many crops, and as demand for ecosystem services continues to rise, diversification could become an essential tool for sustaining production and ecosystem services in croplands, rangelands and production forests.

Open access: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12789/full>

# Forthcoming Events 2017

For information on these events please see [www.cieem.net](http://www.cieem.net).

## Conferences


Date	Title	Location
13 September 2017	East of England Section Conference and Annual Members' Meeting 2017 – Habitat Creation and Restoration in the East of England	Cambridge
5 October 2017	Welsh Section Conference 2017 – Turning Policy into Practice: realising the environmental potential of new legislation in Wales	Newport
21-22 November 2017	<b>Autumn Conference 2017 – Mitigation Monitoring and Effectiveness</b>	Manchester
6 December 2017	South West England Section Conference and Annual Members' Meeting – Life in Earth: Soils – the forgotten science in ecology	Okehampton

## Training Courses

19 September 2017	Introduction to Bats and Bat Surveys	London
19 September 2017	Water Vole Ecology and Surveys	Cirencester
20 September 2017	Water Vole Mitigation	Cirencester
20 September 2017	Introduction to Bats and Bat Surveys	Dunblane
21 September 2017	Bat Impacts and Mitigation	Dunblane
21-22 September 2017	QGIS for Ecologists and Conservation Practitioners	Gloucester
26-27 September 2017	Peatland Restoration	Buxton
25 September 2017	Eurasian Beaver Ecology and Survey Techniques	Birnam
26 September 2017	Eurasian Beaver Mitigation and Management	Birnam
28 September 2017	Survey and Monitoring of Road and Rail and Associated Mitigation Schemes for Bats	Leeds
4 October 2017	Introduction to Bat Ecology and Surveys	Wareham
5 October 2017	Bat Impacts and Mitigation	Wareham
5 October 2017	Making the most of BREEAM and Home Quality Mark	London
11 October 2017	Badger Ecology and Surveys	Llandeilo
12 October 2017	Badger Mitigation	Llandeilo
13 October 2017	Understanding Wildlife Law	Derby
17 October 2017	Badger Survey, Impacts and Mitigation	Linlithgow
17 October 2017	Introduction to Ecological Impact Assessment (EclA)	Birmingham
18 October 2017	Ecological Report Writing	Birmingham
18 October 2017	Windfarm Collision Risk Modelling	Nr. Edinburgh
19 October 2017	Otter Ecology and Surveys	Kelso
19 October 2017	Habitats Regulations Assessment (HRA) of Projects	Swansea
20 October 2017	Camera Trapping for Ecologists	Mold
23-24 October 2017	Intermediate QGIS for Ecologists and Environmental Practitioners	Athlone
26-27 October 2017	Intermediate QGIS for Ecologists and Environmental Practitioners	London
31 October - 1 November 2017	QGIS for Ecologists and Conservation Practitioners	Manchester
31 October - 1 November 2017	Water Vole Live Trapping Care and Restoration	Lifton
1 November 2017	Calculating and Using Biodiversity Units	London
1-2 November 2017	Developing Skills in Ecological Impact Assessment (EclA)	Stirling
2 November 2017	Effective Communication for Women	Bristol
2 November 2017	Protected Mammals (excluding Bats) Impacts and Mitigation	Dunblane
7-8 November 2017	Developing Skills in Ecological Impact Assessment (EclA)	Swindon
8 November 2017	Trees and Bat Roosts	Dorking
8-9 November 2017	Getting Your Message Across – Delivering Talks and Guided Walks	Totnes
15 November 2017	Designing Biodiversity No Net Loss and Net Gain Projects	London
15-16 November 2017	Habitat Management for Beginners	Totnes
16 November 2017	Developing Skills in Appropriate Assessment	Dublin Bay
21 November 2017	Habitats Regulations Appraisal (HRA) Scotland	Inverness
23 November 2017	Ground Level Tree Assessments for Bats	Gloucester
29 November 2017	Introduction to Protected Species Law and Policy	London
1 December 2017	Ecological Modelling	Cardiff
6 December 2017	Survey and Assessment of Hedgerows in Winter Months	Salisbury



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## Water Vole Conservation Services

The Ecology Consultancy's specialist in-house team offer a comprehensive range of services for water vole conservation, covering all licensable and non-licensable activities:

- Water vole survey, including habitat assessment and population estimates;
- Advice on impacts, mitigation recommendations and enhancements;
- Licence applications and liaison with Natural England;
- A cost effective approach to translocation, methods including:
  - Live cage trapping and translocation;
  - Displacement;
- Overwintering facilities and health screening provided where required;
- Receptor site creation and habitat design advice;
- Population monitoring, passive monitoring, radio tracking and pit tagging.

Our team will provide a fast and reliable service to ensure projects run smoothly and without delay; our specialists can work alongside your own team of ecologists.

For further information on how we can help you with your upcoming water vole projects, please contact us on the details below.



**Ecology Consultancy**

T: 01273 813739

E: [sussex@ecologyconsultancy.co.uk](mailto:sussex@ecologyconsultancy.co.uk)

W: [www.ecologyconsultancy.co.uk](http://www.ecologyconsultancy.co.uk)