

CIEEM Awards 2020



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In his inimitable, mischievous style, Roger McGough in his poem "Conservation Piece" recognises that not everybody has quite the zeal and passion for the environment as your average CIEEM member:

*The countryside must be preserved!
(Preferably miles away from me).
Neat hectares of the stuff reserved
For those in need of flower or tree.
I'll make do with landscape painting
Film documentaries on TV
And when I need escape, panting,
Then open-mouthed I'll head for the sea.
Let others stroll and take their leisure,
In grasses wade up to their knees,
For I derive no earthly pleasure
From the green green rash that makes
me sneeze.*

An important role of our CIEEM Awards is to shout from the rooftops about the interesting, striking, intriguing, head-turning, innovative, challenging and important work that we do as environmental managers and ecologists. Awards to champion and promote the work that we do, probably not to galvanise Roger McGough's cynic, but certainly to showcase our work to our clients and illustrate what we can achieve for them and the environment, to enthuse funding agencies to continue to support special projects with all their attendant benefits and to inspire fellow members to aspire to making tomorrow's submissions.

After all, what does it take to make a submission for a CIEEM award? Well, finding time in a busy day and a hectic week, articulating the essence of an accomplishment, presenting the achievement in an eye-catching manner, finding support from among peers and, critically, belief in yourself and your project. So, before the judges have got anywhere near to your submission, there's evidence of time-management skills, a wily wordsmith, PR potential, ability to command respect and self-confidence. Interesting, that all sounds like headings in a curriculum vitae.

And don't forget everyone else who has been touched on the way to making that submission. Those other colleagues who put forward ideas of their own within the company, the colleagues who put that extra effort into the project to give it just that bit better chance of being selected, the boss who needed to sign it all off and was



Professor Max Wade CEcol CEnv FCIEEM

clearly chuffed if not downright impressed. The enthusiasm generated is contagious and like rolling a snowball grows rapidly: the admin support, the land owner, the colleague who took the photographs, the GIS specialist who helped to make that map, and the field team who got up at some unearthly hour to support the field work even when it was tipping it down. All this, and the judges still haven't had even a peak at that submission.

Given that CIEEM will have received around ten submissions for each of the various awards and, let's say, for every submission received by CIEEM there were two that didn't make the cut or get completed and that the process of submission will have touched about eight or nine other people, that means there's been scope for going on two thousand people to have been influenced by the cream of the work that ecologists and environmental managers do without the handing out of a single award.

So, thank you to all those who have been sucked into what are the CIEEM awards and for the contribution you have made to promoting the essential nature of our work, that it can be exciting and amazing and illustrate the lengths that we are prepared to go to look after our environment. It's now time to find out just how that submission fared, to celebrate all the submissions and, yes, make sure that we collectively shout from the rooftops.

I gave the first word to Roger McGough, so I should allow him to conclude my piece. On this occasion he's writing about an increasingly rare species, the bookworm:

*Bookworms
are the cleverest
of all the worms I know
They loll
about in libraries
eating words to make them grow
(Vegetarians mainly,
they are careful
what they eat
Avoiding names
of animals
or references to meat)
They live
to ripe old ages
and when it's time to wend
They slip
between the pages
curl up, and eat "The End".*

Poems

"Conservation piece" by R. McGough from "What on Earth...?" edited by J. Nicholls (Faber & Faber); "Bookworms" by R. McGough from "An Imaginary Menagerie" by R. McGough (Viking Kestrel).

Professor Max Wade CEcol CEnv FCIEEM
CIEEM President

CIEEM Medal

The CIEEM Medal is the Chartered Institute's highest accolade and is awarded annually. Recipients of the Medal must have made an outstanding and/or life-long contribution, in relation to ecology and environmental management. The Medal is open to both CIEEM members and non-members.

Best Practice Awards

These flagship project-based awards recognise high standards of professionalism and ecological and environmental management practice by CIEEM members. There are seven separate award categories:

1. Large-Scale Practical Nature Conservation
2. Small-Scale Practical Nature Conservation
3. Large-Scale Project Mitigation, Compensation and Enhancement
4. Small-Scale Project Mitigation, Compensation and Enhancement (no shortlisted entries in 2020)
5. Innovation
6. Knowledge Sharing
7. Stakeholder Engagement

Projects must display high standards of professionalism including a sound evidence base to inform and support the project's aims and objectives; a well-conceived plan, staff schedule and budget, with appropriate risk assessment; and that the project has achieved (or is achieving) its objectives.

Consultancy of the Year Award

This award recognises successful consultancies delivering high quality ecological services whilst being an exemplar employer and advocate for the profession. There are three award categories for different sized consultancies; over two thirds of each company's ecologists and environmental managers must be members of CIEEM. Criteria include delivery of high quality practical outcomes that benefit business and the economy; evidence of shared learning and good practice; commitment to undertaking CPD and/or supporting the professional development of staff; and promotion of the profession.

NGO Impact Award

This award recognises the achievement of NGOs in delivering a specified initiative, including campaigns and projects, that has had a major impact in benefiting nature and society. The initiatives can be local, national or international, site-based or species-based, campaigning or awareness raising. It can involve, for example, effective local engagement, influencing local or national policy, mobilising public support or utilising innovative communication methods. The key criteria is that it has made a difference to society and nature. For the purposes of this award, an NGO is defined as any organisation that is non-governmental, not-for-profit and pursues aims that are of benefit to society and nature. NGOs of any size and who are based anywhere in the world are eligible for this award. There is no requirement for there to have been any CIEEM member involvement in the initiative for it to be eligible.

Promising Professional Award

This individual award recognises the exceptional achievements of a CIEEM member (Graduate, Associate or Qualifying) during the early stages of their career. The winner will have demonstrated above-average competence and a strong commitment to their professional development. This can be demonstrated through their achievements, knowledge, skills, leadership, passion and commitment, and inspiration for others in the field of ecology and environmental management.

NEW FOR 2020 Action 2030 Award

Following announcement of our own commitment to achieving net-zero carbon emissions by 2030 (Action 2030), CIEEM is delighted to introduce this new award which seeks to recognise individuals or organisations who have had or are having the most impact in raising awareness, engaging others and/or leading action in relation to the climate emergency and/or the biodiversity crisis.

The award is for an individual or initiative that can demonstrate impact. This may have been by influencing others through raising awareness of the issues and the need for action. Or it could have been an initiative that purposely addresses the issues and makes a difference. These can be at a local, national or international scale. The judges were particularly keen to recognise individuals or initiatives that highlight the inter-relationship between the climate emergency and biodiversity crisis.

Members' Award

This award recognises the consistently high commitment and achievement of a CIEEM member in their work to protect and enhance nature, support and help others in the profession and/or contribute to the success of CIEEM. All membership grades are eligible.

In Practice Award

This award recognises the invaluable contribution to knowledge sharing that authors of feature articles in our members' bulletin, In Practice, make. The judges will be looking for the most influential and thought-provoking article of the year. All feature articles published in In Practice in 2017 were considered for this award, irrespective of whether the article was written by a CIEEM member or non-member.

Postgraduate Student Project Award

The Postgraduate Student Project Award recognises achievement in planning, undertaking and reporting a postgraduate project/dissertation in a relevant aspect of ecology or environmental management. It is awarded to one Masters degree project/dissertation undertaken in the 2016-2017 academic year, or equivalent if a different academic year system is used. The Postgraduate Student Project Award is open to CIEEM Student members, those who have upgraded to Graduate level but were Student members whilst undertaking the submitted project as well as students on a CIEEM-accredited degree programme.

Tony Bradshaw Award for Outstanding Best Practice

The Tony Bradshaw Award for Outstanding Best Practice recognises exceptional projects that set an overall impressively high standard. Category winners for each of the seven Best Practice Awards are automatically entered for the Award. The Award is made at the judges' discretion and will not necessarily be presented each year.

Isabella Tree

Outstanding Contribution in Championing Rewilding for Conservation Benefit

Isabella Tree is a journalist and farmer who, together with her husband Charlie Burrell, has converted the 3,500 acre Knepp Estate from an unprofitable, intensive farming venture into an exceptional landscape-scale restoration of biodiversity.

The decision to begin 'rewilding' at Knepp was not obvious and went against both traditional farming advice and traditional approaches to nature conservation. The decision to trust nature and to take an approach of minimal intervention was insightful and brave. Opposition from certain stakeholders and issues with, for example, notifiable weeds could have caused the project to lose traction but their faith in the project kept it going and has been justified by the results at Knepp.

As a writer and journalist, Isabella has done a great deal to raise awareness of the Knepp project and rewilding in general. Her book, *Wilding*, which has been well-received both by the professional ecological community and

the wider public, not only explains in a very straightforward and non-technical way the changes at Knepp, but also other rewilding projects around the world. It was described by *The Sunday Times* as "one of the landmark ecological books of the decade".

The very visible success of the Knepp project, the eco-tourism ventures which brings people to see the estate, the articles, books, and media appearances have all contributed to a higher public understanding of the whole concept of rewilding. The high-profile nature of the project has influenced UK and English nature conservation policy.

Isabella Tree and the Knepp project represent a catalyst for change in our attitudes to land management, particularly in areas of marginal agricultural value. This can only be of great benefit to society as we seek to respond to the linked threats of climate change and biodiversity loss.



Dr John James Hopkins

Outstanding Contribution to Understanding Climate Change Adaptation and Ecosystem Services

Dr John James Hopkins is a highly influential ecologist and botanist who, from the early 1980s until his retirement in 2012, spent his career working for Natural England (NE) and its predecessor bodies, the Nature Conservancy Council (NCC) and English Nature (EN), as well as the Joint Nature Conservation Committee (JNCC).

His PhD (University of Bristol 1983) was entitled 'Studies of the historical ecology, vegetation and flora of the Lizard District, Cornwall with particular reference to heathland'. This is widely regarded as a seminal piece of work and the quadrat data and vegetation descriptions were subsequently used by the National Vegetation Classification (NVC). He has remained involved with conservation and research at The Lizard for more than 40 years.

John began work for the NCC as the Assistant Regional Officer for County Durham and then spent six years as a national grassland specialist with NCC and EN. He made an important contribution to the conservation of British grasslands, particularly through his work on the designation of grassland Sites of Special Scientific Interest (SSSIs), the production of technical guidance and training, as well as raising public understanding. He moved to the JNCC in 1992, as scientific lead on the implementation of the EU Habitats and Species Directive in the UK and was the official scientific representative of the UK government at related EU meetings.

John then returned to work for EN (later becoming NE). During this phase of his career he made a notable contribution to a range of work areas, but particularly climate change adaptation and ecosystem services. The guidance on climate change adaptation he was lead author of, has been widely used and referred to and he joint authored the England chapter in the 2011 UK National Ecosystem Assessment. He also contributed, in 2006, to the identification of 100 ecological questions of high policy relevance in the UK. During this period, he retained an interest in semi-natural grasslands and he was involved in organising a British Ecological Society/British Grassland Society/BSAS conference in 2007 on high value grassland, with an emphasis

on ecosystem services. This culminated in the publication of a proceedings of which John was the senior editor.

Since retirement, John has continued to contribute to ecology and he continues to publish erudite and influential articles and papers on topics such as climate change refugia, conservation of crop wild relatives, the ecological impacts of light pollution and the use of pesticides.

John has a considerable depth of knowledge and understanding of British habitats and wider ecological processes and he has made an outstanding contribution to ecology and environmental management over his career.



Winner Tony Bradshaw Best Practice Award Winner (see page 4)

Thorne Moors Water Level Management Plan

JBA Consulting

In 2009 JBA was commissioned by Treen Bridge Internal Drainage Board to produce a Water Level Management Plan (WLMP) for Thorne, Goole and Crowle Moors; England's largest lowland raised mire, a SSSI, SAC, SPA and NNR. The site is home to a number of rare species, including the Pin-palp Beetle *Bembidion humerale*, and Mire Pill Beetle *Curimopsis nigrita* both of which are dependent on the peat that forms most of the site. Much of the site was worked for peat over generations but, during the post-war period, this became industrial in scale with extensive areas, especially in the northern part of the mire, becoming milled for peat and turned into an ecological desert. In the south of the site hand-cutting techniques were used, as peat was extracted for fuel, leaving a patchwork of baulks and cuttings, part of which (the Southern Canals) was designated in 1986 as a National Nature Reserve for its botanical interest, mainly *Sphagnum* mosses, bog vegetation and associated fauna.

The mire has been damaged by several hundred years of peat extraction and the aim of the WLMP was to identify measures to better manage water levels and bring the site back into favourable condition. This included ensuring that the correct depth of water required to permit the growth of *Sphagnum* mosses (especially *S. cuspidatum*) was maintained across the site, in spite of its varying topography. Implementation involved the innovative use of technology in raised mire restoration through the use of telemetry to monitor and control water levels on the mire

remotely. The mire was subdivided into a series of compartments, each of which was bunded with a fixed output weir controlling the water depth throughout the compartment. Groups of compartments were linked together in chains downstream with piezometers (trolls) measuring water levels at locations within the chain sending details via radio to a central system which is connected by a mobile phone signal to a central programmable database. This is also connected to a series of tilting weir structures that control the flow of water through the chains of compartments and, at the very bottom of the system, a pumping station. The structures also have water level monitoring installed and are pre-programmed to respond in certain ways when rainfall amounts are recorded or when water levels in compartments reach certain levels at certain times of the year.

All of the monitoring equipment on site, as well as the structures, are powered using photovoltaic cells linked to a battery (and solenoid in the case of structures) reducing the need for costly and potentially dangerous site-visits. The real-time data collected can be analysed and used to refine how the structures on site respond automatically to rainfall and water levels on site: this flexibility is essential as, over time as the mire becomes wetter and changes shape, flowpaths across and through the mire will change.

The gradual raising of water levels has accelerated the growth of the *Sphagnum* moss carpet and this is now beginning to colonise the baulk areas, with hummock-forming species (*S. papillosum*, *S. palustre*)



growing on the interface between the two, with the older stems senescing and (potentially) turning to peat: some of these hummocks are now growing healthily above the level of the water table, leading to paludification and, in time, the growth of a new bog surface.

The milling 'flats' have also been kept wetter during the summer months, when rainfall is low on the East side of the country, allowing *Eriophorum angustifolium* rhizomes to produce new plants which survive, binding the peat and preventing desiccation, exfoliation and subsequent wind erosion. These plants, and rows of Birch brush, are also now acting as foci for *S. cuspidatum* colonisation, keeping the surface wet, all of which is allowing the vegetated area to increase annually, closing the sward gaps and eventually forming an actively growing surface, i.e. a functional ecosystem.



Highly Commended

Scottish Invasive Species Initiative

Scottish Natural Heritage (now NatureScot)

The Scottish Invasive Species Initiative (SISI) is an ambitious partnership project delivering an innovative community-based strategic approach to the management of Invasive Non-Native Species (INNS) in rivers and watercourses in northern Scotland.

The 4-year project commenced in November 2017 and employs a team of six full-time and two seasonal staff. It is led by Scottish Natural Heritage (now NatureScot), working with ten delivery partners (local fishery trusts) and one academic partner (The University of Aberdeen). A key component of the initiative is its scale. The project covers over one third of the Scottish mainland. It is important to work at such a scale for highly mobile species such as mink and highly dispersed species such as riparian invasive plants. For example, mink control is being undertaken simultaneously across 43 adjacent river catchments.

The project is also using a sustainable, lower cost, volunteer-led approach to achieve its ambitious aims, and thereby maintain the biodiversity gains in the long term.

So far over 1,500 km of riverbank infested with giant hogweed has been treated and 144,185 Japanese knotweed stems injected with herbicide. Over 300 volunteers have been recruited who have established and maintain a network of nearly 600 American mink rafts and traps. The locations of the mink rafts and traps is guided by a strategy, created in partnership our academic partner, allowing us to target our efforts and make the greatest impact. To date, 165 mink have been dispatched, providing a vital relief in the restoration of water vole populations.



Commended

Yorkshire Water Biodiversity Programme

Yorkshire Water

Supported by Natural England (NE), Yorkshire Water (YW) undertook a mapping exercise of its land ownership (c.70,000 acres) to semi-quantify the 'value' of the land for biodiversity by assessing habitat distinctiveness and asset location with regard to landscape criteria such as B-lines or former Nature Improvement Areas (NIAs). YW used this information alongside input from its external Biodiversity Steering Group, to develop the criteria for conservation projects. Unlike previous business cycles, these were not constrained to the company's landholdings, but were a blend of land identified by the mapping or projects focused on mitigating operational impacts on a landscape.

The programme has led to c. 1690 ha of priority habitat being conserved or enhanced, involving over 944 individual volunteers who gave up around 11,800 hours of their time. Outputs included:

- 20.3 Ha of reedbed was created or restored adjacent to sewage works and river abstractions
- 1519.4 km of rivers and streams were restored and conserved across Yorkshire
- 7 ha of deciduous woodland was planted across Yorkshire
- 13.5 ha of species rich grassland was brought under management across the R.Dearne landscape corridor
- 8 ha of scrub willow managed for willow tit at sewage works along the Dearne
- 3.4 ha of wet woodland was restored along the R.Don
- 24.4 ha of ponds were created across YW sites
- 79.9 ha of floodplain grazing marsh was restored across urban Sheffield and Rotherham
- 13.13 ha of upland hay meadow was created on YW's rural estate



Winner

North West Rare Plant Initiative

Joshua Styles with Chester Zoo, Lancashire Wildlife Trust and the Wild Flower Society

The North-West Rare Plant Initiative (NWRPI) is a regional conservation effort targeting over 40 vascular plant species within the region of NW England, aiming to conserve them primarily by using *ex situ* cultivation methods, followed by reintroduction and reinforcement. The project began in August 2017 not long after Josh Styles graduated from Edge Hill University and was started from a small scholarship he was awarded at that time by his university.

Since its beginnings in 2017, through the fantastic efforts of partners and partner organisations, the NWRPI has been able to undertake over 30 reintroductions. Of these, ongoing monitoring has revealed that 40% have shown an increase in abundance and/or distribution, 47% have remained stable, whilst only 13% have

been found to have undergone declines. The NWRPI reintroduction protocol adheres to IUCN and JNCC translocation guidance. Monitoring is undertaken once within a 6 month period following introduction, whilst ongoing survey visits are conducted at least once annually following this.

The NWRPI significantly contributes to nature conservation. This includes the Greater Manchester (GM) Mosslands, which includes the Manchester Mosses SAC. During 2018, following extensive suitability surveys across the GM Mosslands which includes Highfield Moss SSSI, Risley Moss SSSI, SAC, Astley Moss SSSI, SAC, Cadishead and Little Woolden Mosses LWS and Holcroft Moss SSSI, the partnership including NWRPI secured consent from Natural England

for the reintroduction of several plant species including White Beak-sedge (*Rhynchospora alba*), Lesser Bladderwort (*Utricularia minor*) and Great Sundew (*Drosera anglica*). These reintroductions have been made necessary following the widespread drainage and loss of mosslands from the 1800's.

White Beak-sedge now exists on all major GM peat basins and has seen an increase in population size of over 150% during 2019. Propagules of this species have been moved across all sites to aid dispersal during winter this year and it's hoped that this plant, a species that should be a major component of the vegetation, continues to re-establish in the future as it has done in recent times. This is important also, as White Beak-sedge is the primary listed foodplant



for the Large Heath butterfly, which Lancashire Wildlife Trust in cooperation with Chester Zoo, are reintroducing across the mosses later in 2020.

Lesser Bladderwort was reintroduced to Risley and Astley mosses during 2018, from a stock of around 30 plants for each site. These were sourced from the last remaining population in the area, sited in Delamere forest. Following reintroduction, the population estimate for Astley Moss now exceeds 29,000 individuals, whilst the estimate for Risley exceeds 3,000. This 'Vulnerable'-listed species has dramatically increased its population size and distribution across the Manchester Mosses SAC and ,thanks to the efforts of NWRPI, its futures are near-secured for the area, following extinction over 150 years ago.



Highly Commended

Howden Rock Ramp

AECOM/West Lothian Council/ Forth Rivers Trust

Howden Weir, on the River Almond at Livingston, was a major barrier to fish passage and an impediment to the river's natural functioning. Part of Forth Rivers Trust's RiverLife: Almond & Avon Project, the weir has been transformed into a 100m-long rock ramp that has restored the river to a more natural state and benefitted fish species and wider biodiversity.

Fish species of conservation interest in the River Almond – Atlantic salmon, brown and sea trout, and European eel – are constrained by barriers in the form of redundant weirs. These weirs and their associated lades etc also affected natural hydrological processes, altered erosion and caused sedimentation.

The new rock ramp removes a major barrier to fish migration and increases the available area of suitable habitat for spawning and feeding upstream. Complete remediation of Howden Weir will enable natural river processes to develop and fish populations to increase,

which will benefit predators such as kingfishers, herons and otters.

The future of an in-channel island, with its mature woodland habitat and otter refuges, was ensured by building the rock ramp around it. This approach stabilised the island, which was being eroded away, and retained its mature trees; the team also re-planted understory vegetation. A series of resting pools and slower-flowing channels were also created within the rock ramp to enhance fish passage and provide excellent foraging locations for otters.

Two invasive non-native species (Japanese knotweed and giant hogweed) were present on the island and adjacent river banks. As part of the fish pass installation, these species were eradicated by encompassing propagative material within the rock ramp – a novel approach that eliminated INNS entering the waste stream. The spread of INNS represented a primary threat to the project's overarching aim of increasing biodiversity and controlling it was a high priority.



Winner

Lanscove Holiday Park

Park Holidays UK Ltd, Lanscove Holidays Ltd, BSG Ecology

Lanscove Holiday Park is located on the 'English Riviera' adjacent to the South Hams SAC (designated for greater horseshoe bats). The main constraint on a proposal to extend and modernise the site was biodiversity. Baseline surveys established that SAC bats commuted from a maternity roost at Berry Head (500m NW) along the northern and southern site boundaries. There was therefore potential to impact upon commuting routes, and reduce foraging opportunities within and close to the Holiday Park through land-use intensification and increased disturbance and light levels.

The Ecological Management Plan (EMP) aimed to avoid impacts on SAC bats and increase the population's resilience through mitigation devised to provide holistic support for their complex ecological requirements. Specific objectives were to: maintain and enhance existing habitat used by SAC bats; create habitats of value to commuting and foraging SAC bats; avoid impacts from light pollution; and provide new night roosting opportunities. The approach taken needed to recognise the multiple factors affecting the viability of the bat population at Berry Head and in the wider SAC.

Mitigation and enhancement included:

- Securing a long term management agreement to deliver enhanced year-round foraging resources for horseshoe bats on six hectares (ha) of land through the re-establishment of organic grazing on derelict pastures (3.15ha), the reinstatement of traditional haymaking and aftermath grazing. This has included restoration of 2.17ha of lowland meadow.
- Regeneration of the dung invertebrate community, to increase the diversity and abundance of species present which provide an important food source for greater horseshoe bats emerging from hibernation, in early summer and for juvenile greater horseshoe bats.
- Restoration of species-rich grassland, improving the moth community; a key prey group for bats in mid-summer.

- Designing night roosting opportunities into stock shelters to maximise local utilisation of food resources within meadows and pastures.
- Provision of new traditional Devon bank hedgerows (345m) for commuting and perch feeding and new mixed native hedgerow (354m).
- Provision of new broadleaf woodland (0.19ha) and native scrub (0.75ha) to provide foraging opportunities in spring.
- Strengthening existing flight lines through buffer planting and parallel hedgerows.
- Modelling light spillage to inform measures to ensure a maximum illumination of 0.5lux along perimeter hedgerows.
- Installation of low-level directional lighting with limited spill throughout the Holiday Park.

Monitoring of the effectiveness of mitigation and management prescriptions (2013-2019 inclusive) involved: dung beetle surveys; roost counts; fixed point acoustic monitoring; and walked transects. Thermal imaging was included from 2015. Results were considered with reference to counts of the maternity roost at Berry Head.

In relation to the greater horseshoe bats population monitoring has shown:

- Foraging activity in the restored pastures has increased steadily. In 2018 foraging activity recorded on visits between July and September was



between 1.75 and 5 times greater than baseline (2013) levels, and in August 2019 up to 20 times the level of activity recorded in 2013.

- Greater horseshoe bats are using the night shelter roosts most nights. These are also used by lesser horseshoe bats and breeding barn swallows.
- Commuting routes along the site boundaries remain in use, with 2019 activity levels being slightly higher than those recorded in 2013 at key monitoring points north and south of the holiday park. Measurements have demonstrated that maximum lighting levels of 0.5lux have been achieved along these routes.
- Roost counts at Berry Head indicate the colony has remained constant throughout

This monitoring completed from 2013-2019 has demonstrated that all of the objectives have been met, and that cost of ecological inputs (£156k) has been considerably outweighed by the economic benefit and the conservation gain realised.



Highly Commended

A536 Congleton Link Road (Design and Build) Mitigation

Arcadis/John Grahams Construction Ltd

Vanhe A536 Congleton Link Road comprises a new 5.7km single carriageway link road between the A534 Sandbach Road and the A536 Macclesfield Road in Cheshire. Arcadis revolutionised the adopted mitigation strategies for GCN and badger, implementing current best practice and innovative techniques.

The GCN European Protected Species (EPS) license made use of NE Licensing Policy 1, to include a significantly reduced trapping effort in place of increased investment in the provision of compensatory habitat. This included the following elements over and above the draft EPS licence adopted from preliminary design:

- 6445m² extra land designated as GCN mitigation area (total area: 62,855m²).
- 3 extra GCN ponds and an increase in total new pond surface area of 3400m² (10 ponds created in total).

- enhancement of an additional 5 ponds (equating to 3700m² extra surface area; 9 ponds in total).
- An extra 2900m of hedgerow planting (9200m in total).
- 1.84ha and 8.13ha of scrub and woodland planting (total of 2.44 ha and 13.23 ha), respectively.
- an extra 17 hibernacula and 26 refugia (41 and 62 created in total, respectively).

The approved development plans included the licensed exclusion and closure of a badger sett with the creation of a compensatory artificial sett. This would have resulted in a lengthy exclusion process, the loss of an active extensive sett complex (spanning 102 linear metres) and the loss of an associated mature hedgerow with mature trees. Arcadis mapped the tunnel entrances and predicted chamber



locations based on local topography. Working with the contractor, a trench was excavated and an underground fence was installed to segregate the works from the sett. A *live* dig of the main badger sett was successful as no tunnels were found and the sett was retained untouched. Further, post works monitoring has indicated that the sett is still active.

Commended

Beaconsfield Eastern Relief Road

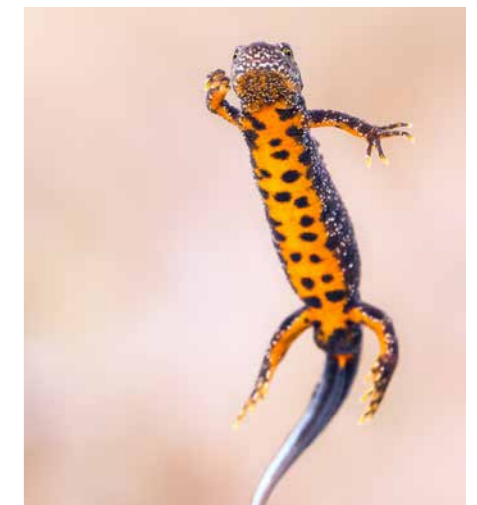
Stantec, Balfour Beatty and Buckinghamshire County Council

Stantec (formerly PBA) were commissioned in 2017 by Balfour Beatty on behalf of Buckinghamshire County Council to prepare the detailed design of the A355 Improvements scheme and support its subsequent construction.

A key to the successful identification and delivery of innovation through ecological mitigation and enhancement was the extensive collaboration of Stantec's ecologists with the arboricultural consultants, engineers, landscape designers, contractors and the councils' ecological advisors.

The novel and innovative design for the drainage system holds water to a specified depth and then allows infiltration into the ground via an overflow. In addition to providing an effective drainage design, the design also allows the ponds to provide enhanced habitat opportunities for GCN.

Other innovative approaches to mitigation included the approach to the detailed design of bat hop-overs. The detailed design included for the use of extra heavy standard tree planting to aid the establishment of the hop-over feature, maintaining continued ecological functionality. Cross-sections of the hop-over were prepared illustrating what the hop-over would look like on completion of the construction stage and at tree maturity, to visually demonstrate the proposed mitigation solution to the client team. The design of the second hop-over required extensive collaboration between the ecology and engineering teams given its location in a potential pedestrian and vehicle conflict zone. Consideration of both the vertical and horizontal pattern of light spill (evidenced with modelling) was used to position the hop over to determine the most effective mitigation solution.



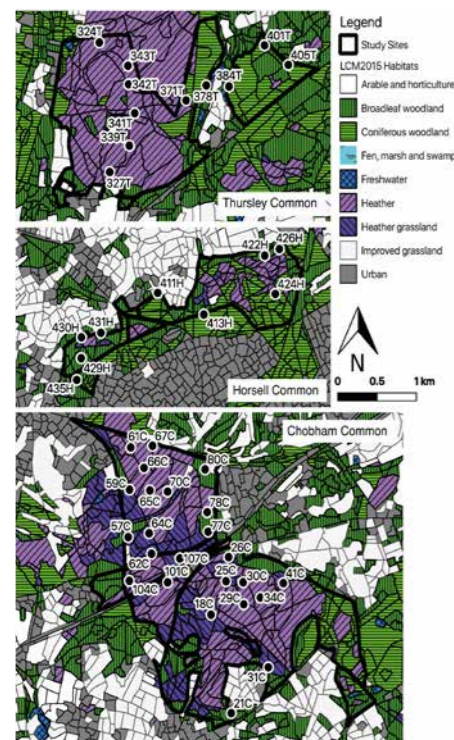
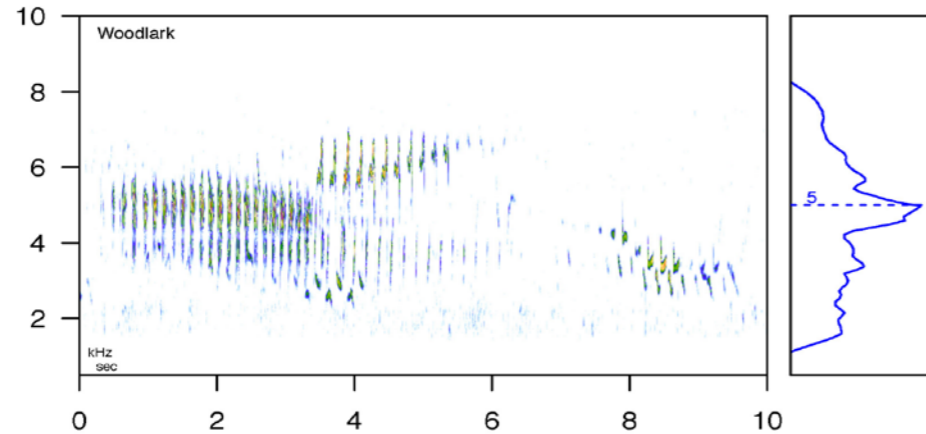
Winner

Heathland Birds Bioacoustics Monitoring

Baker Consultants Ltd and Natural England

New technology provides the opportunity for innovative fieldwork and assessment methods, enabling potential benefits to the monitoring of notable species and management of important sites. Bioacoustic monitoring has transformed the understanding of bat and cetacean ecology in recent years, but so far, has been little used for other taxa – despite a rapidly increasing scientific evidence-base.

In 2018 in the first project of its type in Europe, and one of only a handful of similar studies undertaken globally, Baker Consultants recorded bird song at 44 sites within the Thames Basin Heaths and Wealden Heaths SPAs using automated recording units. These sites are internationally designated for their breeding populations of European nightjar, woodlark and Dartford warbler. The data gathered from bioacoustic monitoring, indicating the presence/absence of species detected during the survey, was assessed within an 'occupancy modelling' framework. This is a relatively new statistical analysis method that



allows population density ('occupancy') to be calculated, whilst also taking into account the accuracy of the survey method ('detectability'). The study is also the first in the UK to undertake a large-scale survey for multiple bird species using automated recorders. It therefore expands the geographic scope of case studies for these methods, and applies them in a new habitat, beyond the American forested ecosystems in which most previous studies have been located.

The joint project with Natural England allowed for this audio data to be used to determine the population sizes of the three target bird species, demonstrating that the method could be used effectively to monitor the conservation status of the birds on the site. The final reports and method statement presented to the Joint Strategic Planning Board in June 2019 and the project has since been used to demonstrate the suitability of this approach for site assessment to

stakeholders and a wide range of other audiences.

One of the benefits of the approach taken in this study is its ease of replication. The automated recorders used were off-the-shelf commercial units, the software for call analysis (Kaleidoscope Pro) is also widely available and currently used by a number of organisations. Statistical analysis was conducted in open-source R and the code scripts have been made publicly available in a permanent data repository (Zenodo). As such, the project could be repeated by others on different sites, and with different species, as appropriate to their own project needs.

In addition, the project has also prompted the development of a draft protocol for bird bioacoustics, published in CIEEM's In Practice, has been included as a case study in a CIEEM webinar and training workshop on bioacoustics, and delivered at talks for the BES and UK Acoustics Network.

Highly Commended

Using High Frequency Noise to Enhance Bat Mitigation Measures

BSG Ecology, The Ecology Consultancy, Temple Group, University of Bristol and HS2 Ltd

The HS2 line between London and Birmingham will pass between areas of ancient woodland that support populations of Bechstein's bat, potentially severing flight lines and risking death or injury of bats. Viable primary mitigation solutions were concluded to be 30m wide green bridges, large underpasses and, for 800m, a covered structure designed to provide a physical barrier between bats and the trains. However there remained a potential risk that bats would fly into the portals of the structure. In addition it was unclear how quickly bats would find and adopt flight lines along new hedgerows connected to green bridges and underpasses.

The project team researched the potential for using high frequency noise to dissuade bats from entering the tunnel entrances and help guide them onto new flight paths. Field studies were completed

over two years under a Natural England research licence. These involved the operation of an array of high frequency speakers at 20-minute intervals while monitoring bat behaviour using infrared video and thermal imaging cameras. Additional mitigation subsequently implemented to avoid undesirable noise emission beyond the 'treated airspace' involved funnelling the noise and providing sound barriers based on the findings of the modelling of the sound.

The system was found to be effective at deterring bats; a 98% success rate within 10m of the speakers was recorded, and effects on bat behaviour up to 20 m in front of and 10 m behind them noted. It was also found that the sound could be managed, funnelled and focused using a variety of techniques including barriers, angling of speakers and sympathetic landscape and structural design.



This work has demonstrated that high frequency noise can be applied to enhance mitigation measures aimed at protecting bats from potentially lethal environments and improve the uptake of new flight paths.

Commended

Machine Learning: Automated Location of Invasive Non-Native Species

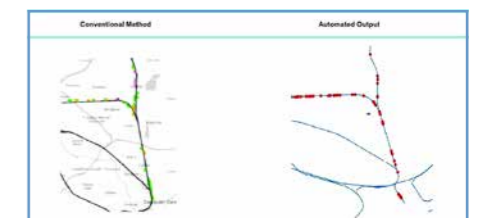
Mott MacDonald Ltd

The development of this new tool is part of an ongoing effort to improve the methods used to understand the exact extent of invasive species, develop a historical record of their spread and simulate their future spread. The aim was to provide a resource that will inform the management efforts while providing improved efficiency and safety.

The project was undertaken by a multidisciplinary team using internal research funding at Mott MacDonald. The 'best in class' machine learning technologies were applied to pre-collected and already available data sources. For the first task, an in-house object detection single-shot-style deep neural network, based on the YoloV3 research project

(Redmon et al., 2018), was developed. This algorithm was trained using data obtained using traditional methods and this proved successful for Japanese Knotweed.

For the second task an object detection and instance segmentation algorithm that is an adaptation of the Mask R-CNN research project (He et al., 2018) was developed in-house. This algorithm highlights the pixels in an image that belong to an identified object. The data from the first task in addition to the data from a previous linear ecology project were used to train the algorithm to identify Japanese knotweed in 4cm per pixel aerial imagery of all rail right of way in Wales with a high success rate.



Winner

Managing Grassland Verges: A Best-Practice Guide

Plantlife

This project compiled and disseminated best practice guidance for road verge management and is engaging with highways authorities to support adoption.

Plantlife identified the need for authoritative guidance to support national transport and biodiversity strategies that seek to maximise the natural capital of the soft estate and government ambition for biodiversity net gain. Extensive engagement with industry, highway authorities and wildlife organisations began at a symposium in May 2018 and continued throughout during autumn 2018 and 2019 to share knowledge, agree best practice and develop case studies to tackle key challenges in managing the soft estate.

The project fulfils two key recommendations in the Government's National Pollinator Strategy, three of the four outcomes in the Action Plan for Pollinators in Wales, two objectives of the Pollinator Strategy for Scotland and two objectives of the All-Ireland Pollinator Plan. In addition, it supports the recommendations of the UK Government's 25 Year Environment Plan including nature recovery networks e.g. adoption of the management prescription across the rural road network would create over 50,000 hectares of wildlife-rich habitat.

Plantlife convened and managed a steering group of skilled professionals from relevant organisations to secure key stakeholder support and endorsement including industry: Kier and Skanska; statutory agencies: Highways England, Transport Scotland, Welsh Government, Natural England and Scottish Natural Heritage, and NGOs: Plantlife, Butterfly Conservation, the Wildlife Trusts and the Green Infrastructure Partnership.

The resulting guidance, published in September 2019, focuses on the management of lowland and upland grassland verges identified as increasingly important for the conservation of our native flora and the pollinators and other wildlife this supports. The guidance was launched to around 100 key stakeholders at a one-day symposium hosted by the



partnership, followed by a national media launch a fortnight later, and subsequently at the Green Party Autumn Conference in October 2019.

The published document supports governments and agencies in delivery of their statutory duties and biodiversity net gain obligations, as well as industries' corporate social responsibilities to reduce environmental impacts. Adoption of the

management guidance will also ensure road verges contribute towards national targets to improve ecological connectivity and improve habitat and species resilience to climate change. In England, this equates to a potential contribution of 111,225 miles of verge habitat, in Scotland 35,000 miles and in Wales 29,000 miles.

Highly Commended

Llyay Eastern Command and Custody Facility

North Wales Police and Crime Commissioner and Eco-Scope Ltd

The project to develop brownfield land into a command and custody facility began with a Phase 1 survey of the site in July 2013. This survey identified habitats including calcareous dry grassland, marshy grassland and ponds with the potential to support great crested newt (GCN). GCN were subsequently confirmed within 250m of the site and additional surveys for bats, breeding birds and invertebrates resulted in a list of species considered locally rare, including Dingy Skipper butterfly and Common Whitethroat.

A list of Key Performance Indicators (KPI's) was drawn up which included four species of orchid, two butterflies and three breeding bird species listed in the Birds of Conservation Concern (BoCC) Amber or Red lists. Prior to the site strip, orchids were systematically dug up from the proposed car park location and some of these were translocated to the

Wildlife Trust's 'Wrexham Industrial Estate Living Landscapes Scheme', others were distributed to participating schools in a STEM activity 'orchids for Schools'.

Monitoring continued throughout the construction phase. Publications and reports disseminated the community and biodiversity benefits via an appointed Social Value Officer. A policy of keeping material on site was used to create innovative landscapes and topography of hollows and mounds. The building was completed in November 2018 and officially opened on 2nd May 2019.

A 'Bioblitz' was inaugurated on 18th May 2019, culminating in records of 240 species submitted to 'Cofnod' and maintained in a site-specific dataset accessible to anyone who wishes to submit data.



Subsequent recording throughout the 2019 recording season has added 11 species of dragonfly, 18 butterflies, 21 moths, assorted bees, wasps and soldier flies and 150 flowering plants.

Commended

Strategy for Managing Breeding Birds on Construction Sites

Mott MacDonald Ltd

The Breeding Bird Strategy provides an opportunity to show all contractors working on a site how, through a series of positive measures, everyone on site can 'respect' the rules and environment that support breeding birds. Much of the Strategy has been prepared using experience gained over three years while working on a major infrastructure project in the SW of England and, after discovering that there are very few resources or relevant guidance available, setting out comprehensively how to manage nesting birds on large construction sites.

The Strategy outlines the legal context around breeding birds and particularly how they may be managed most effectively when their presence conflicts with complex construction operations. It has two key aims:

- i. To ensure breeding birds on site are protected in accordance with legal obligations under biodiversity legislation;
- ii. To adopt a proactive approach to minimising risk of significant disruption, delay and additional cost to the project arising from nesting birds.

The strategy was initially developed in early 2018, based on Mott MacDonald's experience of breeding bird behaviour at the site since 2017. Since then it has evolved and become a responsive document that continues to keep pace with construction on site and our growing understanding both risk and solutions.



Winner

Keyn Glas Environmental Designated Funds (EDF)

Highways England, Arup, Cornwall County Council & Cornwall Wildlife Trust

Highway England's Keyn Glas* Environmental Designated Funds are an initiative designed to go beyond business as usual, working with local people to enhance the Cornish landscape, to benefit communities, wildlife and the environment.

The scheme offers 17 projects to deliver multifunctional benefits, spread across approximately 50km² of Cornwall's varied landscape. Each project identifies and delivers environmental benefits, but it is together that these projects offer benefits beyond the sum of their parts; contributing to the enhancement and restoration of habitats and landscapes, reducing risk of climate change impacts, and improving cultural and recreational opportunities. This is helping to ensure a long-lasting legacy and guardianship of the environment in Cornwall.

Stakeholder engagement was specifically tailored from the outset to facilitate maximum inclusion and involvement for each individual project, with explicit consideration of the local cultural context, including: workshops with local Parish Councils to gain understanding of local issues and to enable responsive and appropriate design solutions; and community workshop evenings to initiate conversations directly with the farming

community to present a palette of locally appropriate green and blue infrastructure interventions, including their benefits to and impacts on farming. These workshops were well attended and very positive, often stimulating conversations between farmers about integrated and co-ordinated stewardship of the environment.

Farm Liaison Officers from CWT were commissioned to conduct landowner engagement. This local farming knowledge enabled design development to ensure landowners requirements were met and understood, while guaranteeing the delivery of the project's environmental objectives.

An online digital platform was developed specifically for the project, enabling work, documents and calendar sharing and storage between the stakeholders to allow for a smooth flow of information and knowledge sharing.

Landowner participation is voluntary and the design approach is underpinned by collaboration. The 17 individual projects have been developed in partnership with a Steering Group (SG) and 13 key stakeholders. As a result of a number of community events and face-to-face design meetings held, over 64 landowners/tenants have elected to participate.

Monthly Thematic Working Groups (TWGs) brought the stakeholders together to allow for transparent access to and timely feedback on evolving designs and to coordinate stakeholder's interests. These focused on technical aspects and designs.

Projects are modular, with landowners able to choose to be a part of the design of Cornwall's future landscape. Engagement with the communities and stakeholders is fundamental. Project designs were circulated in advance of TWGs to allow stakeholders to hold focused discussions and contribute to the collaborative design process. Approval Workshops were programmed, with the purpose of producing a formal and transparent Collective Design Mandate; providing an effective collaborative environment and an opportunity for consensus-driven review and approval.

The project concept and feasibility were developed by Arup in partnership with Cornwall County Council (CCC) and Cornwall Wildlife Trust (CWT) in 2017-2018. In December 2018, Arup was commissioned to progress the projects through detailed design. The projects will be delivered in a phased way from 2019 through until 2025.

* meaning 'Green Ridge' in Cornish.



Highly Commended

Bird Aware Solent

Bird Aware Solent Partnership

Bird Aware Solent provides a strategic response to recreational disturbance of the 125,000 overwintering bird that return to the Special Protection Areas along the Solent coast each year. The Partnership comprises of 19 organisations and has been operating since 2013.

In 2014, the Partnership started operating under an interim strategy. This was replaced in 2017 with a more comprehensive definitive strategy and outputs of the Partnership have been monitored since 2016. Such a wide membership of the Partnership brings a wide range of viewpoints and expectations for what the strategy can deliver. A consistent and professional approach, led by a strong Chair, managed to bring about a consensus of opinion over time.

Since Winter 2016, Bird Aware Solent Rangers have been recording engagement activities with coastal users. These

interactions focus on inclusive and positive messaging and building rapport with members of the public. To date these have totalled over 25,000 interactions. This work is vital to the long term success of the project as it seeks to build consensus and bring about behaviour change over time.

This work is further supported by high quality outreach materials, a social media presence and a website providing engaging and background information. In 2017 the easily understandable Bird Aware Solent brand was introduced, replacing SRMP branding. This brought a step-change in outreach as the general public had a much greater appreciation for, and connection with, the focus of the Partnership's work. Now the Partnership is actively promoting use of Bird Aware to other similar mitigation schemes and has already welcomed Bird Aware Essex Coast



to the brand. Discussions continue with other Partnerships and it is expected more will become brand partners soon. This will assist with education and engagement activities on a national scale.

Commended

Connecting Burton and the Trent Washlands; A New Vision

Black & Veatch; The Environment Agency; East Staffordshire Borough Council; The National Forest Company; Staffordshire Wildlife Trust; Trent Rivers Trust

This project produced a strategic vision for the Washlands with the following objectives: to improve the Washlands as a space for both people and nature by:

- enhancing biodiversity within the Washlands,
- creating more accessible and legible links between the town and the Washlands, and
- providing interpretation and education on the range of habitats found throughout the Washlands.

Key to the project was engaging with stakeholders and partners and developing an ambitious but achievable shared vision that reflected their strategies and aspirations and the aspirations of the wider public. This vision was developed between 01 March – 13 July 2018, culminating in its publication

via an interactive 'storymap' on the East Staffordshire Borough Council (ESBC) website. The project included a 'Natural Capital Register', identifying and evaluating existing habitat types to use as a tool when identifying where enhancements are most needed, and Ecosystem Services Valuation – an analysis of the goods and services provided by the existing environment of the Washlands, and provided by the enhancements proposed in the vision.

This storymap sets out the vision within an engaging interactive digital format. It includes interactive map-based information, raises public awareness of and interest in the area's existing cultural heritage, recreational opportunities, and natural environment; describes the process and background to the new landscape vision, the roles of the partners, and



demonstrates how public consultation has informed the proposals; outlines the strategic vision in a set of 'clickable' maps, artist's impressions and precedents of similar successful schemes; and presents technical concepts such as the Ecosystem Services Valuation in an accessible way, using plain English and intuitive graphics. This demonstrated how the vision would benefit local deprived communities and supported funding opportunities.

Winner

Baker Consultants Ltd

Baker Consultants Ltd's team of 9 ecologists and environmental managers works with a wide client base ranging from charitable organisations and local authorities, to large infrastructure and housing developers. At any one time the team has over 250 active projects. Each project is approached with the same robust scientific rigour and determination to secure outcomes that serve the clients' needs as well as furthering nature conservation and biodiversity enhancement.

Key projects include Brightwell Lakes, a development of up to 2000 homes in Suffolk close to the A12. This project demonstrated the team's ability to carry out effective negotiation with stakeholders to allow the development of 2000 homes and the creation of a large recreational mitigation package for public access to nature whilst preserving a sensitive wildlife site. The project won the 2019 Planning Award for placemaking (500 homes or more).

Dearne Valley 'On the Verge' was a very different type of project. This was a public sector project, for which the team delivered botanical surveys, effective public engagement and training to assist in the protection and enhancement of roadside verges. Baker Consultants Ltd's aim, through training volunteers, was to deliver outcomes that would have a long legacy beyond the life of the commission.

The company has also been involved in the high profile and innovative Thames Basin Heaths project. The quality of the mitigation proposed by the team, including over-delivery of onsite SANGs, creation of a nature reserve and restoration of part of the SPA, led to a landmark planning decision for a residential development within 400m of the boundary.

In addition to delivering projects on behalf of their clients, Baker Consultants puts considerable resources into research and development and to actively raising standards within the ecology profession. Team members are encouraged to develop specialisms in line with their interests and the business needs. This includes supporting staff to pursue part-time further education, research, exploring the introduction of



new technologies and processes including drones, remote cameras, thermal imaging and new data analysis techniques. Their approach to managing the team and encouraging their professional development enables them to deliver the highest quality service to their clients.

The team are committed teachers and trainers, working both within the company and externally. They regularly speak at industry conferences, offer training to

clients, and actively disseminate their research, including publishing papers in InPractice and scientific journals. Senior staff deliver courses to other professionals and volunteers on bioacoustics, environmental law (via UKELA) and GCN survey and mitigation. Indeed the company's development of the use of bioacoustics for bats, cetaceans and now bird species is undoubtedly influencing how the industry collects and analyses data.

Highly Commended

DTA Ecology

DTA Ecology was established in 2015 and has, in this relatively short time, established an extensive public sector client base across the UK. Working with statutory advisers, DTA Ecology is closely involved with the delivery of detailed advice and practical guidance on the interpretation and application of the Habitats Regulations. Beyond influencing national policy, work led by DTA Ecology has delivered high quality practical outcomes in respect of ensuring protection to designated sites whilst removing barriers to sustainable development proposals.

DTA Ecology's strengths lie in the considerable influence which the consultancy exerts within a public sector client base and the ability to interpret the requirements of the Habitats Regulations within a 'real world' context.

Exemplar projects include a commission to provide detailed advice and draft text to

shape and inform internal guidance on the assessment of road traffic emissions under Habitats Regulations which was then published by Natural England in 2018. This guidance has rapidly become the standard approach for practitioners when considering the assessment of air quality impacts from traffic.

DTA Ecology has also provided detailed advice on the derogation provisions in respect of Tidal Lagoon proposals around Swansea Bay. The advice has been highly influential in consensus building amongst relevant parties and informed statutory advice from the nature conservation bodies.

Since establishing DTA Ecology in 2015 Dr Caroline Chapman has trained over 1000 practitioners in the interpretation and application of the Habitats Regulations. Delegates have included statutory agencies, competent authorities, consultants and plan/project advisers.



Caroline frequently writes articles for the Habitats Regulations Assessment Journal which are aimed at encouraging debate and discussion and sharing best practice.

Highly Commended

Dialogue Matters

Established in 2000, Dialogue Matters designs, facilitates, researches, trains, advises and evaluates stakeholder participation and champions best practice. Central to its work is the belief that multi-stakeholder dialogue is a key to successfully addressing the nature and climate emergencies.

Dialogue Matters works at all levels from local place-based dialogue to international strategic dialogue. They work across a variety of knowledge types, levels of tension, cultures and language differences, and across levels of education and status.

To date they have worked in 28 countries in the UK, Europe, Middle East, Central Asia, Africa, India, South America and the Caribbean. Outcomes of some of their projects include:

- Better management of some woodlands, heathlands, forests, water, rivers, marine protected areas, fisheries, coral reefs, protected nature areas, AONB and National Parks.

- People can adapt better to climate change impacts, food security, water, flood management and coastal change.

- Fresh momentum has been given to key International Conventions and agreements (e.g. UNFCCC, OSPAR, Jeddah, Pan Africa work on climate change)

- Participatory approaches to nature management have been adopted in Slovenia, Croatia, Guyana, and parts of Montenegro, Africa, India, Guyana and the Caribbean.

- Nearly 2000 people from over 28 countries have been trained to apply good practice participation in a myriad of topics from elephant and primate conservation to coastal engineering or environmental economics research.



Winner

BSG Ecology

BSG Ecology's team of 37 ecologists has continued to deliver high quality projects for a range of clients, ranging from single-site developments to projects spanning several European countries.

This included a study on behalf of the European Network of Transmission System Operators for Electricity (ENTSO-E) which ensured the routes of 150 proposed power lines were informed by a high level of ecological information.

Biodiversity net gain (BNG) has been a feature of the consultancy's work for several years. This includes facilitating biodiversity net gain solutions integral to achieving planning consent for the urban expansion of Oxford (Oxford North), a project predicted to deliver £150M / annum into the local economy, and for Cherry Hinton, Cambridgeshire. The former will deliver 12 hectares of species-rich habitats, including a 3 hectare extension of a local SINC managed by a community group, benefiting nature and people's connection with nature. The latter will facilitate the extension of Fulbourn Fen SSSI alongside 1,200 new homes.

For the Walthamstow Wetlands project BSG led baseline surveys, advised on habitat creation, and demonstrated, through ornithological monitoring, that impacts on SPA birds of the operational site had been effectively mitigated through the design process. The Wetlands have now become a hub for environmental education



and connection with nature, and are stimulating the local economy alongside effectively conserving wetland birds. The project received a Landscape Institute award in 2019 in recognition of cultural, social, economic and learning benefits to the local community.

Sharing learning and good practice is very important to the BSG team. They have delivered a series of collaborative

workshops with planning consultancies, legal practices and DEFRA to explain the concept of BNG to audiences including local planning authorities, developers and land owners. Senior staff have addressed the Minerals Products Association and RTP1 conferences (nationally and regionally), and privately-organised conventions of national house builders to help industry professionals understand the commercial realities and opportunities associated with biodiversity net gain.

Supporting and developing staff is a core activity and throughout the year they have provided over 50 days of health, safety and wellbeing training to technical staff. Other areas of training delivery include the company graduate training programme aimed at ensuring common standards in core consultancy skills in all new recruits. Led by experienced internal staff, this included training on extended Phase 1 survey, great crested newt, badger, bat and reptile survey, mitigation and licensing), legislation and policy, EclA, effective communication and business development. 24 days of externally-sourced technical ecological training to address specific staff development objectives.



Other initiatives included company-wide internally-delivered biodiversity net gain training and a programme of internal (lunchtime) CPD in all offices.

The company actively promotes CIEEM membership and chartership to staff, supporting them on their membership journey. It also provides *pro bono* advice and support to organisations such as the local Wildlife Trust as well as to graduates seeking to enter the profession.

Highly Commended

JBA Consulting

JBA Consulting is a multi-disciplinary consultancy and employs 34 ecologists and environmental managers. The environment, people and the economy are at the heart of JBA'S work and they aim to design and deliver high quality sustainable projects that deliver multiple benefits:

For example, the Pinch-Points project along the River Calder was commissioned by the Yorkshire Wildlife Trust (YWT). The aim was to identify potential river restoration options suitable for an urban catchment; ensuring that the interventions could be scaled up or down according to the availability of funding and resourcing. Soft interventions were recommended for 59 locations within the catchment. Indicative costs were calculated, and the information was presented in a user-friendly document designed as a manual of techniques that YWT can use to tailor the future management of the River Calder. If fully implemented, this work will have significant benefits for nature, people's connection with nature, business and the economy.

JBA is committed to sharing good practice and staff attend, and present at, national conferences including the River

Restoration Conference (RRC) and CIEEM annual conference. In 2018 JBA presented at the CIEEM annual conference in Ireland discussing JBAs bespoke Integrated Riparian Survey methodology. Additionally, JBA contributes to InPractice, other industry publications and teaches at two universities working alongside researchers, NGOs and charities.

As part of a JBA project, Catch my Drift, staff led three practical training sessions for Northumberland Wildlife Trust volunteers on ecological surveys such as harvest mice and use of camera traps. This enabled the volunteers to collect ecological data and monitor the site whilst promoting good shared learning and client-consultant collaboration.

JBA is committed to supporting the professional development of all staff and provide a generous annual training allowance for each staff member. This allows staff to identify and book onto relevant training courses themselves, giving flexibility to allow every individual to take charge of their own professional development, with support from their team leader to identify valuable courses for their needs.



Winner

Arcadis Consulting (UK) Ltd

During 2019, Arcadis demonstrated its commitment to delivering outcomes benefitting biodiversity, business and the local communities through a number of major projects.

This included leading the award-winning environmental design for the HS2 corridor between South Heath and Southam (HS2 Independent Design Panel). This involved combining nature and community with 10 mixed-use green bridges, 6 of which will create $\geq 30\text{m}$ wide eco-corridors whilst others will connect ecological networks with up-to-12m wide hedgerows and meadow margins. Of the 77 mitigation sites, approximately 50% will be accessible to the public, with measures such as boardwalks and education boards to encourage engagement.

Arcadis also provided the masterplanning and environmental services for Otterpool Garden Community (8,500 homes) and Phase 3A Northstowe Ecotown (3,500 homes) planning applications submitted in 2019 using natural capital (NC) and ecosystems-service approaches. These two projects maximise the multifunctional value of green infrastructure, providing landscapes with increased cultural heritage, recreation, water management, health and well-being values, and delivering +20% and +15% BNG respectively. Arcadis used Otterpool as a trial for the eco-metric on behalf of Natural England (NE). Both schemes were also used to trial the Natural Capital Planning Tool.

In embracing latest standards (NE EPS Licencing Policies), Arcadis estimate $>£1$ million of saving on the M4 Smart Motorway and the Congleton Link road (combined) reducing GCN capture effort, saving >90 programme-days and providing significantly greater habitat provision. The Arcadis approach also reduced health and safety risks to site operatives, reduced waste and plastics consumables, contributed to a reduced mileage, fewer carbon and pollutant emissions and lower use of fossil fuels.

Sharing knowledge and good practice shines through the company's work. Over the past year they have delivered 15 presentations on topics as diverse



as Natural Capital, habitat creation and restoration, sustainability, health and wellbeing, the Eco-metric trial and leadership and management. They have run 7 workshops, including for ecosystem services, soils and art, sustainability, pond creation and the benefits of biodiversity. There have been 3 articles for *InPractice*, including for EPS licencing, health and safety and Natural Capital and podcast on how the Natural Capital approach delivers biodiversity and drives climate and community resilience. The podcast received over 1000 'listens'.

All of the company's ecologists are CIEEM members and have a review process for technical capabilities with a clear pathway for each ecology discipline. Technical leads/champions are responsible for bringing ecologists through CIEEM-equivalent levels (basic/capable/accomplished), via objective-linked personalised training plans. Development-goal aligned internal training is provided, coupled with annual training sessions for the whole team. 2019's 2-day event at a Wildlife Trust Reserve included workshops on EPS licencing changes; data analysis and statistics; mental wellbeing, plus trialling data collection tablets and



360° cameras. Also, all graduates attended an intensive GCN course with examination. The Workforce for the Future Programme has engaging online learning to ensure that staff can embrace digital transformation and the Ecology Digital Working Group upskills ecologists in digital data capture and analysis (e.g. using tablets, 360° cameras, power BI and other platforms).

The company actively promotes equality, diversity and inclusion. The EDI Strategy has assigned role models and mentors to over 240 staff, trained 78 role models and 60 LGBTQ+ sector allies. Staff have shared their EDI stories over the company intranet, receiving $>22,000$ hits.

Arcadis has been part of CIEEM's Strategic Policy Panel (SPP) since 2018, advising on practice and policy for biodiversity net gain and Natural Capital. Arcadis has contributed to the CIEEM briefing paper on the Natural Capital approach and attended meetings at Westminster on behalf of the SPP on Biodiversity Net Gain, introducing Ecosystem Services in Agriculture which included presenting at the inauguration of the All Party Parliamentary Group for Biodiversity in July 2019.

Highly Commended

Atkins

Atkins' ecologists, supported by a network of equally conscientious sub-consultants, have continued to deliver high-quality outcomes on behalf of clients and for the benefit of nature and the communities in which they work.

The team has delivered practical solutions to clients' most complex ecological issues. For example, the ecological input into the East West Rail (EWR2) Scheme avoided or mitigated ecological impacts where possible and developed compensation and enhancement measures, across a total of 19 ecological sites, where impacts could not be avoided. Atkins Ecologists, as part

of the East West Rail Alliance, have enabled the Department for Transport to commit to ensure that the EWR2 Scheme is the largest UK infrastructure project to make a definite commitment to achieving biodiversity net gain. (BNG).

As well as improving the quality and efficiency of data gathering and mitigation the company is actively engaged in measures that will reduce the carbon footprint of both project work and operational processes, as well as encouraging and putting measures in place to enable staff to reduce their personal carbon footprint.

Over the last three years Atkins has developed criteria to assess ecological competencies of its staff, based on the CIEEM competency framework. In 2019,



Commended

Jacobs

Jacobs' UK ecologists work in integrated teams on large infrastructure projects influencing design decisions to benefit nature. They also provide advisory roles with public sector clients such as Highways England and the Environment Agency, allowing them to influence policy and planning for biodiversity.

Community involvement and improving people's connection with nature is a key element of the large projects that staff work on, such as HS2 and the A9 dualling programme. Jacobs is involved with Transport Scotland's Academy9 initiative,

which seeks to engage young people in education and training opportunities, aiming to expand the initiative to support apprenticeships and graduate training. Jacobs has over 1000 STEM ambassadors connecting with young people and actively supports higher education institutions by providing guest lectures and workshops. Project delivery in Jacobs is underpinned by a Quality system that encourages innovative approaches to sustainability and provides economic benefits clients and communities by using bespoke tools.

To enable access to best practice the company's Global Solutions and Technology (S&T) Initiative incorporates Communities of Practice (CoPs). These connect subject matter experts with

this work was published on the website and shared this in *InPractice*. Staff are now working with sub-consultants to ensure quality across the supply chain, as part of their upskilling of the ecology industry.

the wider team and enable knowledge dissemination and mentoring globally and across different lines of business. The Biology and Ecology CoP (628 members globally) encompasses eDNA and Molecular Monitoring, Marine Ecology, Natural Capital and Ecosystems Restoration Engineering.

The company also holds a series of 'Lunch and Learns', which provide opportunities to share project experiences, conferences and external training information. Recent sessions include Biodiversity Net Gain, sharing Ecological Clerk of Works experiences and planning objections on a flood protection scheme.

Commended

Mott MacDonald Ltd

Opening opportunities with connected thinking' is the Mott MacDonald mantra, driving collaboration and innovation to achieve success.

The company develops innovative tools, especially around ecosystem services and natural capital approaches, that benefit business and the environment. This enables the production of different project designs or strategy options that meet the clients needs and well as contributing to wider sustainability agendas.

Staff work globally to assess, design and manage the carbon intensity of projects in

all sectors. An in-house carbon tool, the Carbon Portal, allows team members to deliver significant carbon and cost savings through better design. This is reflected in their day-to-day work. They use tablets, machine learning and coding programmes like Python to solve problems and increase efficiencies e.g. making surveys and data collection more efficient and reliable.

The benefits of this approach are shown through award-winning projects such as winning the Climate Resilience Project of the Year at the British Construction Industry Award for Shoreham Adur Tidal Walls.

Staff training and development is supported through the annual *Environment Forum*, where staff learn from other colleagues of all levels

and different disciplines e.g. Ecology, EIA Management, Climate & Carbon Management. Staff are also supported in their pursuit of chartership and affiliation with CIEEM, both financially and through training and mentoring. The Early Careers Professionals Network promotes continual learning for junior staff, who also have a specific area on the company Practice Site. The company also provides "Lunch and learn" sessions whereby a technical expert hosts an open discussion on their topic of expertise. This culminates in an annual *Excellence Week* which provides an opportunity to share and learn via webinars, social media discussions and local events.

Winner

Abberton Reservoir Visitor Centre and Nature Reserve

Essex Wildlife Trust

When Essex & Suffolk Water (ESW) proposed the expansion of Abberton Reservoir in Essex in order to secure future water supplies, Essex Wildlife Trust (EWT) saw a unique opportunity to work together in partnership and help create a truly enhanced reservoir for nature and people. Abberton Reservoir Visitor Centre was constructed as part of the Abberton Reservoir Enhancement Scheme and opened to the public in spring 2012. The nature reserve itself was started several years before the construction work with obvious benefits to nature. The bespoke visitor centre and 25ha nature reserve has been outstandingly successful in terms of suitable habitat created and numbers of people engaging with nature. Over 15 years of volunteering time, 40,000 trees and shrubs have been planted in the new reserve area and by 2019 visitor numbers had reached an amazing 126,283 annually. Located on a previously intensively managed arable field, the reserve not



only provides education and access to the public but the habitat is a wonderful addition to the reservoir which is designated a SSSI, SPA and Ramsar site. Throughout the project, the vision to enhance the site for wildlife was at the centre of decisions, whether that was

starting habitat creation years before construction, profiling the slopes of the new reservoir to maximise habitat for wetland birds, or involving volunteers (and their TLC) in the planting of over 84,000 saplings and creation of new wetlands.

During and since construction, Essex Wildlife Trust staff and volunteers, in partnership with Essex and Suffolk Water and AECOM, implemented a novel approach to the establishment of aquatic vegetation, trialling a range of establishment techniques. Rhizomes and seeds of common reed were collected and planted in a polytunnel set up on site. Subsequently thousands of seedlings were planted out in strategic locations around the reservoir. Volunteers also collected, sorted and sowed 20 million seeds of marginal and emergent plants to establish cover and a food source around the new shoreline. This marginal habitat is now self-sustaining and used by a variety of birds and other species. Many of this project's successes are due to dedicated staff and volunteers. In 2019 alone, 1,284 volunteers helped within the visitor centre and an incredible 4,255



hours (995 days) of volunteer work parties were held. This enables habitat creation to occur both on the reserve and the surrounding reservoir, and the all-inclusive attitude enables members of the public to gain valuable experience of, and appreciation for, the wonderful wildlife.

The impact of the centre and nature reserve is far reaching, multi-generational and accessible to all. Its design was inspired by the landscape in which it sits and its management benefits both wildlife and people - showcasing a truly special partnership.

Highly Commended

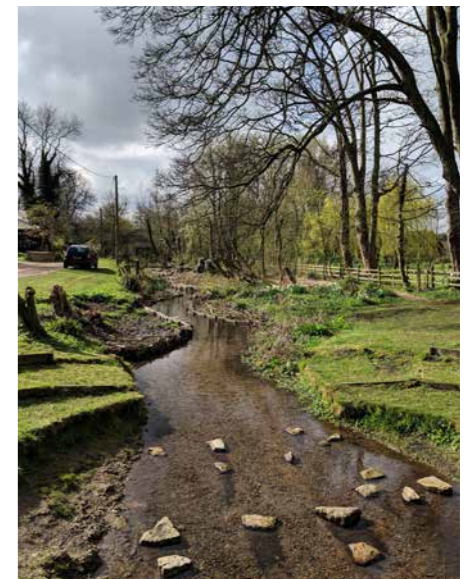
Limestone Becks Project

Lincolnshire Rivers Trust

The overall objective of the Limestone Becks Project is to improve and prevent the deterioration of these spring-fed water bodies in central Lincolnshire on a catchment scale. The spine of limestone runs up through western Lincolnshire and is bounded by the Upper Witham and the Trent Vale to the west and the Witham and Ancholme Valley lowlands to the east. It is in this context that makes the environment unique, as it represents an isolated lowland aquifer, giving rise to a large number of spring-fed streams. These streams can support Biodiversity Action Plan species such as brown trout, water vole and otters, alongside nationally rare riverfly, diptera and beetle species. Intensive agriculture, pollution from industry and a general disconnect from nature have all put pressure on the becks. The Trust aims to reverse this and ensure that the river habitat is robust and sustainable by:

- Improving water quality – tackling the sources of pollution and engaging landowners.
- Restoring and enhancing river habitat using both engineering and low-key solutions as appropriate.
- Monitoring and reducing invasive and non-native species.

To date the Trust has completed works on 4 of the becks and started to control invasive species such as Himalayan balsam within the catchment. During 2019 over 200 children from four primary schools in Limestone Beck villages successfully engaged with the Trust's Mayfly in the Classroom project. This project has given primary school children aged 4 – 11 years the opportunity to get involved with their local water course to experience the outdoor classroom first-hand.



Winner

Rebekah Beaumont

JBA Consulting

Rebekah has been with JBA Consulting since February 2018 as Assistant Ecologist. During this time, she has worked on a variety of complex projects, collaborating with geomorphology, fisheries, engineers and hydrology teams on habitat monitoring, master planning, mitigation design and habitat restoration.

Within the last year Rebekah has been the Lead Ecologist on three river restoration projects, providing detailed ecological reports with recommendations for restoration options to deliver improved biodiversity and river function. Exemplar projects that Rebekah has been involved in include a river restoration scheme aiming to restore the Rivers Gavenny and Clydach back to good ecological status, reduce flood risk and enhance ecosystem resilience. Rebekah undertook a baseline ecological assessment alongside geomorphology staff, helping to provide a comprehensive survey of the entire river corridor. Rebekah provided ecological interpretation of physical pressures and impacts on these river catchments. This included surrounding land use, invasive species, pollution sources and channel modifications. Based on this information, recommendations were made to remove weirs to improve fish passage, to remove and/or replace physical modifications to the channel and to improve floodplain vegetation structure and diversity, thus reducing sediment and nutrient input. Rebekah has also been heavily involved in a multi-disciplinary project to create a masterplan for improving East Chevington Nature Reserve for wildlife and people. Rebekah provided training to



Northumberland Wildlife Trust volunteers on reptile identification, distribution, survey and refugia monitoring. Rebekah further demonstrated how to install and use camera traps, identifying how they can be used to monitor species in various habitats. She undertook invertebrate, bat and great crested newt (GCN) surveys to identify and assess habitat suitability across the reserve. Rebekah provided information for species identification guides for butterflies, day-flying moths and wildflowers to encourage more biological recording across the reserve. Rebekah has shown a strong commitment to develop her skills and knowledge, supporting her career with targeted training. To gain her GCN survey licence, Rebekah attended a three-day course to supplement her existing field experience. A month later, Rebekah gained her GCN survey licence (less than six months after joining JBA) and led on surveys that season.

Rebekah has an outstanding commitment to volunteering and has been bird ringing regularly over the past three years (900+ hours, 3000+ birds). From this she has gained her BTO 'C' ringing permit and a Schedule 1 licence for Barn Owl.

Rebekah is JBA's Building Information Modelling (BIM) champion for the Doncaster office. Her role is pivotal in ensuring high quality data management across the team. She has shared her in-depth understanding of BIM with JBA Doncaster through workshops, one-to-one support, and by disseminating training materials. During team meetings Rebekah shares feedback from audits and internal BIM meetings and encourages individuals to raise any issues they have been facing.

Rebekah's attitude to her work is commendable, showing an enthusiasm for her work, ecology, and the people with which she works. She is a deserving winner of the Promising Professional Award.



Highly Commended

Elisabeth (Libby) Brooks

Arcadis Consulting (UK) Ltd

Libby began her career as an ecologist in 2018 when she first joined Arcadis. She is described as a highly enthusiastic, personable and motivated individual who shows care and consideration to others. She has natural leadership skills, as well as impressive ecological knowledge and skills for her experience.

Exemplar projects Libby has been involved in include a wide range of species surveys for the Lower Thames Crossing project (for Highways England) as well as assisting



with the writing of the Environmental Statement chapters and technical appendices for ornithology, which is an area of expertise for her. She has also led on the tidal bird surveys, undertook reptile surveys and was one of the lead Ecological Clerk of Works (ECoW) on the Lamby Way Solar Panel Farm.

Libby has an impressive knowledge of waterfowl, waders and overwintering birds. She is already competent to lead

surveys but continues to developing her skills through engagement with specialist colleagues and contractors e.g. birding in local nature reserves whilst on site with senior ornithologists. She regularly participates in BTO surveys in her local area and also undertakes voluntary work for botany and dormouse surveys, Libby motivates and inspires with her voluntary work, engaging children and families. Locally, she assists with the day to day running of the nature society, also working as a beekeeper. She has achieved a great deal in a short time due to her enthusiasm, extensive volunteering and dedication to ecology and nature conservation.

Highly Commended

Ellen Davies

Atkins

Ellen first joined Atkins in 2017 as an Assistant Ecologist. She became the most junior member of staff to be appointed a species lead during the writing of the Environmental Statement on the East West Rail Project Phase 2, due to her knowledge of UK and invasive crayfish ecology and ark sites. Ellen challenged and queried the white-clawed crayfish survey methodology suggested for the EWR2 project. She then remodelled the methodology following a critical review of procedures, published guidelines and discussions with inhouse



specialists. In her approach to this task she drew together a number of published documents to create a more refined survey methodology tailored to the project's needs. It was both robust and efficient, making it resistant to scrutiny and saving time and therefore money on surveys without compromising species protection.

Her wider contribution to the project has included: authoring Precautionary Method of Working (PMWs), Ecological Impact Assessments (EclAs) and Ecological

Management Plans (EMPs), carrying out a variety of field surveys (mainly badger bait marking, great crested newt, reptile surveys, National Vegetation Classification (NVC) and extended Phase 1 habitat surveys) and coordinating and managing NVC surveys across the scheme.

Ellen displays an outstanding commitment to her personal professional development. Outside work, during 2018-2019, she has committed over 140 hours of her own time learning by volunteering on Shropshire Botanical Society and Birmingham Bat Group surveys and has attended multiple courses and talks. She also volunteers in a local meadow restoration effort using a novel approach, for which she hoped to have a joint paper published.

Highly Commended

Josh Styles

Tyrer Ecological Consultants Limited

Josh is described by his manager as a keen and committed ecologist and botanist. He is regularly consulted for his expert botanical advice when it comes to habitats, flora and impact on more sensitive sites, which is unexpected from an employee so fresh from university. Josh demonstrates this knowledge and skill on field visits where notable flora is recorded; he is consistently able to identify rare species and hybrid taxa in field. He has worked on numerous sites where he has had to accompany other, more senior



surveyors, where specialist botanical knowledge has been required including a coastal site next to a SSSI and another site where Petalwort (a European Protected Species) had been recorded nearby.

Josh is an excellent tutor when it comes to both vascular and non-vascular plants. This is also demonstrated outside work where he has produced various videos in his free time documenting interesting British flora. One of these has recently claimed the 'presenter award' for the Back from the Brink film and photography

competition (<https://www.youtube.com/watch?v=4NdVaBniVQc>).

Outside of work, Josh dedicates a considerable amount of time to personal development, volunteering for various organisations including Lancashire Wildlife Trust, Cheshire Wildlife Trust, WWT and Natural England. Aside from his volunteering commitment, Josh is also the founder and project coordinator of the North-West Rare Plant Initiative, a self-made conservation programme targeting 43 rare plant species for the region of NW England.

Winner

Committee on Climate Change

The Committee on Climate Change (CCC) has demonstrably had a significant impact in terms of leading action, raising awareness and engaging with a wide range of key organisations in relation to the global climate emergency. The CCC is recognised as being at the centre of climate change policy in the UK and is widely trusted for its impartiality and its analytical honesty and rigour.

The CCC is an independent statutory body established by the Climate Change Act 2008. Its purpose is to advise the UK Government and the Devolved Administrations on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions in preparation for climate change. The CCC comprises experts in climate change, science, economics, behavioural science and business.

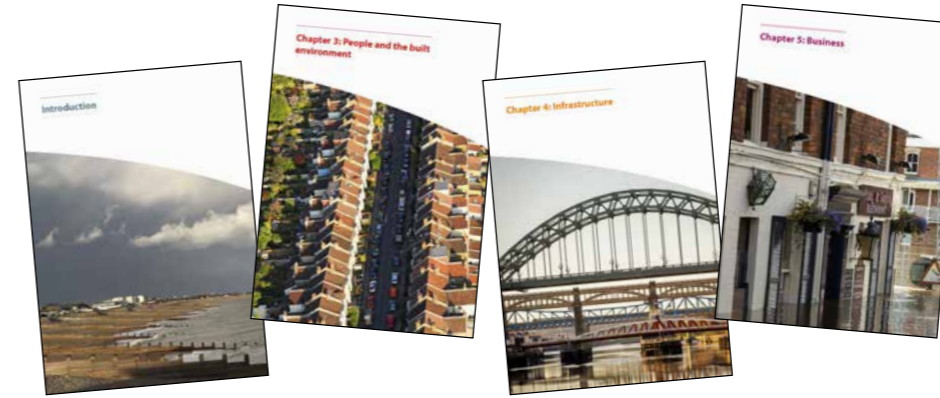
The CCC has demonstrably been very effective in holding the UK Government to account and driving it to generate policies to reduce progressively our greenhouse gas emissions and to prepare our economy and our natural environment for the future. For example, the UK was the first country to establish a long-term legally binding framework to cut carbon emissions. The original target requiring greenhouse gas emissions to be reduced by at least 80% from the 1990 baseline by 2050. In response to the 2019 CCC report 'Net Zero: The UK's contribution to stopping global warming', the Climate Change Act was amended in June 2019 committing the UK government to reduce greenhouse gas emissions to at least 100% of the baseline ('net zero') by 2050.

The Climate Change Act requires the UK Government to set legally binding

'carbon budgets' acting as five-year caps on greenhouse gases emitted in the UK, stepping-stones towards the 2050 target. The CCC advises on the appropriate level of each carbon budget which must be set at least 12 years in advance. The first five carbon budgets up to 2032 have been legislated. The Climate Change Act places an obligation on the UK Government to prepare policies to ensure each carbon budget is met.

The complex relationship between the climate emergency, biodiversity and the natural environment feature prominently in key reports from the CCC to the UK Parliament. The Climate Change Act created an Adaptation Sub-Committee to support the CCC and report specifically on action taken in the UK to adapt to global heating. The Sub-Committee's 2019 Report to Parliament 'Progress in Preparing

for Climate Change' emphasises the complex relationship between climate change, biodiversity and the natural environment and the need to take more sophisticated approaches to measure and respond to climate change impacts on the natural world. Evidence would suggest that the Government and Devolved Administrations are listening.



Highly Commended

Dr Martina Girvan CEcol CEnv MCIEEM

Nominated by a colleague, Martina is described as having shaped the understanding of how biodiversity contributes to climate and social resilience amongst numerous clients, community and policy makers. She leads the Arcadis team with drive, passion and a commitment to influencing decision making, constantly messaging the relationship between biodiversity impacts and dependencies and the climate crisis. Of particular relevance is her work on how to deliver sustainable cities, presenting at over 30 major events, including the International Association of Impact Assessment (IAIA) in Brisbane and the National Capital Initiative (NCI) 10-year Summit in London. She delivered the Million Pound Tree podcast (<https://soundcloud.com/arcadis-united-kingdom>) which related biodiversity and green infrastructure to social and climate resilience.

Martina leads the Global Natural Capital Community of Practice within Arcadis, bringing different specialists together from around the world. She has advised on the incorporation of green infrastructure for the ISCA 2.0 metric at the Infrastructure Sustainability Council of Australia 2018 conference in Sydney. She also went to Chennai (2018) on behalf of the UN and presented global case studies around the Natural Capital approach to increase resilience in Chennai, which is currently under stress of pollution, over abstraction of water, flooding, loss of biodiversity and cultural heritage.



Winner

Claire Wansbury CEcol CEnv FCIEEM

Claire's passion for biology was ignited at the age of seven whilst watching David Attenborough's *Life on Earth*. She was fascinated by the sheer variety of living creatures with whom we share this planet. Her first commitment to ecology was saving up her pocket money to sponsor a lizard at London Zoo. From a humble interest in nature, Claire has gone on to influence government policy and projects; deliver innovation in research, encourage and support work and industry colleagues; and promote the aims and objectives of CIEEM.

As Atkins' Biodiversity and Natural Capital Technical Authority, Claire delivers engaging training on a range of subjects including biodiversity net gain, natural capital, environmental and contract law, bat identification and green bridge design. She actively raises awareness of biodiversity, e.g. as the guest lecturer on biodiversity net gain at the Society for the Environment's 2019 awards and lectures event. She also gives talks on ecology and biodiversity enhancement to industry specialists including engineers, project managers, planners and designers.

Claire has been involved in discussions on biodiversity net gain for many years. In 2011, she presented evidence to the All-Party Parliamentary Group on Biodiversity about the National Planning Policy Framework and biodiversity offsetting, in which she called for every offsetting project to aim for net gain. More recently she has been one of the key players driving forward best practice in the UK. In 2016, Claire represented CIEEM on the CIRIA, CIEEM and IEMA working group creating the "Biodiversity Net Gain good practice principles for development". She then went on to chair the Project Steering Group producing guidance on biodiversity net gain. Claire is on the working group creating principles for net gain and people, and the BSI committee creating a British Standard.

A steadfast supporter of CIEEM for decades, Claire has served on the Membership Applications Committee, assessed Chartered Environmentalist applications and volunteered to be a 'test case' for the CEcol assessment process, leading to her being registered as Chartered Ecologist

number 007! In 2018 she was elected onto CIEEM's Advisory Forum. Claire works tirelessly to share her knowledge of, and passion for, the environment by actively supporting work colleagues, industry professionals and academic students to achieve their own career goals. Throughout her own career she has helped junior colleagues by contributing to their technical learning, practical welfare and mentoring. She also influences them to use volunteering days for charities such as London Wildlife Trust, Earth Trust and Bat Conservation Trust.



© London Wildlife Trust

Highly Commended

Dr Martina Girvan CEcol CEnv MCIEEM

Martina is a Chartered Ecologist with over 25 years experience in demonstrating the benefits of biodiversity in delivering productivity, stability and resilience of ecosystem-services. Most of her career has been in consultancy, working with multidisciplinary teams delivering major projects and delivering nearly 50 Ecology Chapters for major EIAs across all development sectors.

Martina has generously shared her knowledge and worked collaboratively throughout her career. Her technical excellence within the ecology sector has directly benefitted the teams she manages, she consistently drives forward best practice, sharing expertise and innovation within the companies she has worked for. In addition to her academic publications she has written and or contributed to 14 guidance documents messaging and evidencing the relationship between biodiversity and quality green

infrastructure on ecosystem-services, social, climate and financial stability.

A founding member of CIRIA's Biodiversity Interest Group (2010) she has influenced the construction industry's approach to biodiversity and the "Do-One-Thing-Challenge" (2013) developing the BIG Biodiversity Awards (2014).

She has mentored more than 30 ecologists through their CIEEM membership and chartership levels, is a Chartership assessor and has assessed numerous applicants over the last six years. She has been part of CIEEM's Strategic Policy Panel (SPP) since 2018, advising on practice and policy for biodiversity and natural capital. She has contributed to the CIEEM briefing paper on the natural capital approach and attended meetings at Westminster on behalf of the SPP, including presenting at the inauguration of the All Party Parliamentary Group for Nature in July-2019.



Commended

Dr David Morris MCIEEM

David is a self-taught botanist and dedicates most of his time both in and outside of work to the survey and conservation of plants and habitats. As the Botanical Society of Britain and Ireland (BSBI) Vice County Recorder for Oxfordshire (<https://bsbi.org/oxfordshire>), David spends a large amount of his personal time validating and collating vascular plant records received from local volunteers and other sources and recording the flora of the county for local and national projects. Through his local flora group, he is responsible for the conservation of two locally rare and threatened plants, flat sedge (*Blysmus compressus*) and small-leaved sweetbriar (*Rosa agrestis*). He is a founding committee member of the Oxfordshire Fens Project, its aim to restore rare alkaline fen habitat in Oxfordshire. He is also involved in activities for the British Bryological Society, until recently serving on the society's governing council and undertaking surveys for the society's recording scheme.

David has a keen interest in sharing his knowledge of plants with colleagues and the general public, helping others develop and maintain their knowledge and skills. He has written and presented numerous CPD sessions for Jacobs, covering subjects such as arable weeds, habitat mapping and wetlands, the latter for a mixed audience of ecologists and hydrologists. For the last five years, David has been providing lectures and acting as a teaching assistant in bryophyte identification at the University of Reading. As a volunteer, he has given numerous talks and training courses to organisations in Oxford, ranging from garden societies to the local Wildlife Trust.



Winner

Jennifer Maclsaac (Nottingham Trent University)

Acoustic Surveying of hazel dormice (*Muscardinus avellanarius*) in Nottinghamshire: A preliminary study

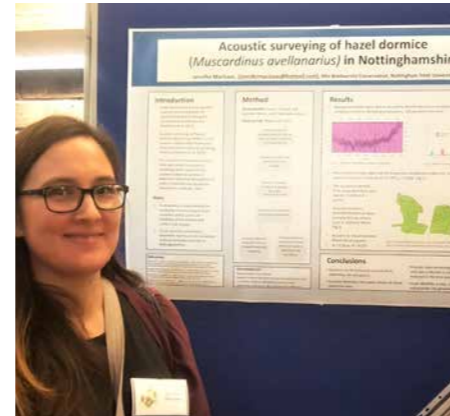
Acoustic wildlife surveying is becoming increasingly popular among researchers and practitioners, as shown in the recent increase in the number of published studies utilising this method. However, it has not been used to survey dormice and there is little in the scientific literature regarding the vocalisations of wild hazel dormice. The study investigates a novel and non-invasive method of efficiently surveying hazel dormice using acoustic recorders.

Jennifer's dissertation discusses the growing body of scientific literature involving the use of acoustic recorders and automated species detectors to survey wildlife. The benefits of this method over traditional survey methods are highlighted and related to existing hazel dormouse survey techniques. Current challenges with acoustic surveying and automated species detection are also explored and the limitations of this method are acknowledged.

Jennifer's dissertation proposes a number of hypotheses that are logically derived from her excellent understanding of dormouse ecology and the study sites.

Dormouse vocalisations recorded and identified during this study were used to build an automated species detector in the R package MonitoR (Hafner and Katz, 2018). MonitoR uses acoustic template matching to detect vocalisations and to date, there are been no published examples using this method to detect dormouse vocalisations or using acoustic surveying to estimate dormouse site occupancy. The statistical analyses used provide meaningful results to test the project's hypotheses.

The results presented in this dissertation, supported by a wide range of well-designed maps and figures, are very well evaluated in the context of the findings of previous studies involving acoustic surveying and automated species



detection. The results demonstrate that acoustic recorders can be used to effectively detect hazel dormice presence and to determine site occupancy. As this method is non-invasive, a survey licence would not be required. Additionally, the methodology described in this study could be adapted to detect other dormice species that are vocal and difficult to detect using traditional survey methods.

The presentation of this piece of work is excellent with the use of subheadings and figures giving the project a clear and logical structure. The standard of writing is very high throughout and a good range of sources were used and cited well.

Highly Commended

Kieran Gething (Loughborough University)

The legacy of metaldehyde within the environment: An insidious chemical or harmless compound for non-target aquatic macrofaunal communities

The use of the pesticide metaldehyde has been a source of debate and contention due to its well-publicised potential effects on wildlife (including toxicity to humans). This dissertation addresses a significant research gap by utilising both primary data, collected as part of laboratory mesocosm experiments, and secondary data obtained from the Environment Agency, to examine the effects of metaldehyde on aquatic macroinvertebrates.

The research has a clear set of aims and objectives that are underpinned by evidence drawn from the wider academic literature throughout. The results of secondary data analyses (utilising both univariate

and multivariate analysis techniques) clearly illustrates that macroinvertebrate communities and biomonitoring indices recorded from sites where metaldehyde concentrations were an issue of concern were statistically different to those from control sites. However, the analysis also indicated that nutrients (nitrogen and phosphorous-based fertilizers) were probably the primary drivers of the differences observed (not metaldehyde). The results of controlled laboratory mesocosm experiments exposing a range of common freshwater gastropods (snails) and bivalves to metaldehyde (slug pellets) also indicated that concentrations well above those ever recorded in the field were required to have any effect on faunal survivorship.

The dissertation specifically addresses the ecological effects of agricultural practices on non-target aquatic macroinvertebrate fauna. The results and wider evidence is



clearly synthesised and contextualised in relation to available literature throughout. The dissertation is very well written, and supported by a very comprehensive and clear set of supporting tables and figures.

Highly Commended

Jacob Modica (University of South Wales)

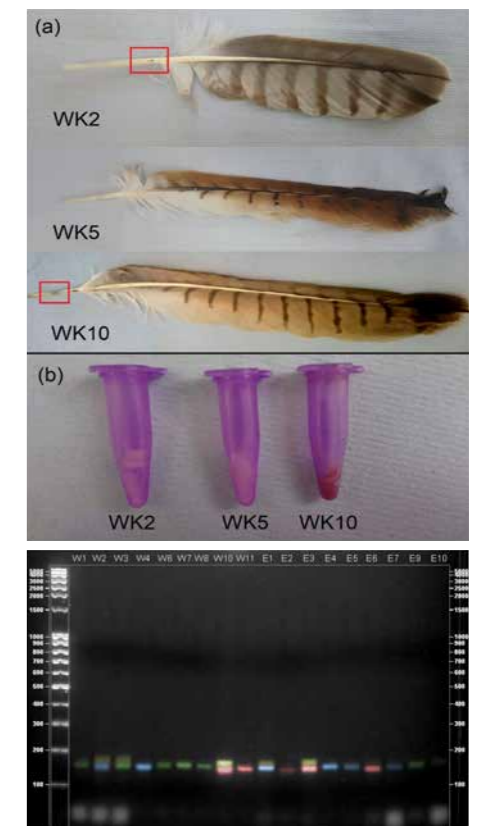
Developing a Methodology for Non-Invasively Assessing the Genetic Diversity of Red Kite (*Milvus milvus*) Populations by Analysis at Mitochondrial and Microsatellite Loci

This project features an extensive examination of both historic and contemporary red kite conservation as well as a detailed assessment of the red kite reintroduction projects undertaken in the UK. It includes a critical review of future red kite management and conservation challenges from both a broad perspective and in the context of the project's pilot study results. All sources are cited in the Harvard format with a full glossary and appendix provided for figures and sources used.

The methodology developed in this project illustrates the potential for an extensive, cost effective, and non-invasive analysis of red kite population genetics. This methodology also illustrates the potential

to compare the genetic diversity of the Spanish red kite population previously introduced to England with the present English red kite populations by utilising microsatellite genotypes previously documented by Parkin and Peck (2000). The results of the pilot study in this project illustrates the potential to make informed judgements of red kite population genetics with a mitochondrial and/or microsatellite analysis. The ND2 and Cytb mitochondrial primer approaches used in this project were, as of 21/08/2019, original. As well as using red kite microsatellite markers previously researched by Parkin and Peck (2000), this project provided 3 microsatellite markers (Age5, BswD127w, BswD210w) newly discovered for red kite population genetic analysis.

The dissertation was very well written and sound analysis to reach appropriate conclusions.



Winner

Tom Tew and Pascale Nicolet

District Licensing for great crested newts – a successful first year for the South Midlands scheme
Published March 2019

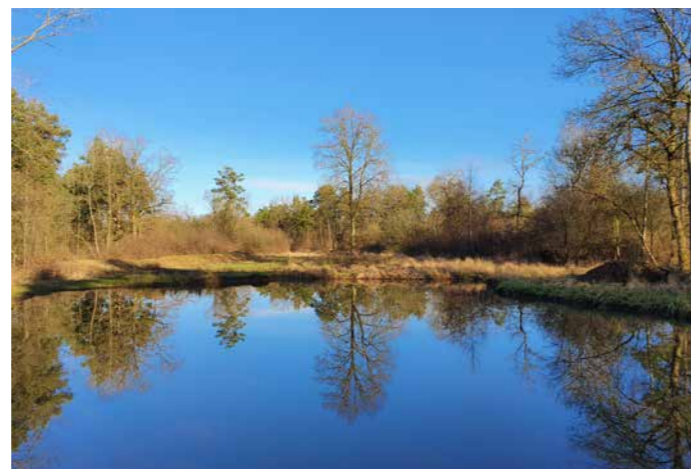
Under the 'District Licensing' system, Natural England may issue an Organisational Licence to a Local Planning Authority that then enables that Authority to authorise operations that may harm great crested newts through the planning system. This 'one stop shop' allows developers to receive authorisation under a newt Licence at the same time as they receive planning permission, and removes the necessity of separately applying to Natural England for a great crested newt licence. The system is designed to help

developers by significantly reducing delays, risks and costs. It is also intended to help planning authorities to deliver their legal obligations efficiently and to demonstrably deliver net gains in great crested newt conservation status through their planning decisions. First and foremost, however, the system should deliver a significant improvement in newt conservation by creating, managing and monitoring habitats for great crested newts according to a long-term and landscape-scale strategy.

The paper discusses the outcomes of a district licensing scheme in the South Midlands. The scheme was licensed in February 2018 and operates across 7 contiguous Local Planning Authorities from Bedford Borough to South Oxfordshire; the scheme is voluntary and offers an extra option for developers alongside the existing methods of applying to Natural England for newt licences. Two new organisations were created – NatureSpace Partnership (NSP) liaises with developers and planning authorities to administer the scheme, whilst the non-profit South Midlands Newt Conservation Partnership (SMNCP) liaises with landowners to deliver newt habitats.

The authors use case studies and output data to illustrate how the scheme is contributing to positive conservation outcomes for great crested newt through delivery of a landscape-scale conservation strategy. The SMNCP has created 40 ponds at 12 sites across the scheme area with only 1 pond lost to development.

The paper describes how habitat creation has been approached in such a way as to maximise the chances of success, with careful site screening to ensure only the most appropriate sites are chosen (although more difficult sites may be used in the future), an emphasis on creating networks of ponds and ensuring ongoing monitoring.



Highly Commended

David Hill

Biodiversity net gain has to lead to proper biodiversity restoration at scale rather than prettifying development

Published June 2019

This *Viewpoint* article argues that, now the Government has consulted on making biodiversity net gain (BNG) mandatory in England, it is essential that CIEEM members use the opportunity to restore biodiversity and not to 'prettify' development.

David Hill set out a number of features of BNG projects that are essential if it is going to deliver effective biodiversity conservation both within the development site boundary and in the wider countryside. Some of these, such as a mandatory BNG requirement and use of the Defra metric, are coming to pass.

Others, such as the balance of net gain to be weighted towards off-site provision (with potentially an 80:20 weighting in favour of off-site provision), and the requirement for auditing of BNG delivery and outcomes, are still being discussed.

The author further proposed that local planning authorities should be inspected as to how effectively they are delivering their biodiversity duty.

In introducing these potential features of BNG, the article stimulated discussion and debate amongst the profession which has the potential to shape future thinking, policy and guidance.



Highly Commended

Matt Wainhouse, James Hicks, Claire Wansbury

One scheme, three metrics: A comparison of biodiversity metrics on a major infrastructure project

Published June 2019

Using a major infrastructure project as a model development, this paper compared the use of three biodiversity metrics currently used in the UK. Defra's Biodiversity Offsetting Metric 2012 (Defra 2012) was perhaps the best known and most widely used at the time, setting the precedent for similar metrics like Network Rail's Biodiversity Calculator (NRBC), The Warwickshire, Coventry and Solihull Biodiversity Impact Assessment Tool (WCSBIA), and the revised Defra Biodiversity Metric 2.0 (Defra, 2018). Whilst broadly similar in approach, which ultimately reflects the context in which they were designed to be used, Network Rail's Biodiversity Calculator was designed specifically for rail projects, most of which occur almost entirely within the rail estate. In contrast, the Defra 2021 metric was designed to be used across the breadth of England and in a range of infrastructure projects and, as such, has a broader and simpler mode of calculation. The WCSBIA metric is designed with local conservation priorities in mind and used at County scale.

These three metrics were applied to the East-West Rail 2 project to upgrade train services between Bicester and Bedford via Milton Keynes and Aylesbury Vale, utilising the Phase One habitat data. The results shows a higher level of variation than expected between the outputs of the metrics. All showed a net loss (as an assumption had been made that all habitat within the red line boundary would be lost (although this would not be the case in practice) but the WCSBIA metric showed an approximately 100% higher net loss than the NRBC metric, with the Defra metric sitting roughly in between.

The authors went on to discuss the reasons for the differences, based on the design of each of the metrics. This was a valuable illustration of some of the factors that can influence metric scores. While the article does not attempt to judge which approach is 'best' of those currently in use, it demonstrates that there can be substantive differences in the requirements (and hence costs) placed on developers depending on the metric selected.



Award Sponsors



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CIEEM Insurance Services is administered by MFL Insurance Group.

We have worked alongside CIEEM for a number of years and have had the privilege of being the preferred providers of insurance solutions to CIEEM Members since 1997. During this time, we have created a suite of products to cater to the demands and needs of Members.

The availability of these bespoke solutions enables CIEEM Members to benefit from a wide scope of insurance protection that may not be readily available to them on an individual basis.

In view of the uncertain times we now live in, this event remains a focal point to demonstrate, to the public, the Innovation and Excellence shown by the Members in their work and its importance to all of us. Long may that continue!

We continue to gladly contribute to the sponsorship of the Awards Event and look forward to working with CIEEM and its Members now and in the future.



SILVER SPONSOR

At Greenspace Ecological Solutions we take great pride in the application of bespoke mitigation and enjoy bouncing ideas off the varying disciplines within a project team. With this element of consultancy often raising the greatest and most interesting challenges we wanted to show our support for the hard work and dedication that is put into thoughtful mitigation.

It's with great pleasure that Greenspace Ecological Solutions have been given this opportunity to champion and support the CIEEM Best Practice: Large Scale Mitigation Award for both the 2020 & 2021 Awards. We look forward to learning more about the outstanding mitigation presented within this year's categories submissions.

As the industry evolves, we feel that celebrating and sharing knowledge and achievements is vital. The CIEEM Awards offers the opportunity to inspire others, be part of a community and helps to show the (often unseen) efforts involved with schemes, research, and by CIEEM members, both practices and individuals.

The Greenspace Ecological Solutions team keenly await the presentation and would like to wish all those that are shortlisted the best of luck.



SILVER SPONSOR

NHBS is a small, but rapidly growing business that combines commerciality with a genuine passion for the environment. Our purpose is to support those who are passionate about wildlife, and those who work to understand, protect, and conserve the natural environment. We sell the largest range of wildlife books and equipment in the world, publish two magazines: British Wildlife and Conservation Land Management, and manufacture bespoke equipment, working with experts in the field when developing new products. At NHBS we understand the important role that ecologists play and work to supply professional ecologists with a comprehensive range of expert equipment and books. Our wildlife equipment team are happy to provide expert advice and can recommend and demonstrate the best products for your project.

NHBS are proud to partner with CIEEM and support the work they do to represent and support ecologists and environmental managers. Like CIEEM, we believe that by working together we can make a difference, leading to a world rich in biodiversity, for the benefit of us all. To help celebrate the success of projects, businesses and individuals who have made significant contributions to protecting the natural environment, we are proud to sponsor the 'Best Practice Practical Nature Conservation award for 2020.'

For further information on NHBS and how we support professional ecologists, please visit www.nhbs.com.



SILVER SPONSOR

Arcadis are one of the leading global design and consultancy firms for natural and built assets. We are more than 28,000 people, in over 70 countries, dedicated to improving quality of life.

More than ever we appreciate the dynamic needs of our people, clients, and collaborators and we appreciate the enormous contribution that CIEEM and their members have made by creating, inspiring and sharing knowledge for and within the ecological community.

Diversity and flexibility drive innovation and innovation is vital to thrive in such a dynamic political, legislative, physical and social environment and to work towards achieving our sustainability goals. This means diversity in people, perspectives and the



SILVER SPONSOR

RSK Biocensus is the specialist ecology consultancy within the RSK Environment Group and a CIEEM registered practice. With 70 technical staff and a network of more than 800 specialist suppliers, RSK Biocensus has unrivalled coverage of the UK. Indeed, if you are based in mainland Britain, you are likely to be no further than 20 miles from a Biocensus ecologist. We can provide a full range of ecological surveys and assessments in terrestrial, freshwater and marine habitats, whether you need one specialist for one day or a fifty-person survey team for the entire summer. There's more to RSK Biocensus than just 'boots on the ground'. We have more CIEEM fellows than any other consultancy, and we pride ourselves on the outstanding reputation of our ecology expert witnesses, several of whom are members of government-expert panels. There's nothing we love more than solving complex problems and delivering benefits to our clients and nature. Accordingly, we have recently started a subsidiary company, RSK Wilding, which seeks to turn the aspirations of bigger, better and more joined-up protected places into reality through offsetting, net gain and rewilding. We are a learning organisation; our staff are encouraged to develop their careers through training and experience using our competency framework to progress to chartered ecologists. Visit www.rskbiocensus.co.uk for more information.

environment and flexibility in our thoughts and processes for design, implementation and management. We embrace this at Arcadis and more than ever we need to draw on the support of our communities, to deliver our vision of improving quality of life. CIEEM represents one such community, a community that is driving change and innovation within our profession and for the benefits of society at large. A community that continues to collaborate but acknowledges that it needs to reach a wider and more diverse audience to accelerate the vision of our profession. We are very proud to be sponsoring this innovation award, we are excited by the potential for inspiration, implementation and legacy that the ecology profession can deliver.



SILVER SPONSOR

We are delighted to be supporting the CIEEM 2021 Awards in not only one, but two inspirational categories. This prestigious event embodies our values and mission here at Wildcare – to support ecologists and wildlife enthusiasts so they in turn can support our environment and natural ecosystems. We're always growing and evolving, and support of these landmark events allows us to continue to work within the community of industry leaders and connects us with ecologists.

Our chosen sponsored categories were selected carefully. We firstly selected the Member of the Year Award as we feel this strongly ties with our value to support the community. This award is dedicated to those who selflessly go the extra mile, often unnoticed. We are extremely proud to celebrate this valuable partnership.

The Promising Professional Award is all about encouraging and supporting junior ecologists who are taking the first steps in their ecology career. At Wildcare, our products and services support students and education too, not just wildlife enthusiasts and established professionals. Therefore, this award is something we strongly endorse and encourage.

It is a privilege for us to have a longstanding partnership with CIEEM and support the wonderful work they do in inspiring youth, supporting professionals and raising awareness of the natural world and challenges it faces. Its very mission is selfless – to promote the highest standards and practices for the benefit of nature and society. Therefore, we are honoured to support the charity in these awards and wish every success to the nominees and participants.



BRONZE SPONSOR

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We're designers, ecologists, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships while placing climate change at the heart of all that we do. Balancing these priorities results in projects that advance the quality of life in communities and enhance the natural environment both at home and around the world.

Our ecology team provides authoritative ecological consultancy advice throughout the complete planning lifecycle, from pre-planning due diligence to post-planning monitoring and management. We provide effective and innovative advice that benefits business and communities and promotes biodiversity and engagement with nature.

Stantec fully supports CIEEM's work to champion biodiversity, raise the profile of ecology and environmental management professionals, and promote the highest standards of practice for the benefit of nature and society. We're proud to once again sponsor the CIEEM Awards.



BRONZE SPONSOR

Since its establishment in 1999, The Ecology Consultancy, a UK based ecological consultancy, has grown from a single office in London to established bases in Sussex, Norfolk, the Midlands, Northern England and Devon with the head office still based in London.

Our founding director and many of our employees started their careers with NGOs where they gained valuable knowledge and perspective that they bring to their roles as consultants. We strongly believe that Britain's wonderfully diverse range of NGOs are essential to the ecological wellbeing of town and countryside through their work to campaign for and deliver real change for biodiversity. We believe that the work of NGOs and consultancies is often complementary and that we can work together to deliver more ecologically relevant and sustainable developments. As a result, we have worked closely with NGOs to monitor and mitigate the impacts of development on areas of local and national importance.

The Ecology Consultancy is therefore, once again proud to support the CIEEM awards as the sponsor for the CIEEM NGO Impact Award.

The Ecology Consultancy is always looking for opportunities to engage with local community groups, whether through volunteering on local projects or delivering presentations and workshops to stakeholder groups. The Ecology Consultancy is committed to technical and professional development, sharing knowledge and nurturing talent, and takes pride in the passion, professionalism, and reputation for excellence that our team (and past alumni) have shown within the field of ecology.

For more info about The Ecology Consultancy visit: www.ecologyconsultancy.co.uk



BRONZE SPONSOR

A multi-award winning graphics and production agency, Greenhouse is recognised as one of the UK's leading sustainable print centres and partners some of the UK's leading environmental organisations for a wide range of graphic communications projects. Greenhouse was established in 1993 with the aim to provide a greener choice in print.

Now in our 27th year, our work covers a broad graphics spectrum from servicing multi-national organisations to sole traders and from a global to a local reach.

Our in-house graphic design studio is supported by our lithographic print production facility, including: the latest H-UV litho print technology; exhibition and large format graphics. We also have a dedicated signage department delivering indoor, outdoor and interpretation signage.

From concept to complete job delivery, examples of our work include: brand design and development, corporate brand management and adherence; design and production of literature – brochures, annual reviews, reports, magazines, leaflets, books, stationery; marketing consultancy; large format graphics; internal and external signage.

We'd be delighted to hear from you to discuss any project. Please call 01256 880770, or visit www.greenhousegraphics.co.uk.

We are very grateful to the following members who volunteered their time to judge the awards:

Action 2030

Tanith Cook CEcol MCIEEM

Jacqui Green CEcol FCIEEM

Anita Hogan CEnv MCIEEM

Lynsey Robinson CEnv MCIEEM

Liz Seal CEnv MCIEEM

NGO Impact

Liz Anderson CEnv MCIEEM

Prof Roger Crofts FCIEEM

Sarah Cane-Ritchie CEnv MCIEEM

Dr Emilie Wadsworth MCIEEM

Ann Skinner CEcol CEnv FCIEEM(rtd)

Best Practice

Dr David Parker CEcol CEnv FCIEEM

Dr Sue Lawley CEnv MCIEEM

Michael Willis CEcol FCIEEM

Andrew May FCIEEM

Nick Coppin MCIEEM

Postgraduate Student Project

Claire Wansbury CEcol CEnv FCIEEM

Dr Alan Feest CEcol MCIEEM

Dr Eirene Williams CEnv FCIEEM(rtd)

Dr Colin Bonnington FCIEEM

Nina Birkby MCIEEM

Consultancy of the Year

Prof Rob Marrs CEcol FCIEEM

Dr John Jackson MCIEEM(rtd)

Darren Towers CEnv MCIEEM

Claire Smith CEcol CEnv MCIEEM

Simon Boswell CEcol MCIEEM

Promising Professional

Hannah Bilston CEcol MCIEEM

Kathryn Edwards CEcol MCIEEM

Dr Maggie Hill MCIEEM

Siri White CEnv MCIEEM

Sue Bell CEcol CEnv FCIEEM

Member of the Year

Daniel Gotts CEnv MCIEEM

Susan Croker MCIEEM

Dr Aidan Marsh CEcol CEnv MCIEEM

Kate Prior CEcol CEnv MCIEEM

Dr Richard Jefferson CEcol CEnv FCIEEM



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