

NATURE NEWS

30 years at the heart of nature

Spring 2021



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- Celebrating 30 years
- Spotlight on Scotland
- Marine natural capital
- Into a 'Super' decade

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JNCC at 30 © JNCC

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Chief Executive's Introduction

Welcome to the spring edition of *Nature News*, bringing you updates and information on our UK and international work. JNCC will be celebrating its 30th anniversary at the beginning of April. In this birthday edition we recognise some of our key achievements on our journey from 1991 to the present day.

On a personal note, this edition of *Nature News* contains reflections on my 22 years at JNCC as I prepare to hand over the baton to the incoming interim Chief Executive, Dr Gemma Harper. I'm delighted to welcome Gemma to JNCC – you can learn more about her in *Conservation Conversation*. I'm also pleased to welcome Professor Colin Galbraith as JNCC's new Chair. I'm confident the organisation will flourish under their leadership.



As we gather momentum in this 'Super Year' for the environment there are lots of opportunities for the UK to have profile and impact internationally. The UK can showcase the valuable knowledge and expertise that it has gained for possible use elsewhere in the world, and learn from the experiences of others. The impact will be much greater if we can offer inputs from all four nations in the UK and the Overseas Territories. In this edition we explore how JNCC is working to co-ordinate this.

We also take a look at our work to support practical applications of a natural capital approach in the oceans. Our experts have already been involved in producing tools for managing natural capital on land, including recent projects in Chile, Columbia and the UK Overseas Territories. We are now developing similar approaches for the marine environment.

A handwritten signature in dark ink that reads "Marcus".

Marcus Yeo, Chief Executive, JNCC



JNCC is the public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation. As a public body we also work in partnership with business and society. Our people are dedicated to providing high-quality evidence and advice on the natural environment for the benefit of current and future generations.

Farewell Marcus

As we approach JNCC's 30th anniversary, we bid a fond farewell to our Chief Executive Marcus Yeo who is leaving after 22 years. Marcus joined JNCC in 1998 as Head of Habitats, before moving from science to business management in 2002 as Head of Planning and Resources, and then in 2004 to Director of Resources and External Affairs. Following a promotion in 2009, he became Managing Director before the role changed to Chief Executive.

At Marcus' final Joint Committee meeting, our Chair Professor Colin Galbraith paid tribute to his contribution to JNCC: "We are enormously grateful to Marcus for all his hard work over many years in leading JNCC. He has ensured that JNCC provided important advice to government on many issues related to nature conservation across the UK."

"He has achieved a great deal for JNCC by managing the organisation very effectively in a considerate and thoughtful way. We wish him well for the future."



Joint Committee news

We're pleased to [announce the appointment of our new Chair Professor Colin Galbraith](#) – Deputy Chair of JNCC since 2017 and an Independent member of the Committee since 2014.

In addition to Colin's appointment, Professor Melanie Austen, Charles Banner QC and Professor Marian Scott OBE have all been reappointed as Independent Members for second terms of two years and ten months.



Introducing our interim Chief Executive



We're delighted to welcome Dr Gemma Harper OBE as our [new interim Chief Executive](#).

On hearing of her appointment, Gemma said: "I am delighted to be appointed as JNCC's interim Chief Executive. It is a brilliant time to be joining JNCC given the unparalleled opportunities in 2021 to take action globally and within the UK to tackle biodiversity loss and the climate crisis. Evidence is in my DNA and I am delighted to be able to lead this world-leading science-based organisation. I bring my love of nature and passion for inclusion to JNCC and look forward to working with everyone."

in Brief



Nature News has been following the progress of a community of seabed scientists working together to tackle key issues faced by users of seabed photography and video imagery in the UK for the past three years. These imagery media are critical for the UK to assess the condition of biological communities on hard seabed habitats – including reefs – in national seabed monitoring programmes. This project forms part of JNCC's commitment to provide high-quality evidence and advice on the UK's network of Marine Protected Areas.

The seabed scientists first came together in 2019, when we convened a workshop – [The BIG PICTURE Benthic Imagery Analysis Workshop](#) – to discuss the [key issues and develop collaborative solutions](#). Following this event, we banded together to form a cross-organisation working group under the North-East Atlantic Marine Biological Analytical Quality Control Scheme (NMBAQC), led by JNCC. [This 'Big Picture Group' were tasked with developing and implementing a co-ordinated Benthic Imagery Action Plan for the UK in 2020.](#)

A year on now from the publication of the Benthic Imagery Action Plan, the Big Picture Group met on the 2–4 March to share their initial successes and discuss the future challenges in implementing the Action Plan at the [BIG PICTURE II: Benthic Imagery Workshop 2021](#). Aside from being fully online, meeting government Covid-19 guidelines, each of the Big Picture Group's collaborative working groups presented their findings to the 75 participants from across 38 organisations for the first time. These collaborative working groups were forged over the last year, each set up to tackle different issues of seabed imagery use, including identification and counting methods for sea life, image catalogues, data standards, training, and the use of new technologies like artificial intelligence and image tagging. Each group is made up of technical experts from across government, academia and private consultancies, testament to the benefits of the spirit of co-operation at the heart of the Big Picture Group.



Despite the working challenges of a world dealing with the impact of Covid-19, the collaborative effort of the community of seabed scientists involved in the Big Picture Group continues to go from strength to strength. Going forward, 2021 promises to be a major year for us and we will work together to seek out shared funding opportunities, make new connections with colleagues around the globe and face future challenges together.



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For monthly updates on our work you can subscribe to the JNCC Bulletin! Email: communications@jncc.gov.uk

Super

Into a super decade – co-ordinating outcomes

2021, informally referred to as “Super Year 2021”, is looking like it will be pivotal for nature conservation and the beginning of a vitally important decade for global efforts to tackle biodiversity loss and the impacts of climate change. During the year there are lots of opportunities for the UK to have significant profile and impact internationally.



Over the next year, several major meetings of global environmental conventions and political summits will be held (Covid-19 pandemic permitting), in the UK and worldwide, at which the issues of climate change and biodiversity will be discussed. These include the Conference of Parties for the United Nations Framework Convention on Climate Change (UNFCCC COP26) in Glasgow, and the Convention on Biological Diversity (CBD COP15) in Kunming, China.

In the run up to these events, H M Treasury UK has published the [Dasgupta Review](#), which emphasises how global prosperity is fundamentally bound to nature and how society must both manage the demands on, and provide protection for the natural environment. The UK has also pioneered the ‘Leaders’ Pledge for Nature’. Launched at the 2020 United Nations General Assembly, this sets the scene for ambitious action on climate and nature throughout 2021.

The real challenge is to mainstream or embed biodiversity issues into the more prominent economics, social and climate change agendas. Achieving this requires a good understanding of the benefits provided by the natural environment and directing how we interact with and invest in them, thus ensuring overall development is sustainable in the long term.

This ‘Super Year’ provides an opportunity to showcase the valuable knowledge and expertise that the UK has gained for possible use elsewhere, and to learn from the experiences of others. The impact will be much greater if we can combine the knowledge and expertise from all four countries and the UK’s Overseas Territories; JNCC is currently working to help co-ordinate this.

Key approaches to emphasise will be:

- Impact of interventions – using modern technology to detect, potentially quite subtle, changes in the natural environment to assess which interventions are working and where we need to invest more (see page 20);
- Balancing demands on land and sea – considering how to balance multiple and potentially conflicting uses of the environment, such as agricultural production and protected areas, to optimise longer-term sustainability under climate change scenarios;
- Global partnerships and action – providing advice to government around international negotiations and particularly making sure that the views of all four UK countries are considered;
- Global impacts – assessing the negative impacts of UK consumption on the global natural environment and how this could be minimised;
- Best use of nature – making sure that the benefits provided by nature, especially in mitigating and adapting to climate change, are recognised and promoted.

- 2021

mes for nature, climate change and society



As well as sharing experiences across the UK there are huge opportunities to integrate these approaches into international investment through Official Development Assistance and Multilateral Development Banks.

The scene is set and the opportunity for nature is huge. We now need to make sure that the efforts are focussed and co-ordinated to ensure that the UK can both lead and learn from others.



Jessa Battersby
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Meet the Expert

In this issue we focus on our International Implementation Co-Team Leader Tony Weighell, who jointly leads on work in the Overseas Territories and related work in Latin America

What prompted your interest in the natural environment?

In my childhood and early teens, I spent long school holidays – winter and summer – on my grandparent's farm in north Yorkshire. My grandfather was, thinking back, a big influence. He had a large free-range poultry farm, spent nearly every daylight hour outside and was in many ways part of the local ecosystem – not that he would have recognised the word – the mosaic of habitats on his farm supported local wildlife and he fished, and shot game for food. Taking a lead from him, during the holidays I was virtually feral, roaming the farm, climbing trees (compulsory at that age) with wider exploration by bike. I spent a huge amount of time in wellies in the local beck, catching minnows and trout (falling in and almost drowning once) and watching kingfishers, herons and water voles – we called them water rats in those days – so it was predictable that I would eventually decide that I wanted to be a freshwater biologist. That didn't happen, I changed direction, and a decade and three universities later I ended up working as a geologist on oil projects in the North Sea, Middle East and South America. The interest in the natural environment persisted, if rather skewed to the distant past rather than the present day.

How did you become involved in your current role and what does it involve?

For the last ten years I have led, or co-led JNCC's Overseas Territories work which is now the main activity for the International Implementation Team. The route from oil industry geologist to current role was slightly convoluted. The collapse in the oil price in the mid-90s coincided with a gradual realisation that working in the oil industry, in a City of London office, had taken me a long way from where I wanted to be. So, I jumped from an industry and a culture that was focussed only on making money and, at that time, had little interest in the natural environment, into a post with JNCC as Earth Science and Coastal Advisor.

In those days JNCC was publishing the Geological Conservation Review series, and I recommend them for anybody interested in British geology and geomorphology. The series was brilliantly put together and edited by the then GCR team, now long gone. The JNCC geological work was phased out and I went on to manage a small Global Impacts Programme assessing the UK's impacts overseas from food, timber and biofuels imports. The programme turned out to be 'before its time', and relatively short lived, but it has, a decade later, now sprung back to life in a bigger, better and more ambitious form. I then moved on to leading a programme dedicated to Overseas Territory work.

JNCC's OT role through the work I have done has focussed on providing financial and technical support to the OTs to help them manage a wide range of environmental issues. Apart from being host to globally significant biodiversity, the OTs are mostly small island communities where people, livelihoods and food security are closely linked to the natural environment. The focus of the work has progressively changed from an advisory role to one of project implementation to make real differences, channelling not only funding but UK expertise – much of it residing in JNCC – into projects to support conservation, information management, the valuation of nature and building disaster resilience. The work has been repeatedly 'rebadged' over the years using different terminology, from biodiversity to ecosystem goods and services, then natural capital and now nature-based solutions, but the message remains the same, that biodiversity has immense intrinsic, social and economic benefits to the Territories.

What are the biggest challenges you face in your current role?

Where to start? Brexit and Covid have also obviously disrupted Spending Reviews and priorities, and overshadowed everything else, Covid making travel impossible and people's working lives incredibly hard.

Implementation Team in JNCC's work in America

Looking beyond recent events, a big challenge is funding, not so much how much is available but the cyclicity of funding with relatively short-term funding the norm (never more than three years, often less) to deal with long-term problems that need planning and interventions on a decadal scale – say three normal Spending Review cycles.

There are also competing priorities for JNCC staff time. We have world-class expertise in some areas – information management, use of EO, marine management – but not enough people to go round. How much expertise do you direct outside the UK when there is a lot to do at home?

A constant challenge working with international partners is to build and maintain effective partnerships. Establishing trust takes time (years) because OT and other international partners all too often have people parachuting in to make money through funding bids, use them as a research base for work the OTs don't need, or simply to lecture them on how to manage their own environmental affairs. Building trust through consultations and initial investment of time and money is essential to establish the relationships to make long term gains. Our OT relationships are all long standing but still need to be maintained as new governments are elected, ministers and civil servants change, and new environmental issues emerge.

What has been your greatest achievement at JNCC?

Greatest achievement sounds a bit grand. Can we settle for what I feel most pleased about? Going back to the Earth Heritage days, I played a small part in supporting the successful bid by Dorset and Devon for World

Heritage status for the Jurassic Coast. It was good to share in their success at the 2001 Helsinki meeting where UNESCO approved their bid.

More recently, I think managing the shift in OT work to an implementation role – hence the team name – has been important, working on the ground to implement projects in partnership with

OT governments, and more recently in South America.

There is genuine enthusiasm in the OTs for JNCC support and when you work with small communities in small island settings it is possible to see real benefits from JNCC's work.

JNCC supports many international projects. How is our international advice function developing?

We are at a turning point with the UK Government looking to use environmental diplomacy to support climate change mitigation and adaptation overseas, with a big emphasis on use of Official Development Assistance. JNCC aspires to contribute to this form of diplomacy, building on its immense, long-standing UK expertise complemented by more recent project work overseas, much of it in the Overseas Territories. With a new Chief Executive and new Chair coming in to JNCC, there are some strategic decisions to be made and a lot of opportunities for staff. The organisation will need to achieve the right balance between advice and project implementation roles. There are risks and opportunities with both. For advocacy there is the risk that advice will not be followed; for implementation on the ground there is the risk of time and money spent without bringing about effective change. We need to do both and succeed with both.



Tony Weighell

International Implementation Co-Team Leader

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Farewell reflections as

In April I will be leaving JNCC after 11 and a half years as Chief Executive. In total, I've worked for JNCC for 22 years – that's roughly 40% of my life! I wasn't present at JNCC's birth. When I joined the organisation it had already been in existence for eight years, and we celebrate its 30th anniversary next month. Given these circumstances, I've been in a reflective mood recently, looking back both on my career and the history of JNCC.



So much has happened since JNCC came into existence in April 1991. There have been some momentous political changes during that period. Devolved governments are now firmly established in Scotland, Wales and Northern Ireland, and more recently the UK left the European Union. These constitutional changes mean that the UK is a very different place to what it was 30 years ago.

The organisations that JNCC works with have also changed. JNCC was originally set up to provide a mechanism for the nature conservation bodies in England (English Nature), Scotland (Scottish Natural Heritage) and Wales (the Countryside Council for Wales) to come together and discharge their responsibilities for Great Britain as a whole and internationally.

The Countryside Council for Wales and English Nature have each now been amalgamated within larger bodies with broader remits (Natural Resources Wales and Natural England respectively). Scottish Natural Heritage has recently been rebranded as NatureScot. JNCC's remit was extended to formally cover Northern Ireland in 2006.

There have also been changes to how we operate. Originally, JNCC didn't have its own staff, but had people assigned to it from the three country nature conservation bodies, each with their own conditions of employment. This changed in 2005, when JNCC started to employ its own staff. More recently, the Covid pandemic has fundamentally changed how we have worked over the past 12 months.

I could mention many other changes, some of them associated with discrete events, some of them so gradual that you hardly realise how much the ground has shifted until you look back a few years later.

Over the three decades of its existence, JNCC has thrived by flexing in response to changing circumstances while maintaining its core functions. This combination of continuity and change is illustrated by biodiversity monitoring. In 1991, JNCC's terrestrial monitoring involved working with partner organisations to harness the activities of skilled volunteer recorders to provide a national picture of changes in the status of birds, mammals and other species. In 2021, volunteer-based species recording schemes remain at the heart of what JNCC does, but they are now complemented by the use of satellite technology which has revolutionised environmental monitoring in ways that could barely have been imagined 30 years ago.

So, what has JNCC achieved in its 30 years? And what I have achieved in my time as Chief Executive? Because of the nature of JNCC's work it's not straightforward to pick out specific outcomes and say "we did that". In contrast to many organisations, JNCC doesn't generally get involved in 'on the ground' environmental work. Nor does it set environmental policy – that is government's job.

we celebrate 30 years

JNCC has more of a backroom role – providing the evidence and advice that enables others to make decisions, whether it be about management on a nature reserve or setting national policy. And in almost all cases JNCC works in close partnership with other organisations, so that successes have been earned jointly.

Nevertheless, I am confident that JNCC's input has provided crucial benefits for nature conservation, both within the UK and internationally. We share some of these examples in this edition of *Nature News*.

I can't take credit for these successes, nor for any of the other amazing work that JNCC has undertaken while I've been Chief Executive. My role has been to help create the conditions within JNCC that have allowed others to thrive.

One of the ways in which I've done this has been by pushing the organisation to diversify and increase its funding. For many years JNCC was primarily funded by its core grant-in-aid (GIA) settlement which was agreed each year by the four governments. However, in recent years we have made a concerted effort to look beyond our core GIA by building relationships with potential funders and demonstrating the value of our work. And we have been successful in these endeavours. In 2015/16 our annual turnover was just over £11m. In 2020/21 it will be about £15m.

I am confident that JNCC's input has provided crucial benefits for nature conservation, both within the UK and internationally

The additional funding has allowed us to build organisational resilience, increase staff numbers, and give staff members the opportunity to undertake challenging and interesting projects. Most importantly, the funds have also benefited biodiversity.

Another thing I'm proud of is the organisational culture. JNCC is generally a very friendly, supportive and engaging place to work. Through my own behaviour, I hope that I have helped to sustain and grow this culture. My intention has always been to treat everyone with respect, to give people time and attention, and to genuinely listen. I've aimed to be open and honest, including about myself. I've tried to be open about my mistakes (which have been many) and to take responsibility for them. I've also talked openly about my mental health and how I've dealt with depression. I have not aspired to project an image of infallibility but rather to be human – to be myself with all the weaknesses and vulnerabilities that this entails.

I leave JNCC with mixed feelings. I'm looking forward to doing other things, but JNCC has been a major part of my life for so many years that I'm bound to miss it. I have no doubt there are exciting opportunities ahead for JNCC and I feel confident that the organisation is in capable hands with Colin in place as Chair and Gemma taking over as interim Chief Executive. Here's to the next 30 years!



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30 years at the



As we prepare to celebrate our 30th year we've been reflecting on our journey since JNCC was formed in April 1991. Throughout our anniversary year, we'll be featuring some of the key achievements and milestones on our JNCC timeline. Here we share examples of where our expert input has supported nature conservation, both in the UK and internationally.

Marine protected areas in UK waters

- The UK has a long history of designating terrestrial sites for environmental protection (e.g. Sites of Special Scientific Interest). But until the introduction of EU and domestic legislation from the 1990s onwards there was no equivalent requirement to designate marine protected areas (MPAs).
- Identifying a network of MPAs posed enormous challenges due to the vast area of the UK's marine waters, the paucity of biological data, and the need for appropriate site selection criteria.
- Working in partnership our experts provided scientific coordination of MPA programmes across the UK, leading work to identify MPAs in the UK's offshore waters, extending from the edge of territorial waters (12 nm from the coast) out to the UK Continental Shelf.
- There are now 76 MPAs with a total extent of 260,000 km² in UK offshore waters. These sites provide protection for scarce and threatened habitats and species, including sandbanks, cold-water corals and harbour porpoises.

Overseas Territories

- The UK's Overseas Territories are mostly small islands. They are immensely important for global biodiversity, holding a large number of plants and animals that are found nowhere else in the world, as well as threatened habitats such as coral reefs. In most of the Territories the economy is highly dependent on maintaining a healthy environment, for example to support tourism or fisheries.
- For many years JNCC has provided scientific advice on environmental matters to governments in the UK and in the Territories themselves. Our involvement has always been collaborative and based on helping the Territories to meet their own needs.
- Over time, our approach has shifted from a narrow focus on biodiversity to a more holistic approach, emphasising the value of the environment in supporting a 'green economy'. Through pioneering work on ecosystem services and nature-based solutions we have influenced the development of management plans and environmental policies in the Territories.
- For example, our experts have demonstrated the crucial role of nature in mitigating the devastating impacts of hurricanes in the Caribbean. Our input has shown how the right decisions on natural resource management can enhance economic security while benefitting the rich biodiversity of these islands.

heart of nature



Rebecca Pow, Minister for Domestic Environment, Defra

For thirty years JNCC has been at the heart of nature conservation in the UK and internationally. It has provided evidence and advice that ministers across the four nations of the UK have relied on to make informed decisions about the environment. The need for JNCC is stronger now than ever. The year ahead of us offers unprecedented opportunities to address the global crises of climate change and biodiversity loss. JNCC's expertise will help the UK to show leadership on the international stage and meet its commitments at home.



Zac Goldsmith, Minister for Pacific and the Environment, FCDO & Defra

Application of new technologies

- The increasing accessibility of Earth observation data (e.g. from the European Space Agency's Copernicus satellites) has opened the door for a range of applications in environmental mapping and monitoring.
- We've been at the forefront of showing how EO data can be translated into practical applications that benefit nature conservation. Combining EO data with other data sources and undertaking sophisticated modelling has moved us beyond basic habitat mapping and monitoring to undertake assessments of natural capital.
- This approach provides a powerful tool to inform decisions on land management both within the UK and internationally. For example, our experts have developed an ecosystem service mapper to support sustainable land management in Colombia.

Spotlight o



Helping to meet devolved environmental priorities in the UK through joint working is one of JNCC's strengths. We now have a dedicated officer, Alison Lee, who is the focal point for enhancing our collaborative work in Scotland.

"I recently started in a new role as JNCC's Evidence and Operations Co-ordinator for Scotland. My work is focussed on raising JNCC's profile in Scotland and enhancing the links between JNCC, [NatureScot](#) and the [Scottish Government](#). I am helping to share information between organisations and supporting the development of new and existing partnerships. JNCC supports a similar liaison post for Wales which has run successfully for several years, and a complementary post for Northern Ireland will commence shortly.

I am based in Edinburgh and starting this new role during the Covid-19 pandemic has brought some unique challenges.

Under normal circumstances I would have travelled around Scotland and to JNCC's offices in Aberdeen and Peterborough to meet key contacts in both Scotland and JNCC. Instead I have joined a whirlwind of online meetings in order to get to know people and groups, to understand their work areas and to discuss opportunities for new or enhanced collaboration. I am fortunate to connect with people via the click of a button yet it is a strange scenario; each day my horizons expand yet the view remains the same – the changing seasons marking the march of time when looking out from my 'office' window.

Despite the restrictions of home-working it has been an exciting time to start in this role. Significant opportunities now arise for our approach to nature conservation in Scotland, for example: advances in technologies for monitoring and surveillance, changes in policies for managing our land and seas following EU exit, and the development of the post-2020 global biodiversity framework. There are significant challenges too with the twin crises of climate change and biodiversity loss. All of these issues are placed at the heart of JNCC's '[Strategy 2020-2025](#)'. Furthermore, our role in providing technical support on multi-lateral environmental agreements, developing consistency in approach, and sharing data, expertise and skills all prove invaluable in helping to tackle these issues and in contributing to shared outcomes.

Much needs to be done, yet there are many successes to celebrate! Just last December, [Scottish Ministers announced](#) the designation of 12 new inshore and offshore Special Protection Areas and four new inshore Marine Protected Areas (MPAs) in Scottish waters. These new designations are the outcome of 20 years of data gathering and evidence assessment, jointly undertaken by NatureScot, Marine Scotland and JNCC. The West of Scotland Deep-Sea Marine Reserve was designated just a few months earlier. Our marine specialists supported Scottish Government in the development and evidence evaluation for this MPA too. Featuring the deepest parts of Scotland's seas (at over 2,500 metres) the site will safeguard some of the most vulnerable habitats and species on the planet, including deep-sea sharks, coral gardens and a diversity of other fauna. The site is regarded as "internationally significant" by the Convention on Biological Diversity.

n Scotland

New technologies are a vital part of NatureScot and Scottish Government work areas, and JNCC is right at the forefront of these too. We have strong capabilities in Earth observation data processing and analysis, and our [Analysis Ready Data](#) service is being used in Scotland to assess habitat condition, habitat change and impacts, such as from wildfires. JNCC hosts the [Scottish Remote Sensing Portal](#) on behalf of Scottish Government, which contains Scottish Public Sector LiDAR data for download. Geo-spatial data will have increased importance in decision making for land-use change scenarios and there is opportunity for JNCC to collate and analyse evidence in support of Scotland's future land management policies.

Looking ahead, 2021 will be particularly exciting for JNCC's work with Scotland because the UK will host the key United Nations climate conference ([COP 26](#)) in Glasgow during November. Countries of the world will come together to agree actions to tackle climate change, in support of the ongoing efforts to increase global climate ambitions, build resilience and lower emissions. Our experts will contribute to this event by providing robust scientific evidence and advice in support of the UK and devolved governments. We will also contribute to the Convention on Biological Diversity Conference of Parties in Kunming this year (COP 15).

I look forward to when we can occasionally travel and meet in person once again. My Welsh counterpart tells me that country liaison efforts are best underpinned by shared conversation over tea and cake. Well, yes, I look forward to more of this too!"



Alison Lee
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"Through working with the JNCC we influence UK and international nature conservation efforts. Closely involved with JNCC since its inception in 1991, I marvel at its solution-driven and innovative partnership approaches. Our resilience depends on nature sustained through everyone pulling together"

Professor Des Thompson FRSE,
Principal Adviser on Science and
Biodiversity, NatureScot



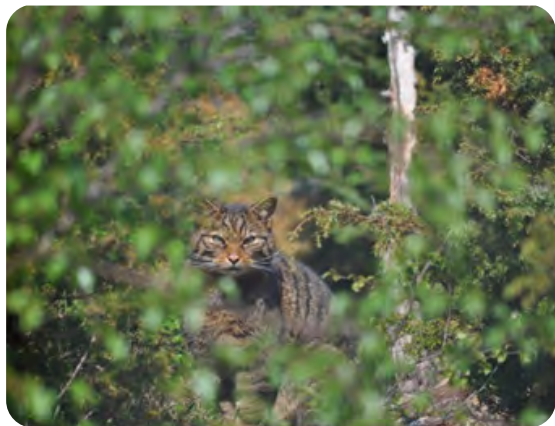
Celebrating LIFE – protecting some of the UK’s most precious habitats and species

Since 2015, JNCC has been the UK National Contact Point for EU LIFE funding. The [LIFE fund](#) is the EU’s financial instrument to support environmental and climate projects. During these five years our experts have supported hundreds of organisations and applications, resulting in 21 projects receiving funding worth more than €68 million and generating a total of more than €118 million in overall funding and investment (the results from the latest Call are still outstanding).

Some of the highlights include restoring peatlands in the North Pennines ([Pennine PeatLIFE](#)); trialling new technologies to reduce pesticides and chemicals in the agricultural sector ([LIFE Laser fence](#)); controlling invasive alien species in English river systems ([RapidLIFE](#)); restoring seagrass meadows of the coast of Southern England ([LIFE Recreation Remedies](#)); protecting sand dunes in Wales ([SolLIFE](#)); reducing pollution from the refrigeration industry ([REAL Alternatives for LIFE](#)); protecting the Celtic rainforest in Wales ([Celtic Rainforest LIFE](#)) and [Unlocking the River Severn LIFE project](#), which, with a budget of over €20 million, is the UK’s biggest LIFE project.

The application process for LIFE funding is extremely technical and takes several months. For those interested in applying for funding, The National Contact Point (NCP) team has offered application writing workshops, logical framework training, finance webinars and a dedicated website with lots of additional information. The support has also included a hotline and enquiries service managed by our experts.

The funding process is extremely competitive as applications are competing with projects from across the whole of the EU. However, since JNCC took over the UKNCP, the UK has consistently been the most or the second most successful country in Europe in obtaining LIFE money. This success was recognised by the European Commission and other Member States who frequently visited the NCP team in Peterborough to learn from our expertise. Defra and the devolved administrations, who supported the NCP financially, have also recognised the great success and hard work of the NCP team.



NatureScot as partners and is releasing 20 wildcats into the wild every year to ensure the long-term survival of the ‘highland tiger’ in Scotland.

For more information contact the UK’s National Contact Point: Jessica.magnus@jncc.gov.uk or UKLIFE@jncc.gov.uk or [view our website](#).

The projects we’ve supported cover the length and breadth of the environmental spectrum – including climate mitigation, reducing pollution and chemicals, and protecting some of the UK’s most precious habitats and species

The UK has left the EU and is no longer eligible to bid into the LIFE programme. However, Defra has made funding for a variety of large-scale environmental projects available including the Green Recovery Challenge Fund, for which a new £40 million funding round was recently announced, and the £640 million Nature for Climate Fund.

A personal favourite has been the 2018 [SWAforLIFE](#) project, which is reintroducing the critically endangered Scottish wildcat into the Cairngorms national park. The project is led by the Royal Zoological Society of Scotland with Edinburgh Zoo and



Launching QQR 7

One of our many roles is our work with the UK country nature conservation bodies (CNCBs) to ensure that UK legislative lists of species are up-to-date, including species that are protected in Great Britain under the Wildlife & Countryside Act 1981. Roughly every five years, the CNCBs in Great Britain, working with JNCC, review Schedules 5 and 8 of the Act through a Quinquennial Review (QQR).

Planning the QQR process is no mean feat, and planning for QQR 7 started in early 2020 with the formation of a JNCC/CNCB working group. The group's first task was to discuss how data would be gathered, to improve on previous time-consuming methods. In addition, there was a need to revise the criteria used to select species for inclusion on the schedules, following a review by JNCC, the CNCBs and NGOs. The outcome is that the data-gathering phase of QQR 7 will be through a greatly simplified online survey.



Unfortunately, with the arrival of the Covid-19 pandemic, and the many restrictions that were imposed, many of the major external providers of information used in the QQR process were furloughed and plans for launching QQR 7 in 2020 were put on hold.

The timetable for 2021 is therefore tight. Data gathering starts in April and the final report is due by the end of the year. This includes external reviews and sign off by the CNCBs and our Joint Committee. However, all stakeholders agree that we should not and cannot delay QQR 7 any longer and all those involved are committed to meeting the deadline.

The data-gathering process for the QQR 7 will run from 8 April until 7 July. Through the QQR 7 process, stakeholders will be able to:

- propose additional Endangered species for inclusion on the schedules;
- propose species for removal from the schedules;
- propose a change in protection status of species on the schedules.

We look forward to receiving all responses.

* In Northern Ireland, The Wildlife (Northern Ireland) Order 1985 is separate legislation equivalent to the Wildlife & Countryside Act.



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Mapping and modelling

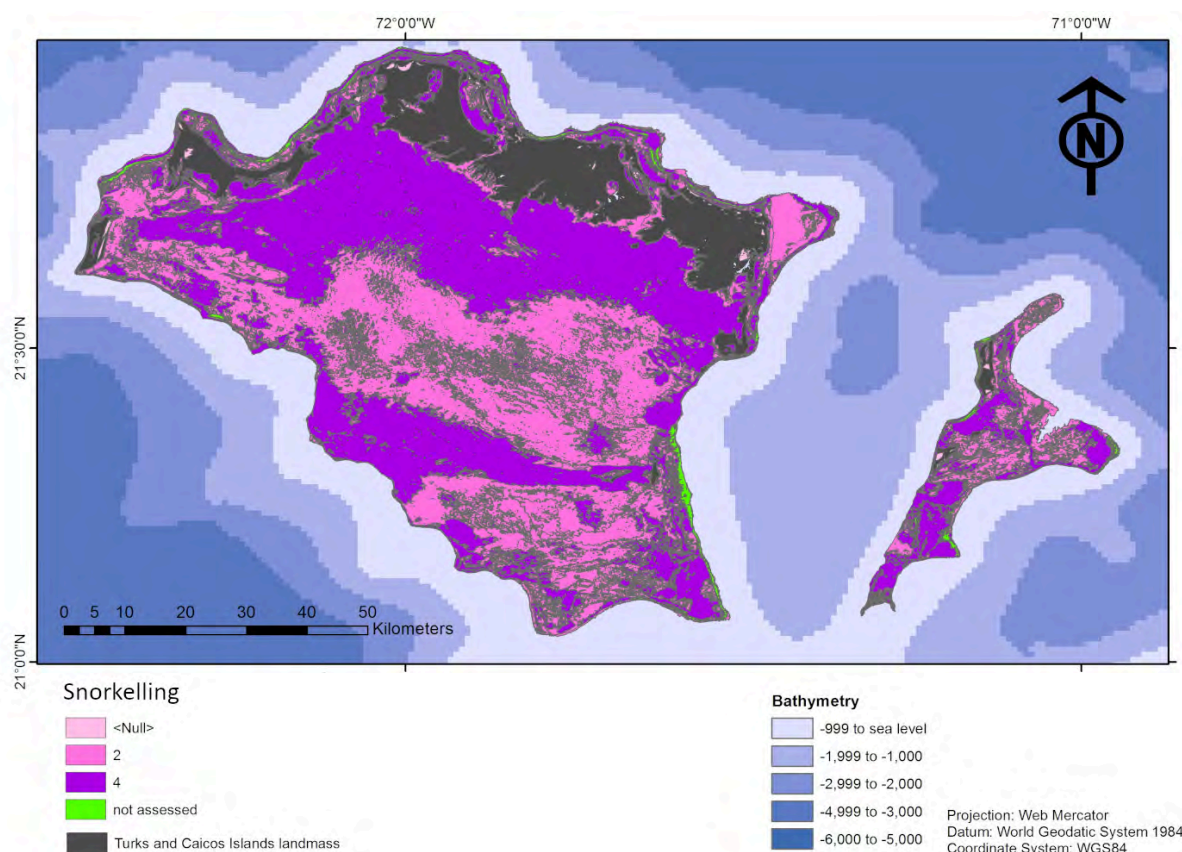
JNCC's new marine natural capital group sets to work on practical applications of the natural capital approach for ocean areas

The term 'natural capital' is being used more and more as we look for ways to manage the natural environment more sustainably. England's 25 Year Environment Plan highlighted the Government's commitment to using the natural capital approach, but what does this mean?

Fundamentally, the natural capital approach is about emphasising how much we rely on nature for our health, well-being and economic prosperity. Central to the concept is understanding and documenting nature's value, and integrating this into economic decisions, which is why terminology from the financial system is used. Species and habitats are natural capital assets, which generate ecosystem services, such as supplies of food, opportunities for recreation, and regulation of our climate system.

With the growing acceptance of the natural capital concept, the challenge now is to turn the ideas into evidence and tools that can help decision making. One method is determining the monetary value of the benefits we receive from nature, so that we can record this natural wealth in national accounts, alongside those for financial capital. However, we also need to understand the ecological, social and cultural factors that create this value, to ensure that we make the right choices about managing all our natural capital assets and hence maintain the flow of the ecosystem services on which we depend.

Our experts have already been involved in developing tools for managing natural capital on land, including recent projects in [Chile](#), [Columbia](#) and the [UK Overseas Territories](#). Our new Marine Natural Capital group has the task of developing similar approaches for marine areas, which brings an additional layer of complexity due, at least in part, to a relative lack of data. Although the group is new, its work brings together long-standing expertise from across JNCC in marine monitoring, mapping and modelling.



g marine natural capital

The Marine Natural Capital team has been working on several pilot projects to develop asset registers, which are tools for summarising the extent and condition of habitats and species' stocks, and the ecosystem services they supply. The first of these is being developed at a regional scale for the North East Offshore Marine Plan area. This makes good use of several of JNCC's existing data products, including maps of seabed habitat, human activity and seabed disturbance. The team has used published data to determine the relative importance of the different sand and mud habitats across the area in delivering key ecosystem services, and created maps to help interpretation of the information.

A second asset register is being developed at the scale of an individual marine protected area (MPA), for the Farnes East Marine Conservation Zone off the north east English coast. This project considers what improvements can be made using marine survey data, rather than the mainly modelled data used for larger-scale habitat maps. The team will also trial an MPA 'dashboard', to improve communication of natural capital assessment results, and test the use of Bayesian Belief Network models to explore how different management scenarios might affect ecosystem service delivery.

We also have a project focussing on the creation of an asset register for the Turks and Caicos Islands (in the Western Atlantic), as part of a wider Darwin Plus project to support local coastal and marine management ([DPLUS119](#)). The work follows on from the [natural capital accounts](#) developed for JNCC by eftec in 2018-19. These accounts highlight the value of local market sectors such as fisheries and tourism, but also the importance of natural coastal defence, carbon uptake, and local recreational and cultural uses. In approaching the asset register, the team constructed logic chains to connect these economic benefits back to the habitats and species that are pivotal in their continuing supply.



Other ongoing work for the North Sea also links to natural capital accounting. In a collaboration between JNCC and Cefas, initial [marine natural capital accounts](#) developed in 2019 are being updated with a more detailed assessment of seabed carbon. The work will improve estimation of carbon stocks and flows, and the value to the UK economy of these important seabed assets.

Refining methods for asset registers and ecosystem service mapping at different spatial scales, supporting natural capital accounts, and developing decision-support tools will remain an important part of the group's future work, but we also have wider plans. Immediate priorities are to understand what the outputs from ecosystem models and the indicators used to determine whether our marine environment has reached Good Environmental Status can tell us about natural capital assets and ecosystem services. The group will also be looking at ways to bring natural capital thinking into specific marine decision-making contexts, including how it can be incorporated into conservation advice for marine protected areas.

Learn more about [our marine natural capital work](#).



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Monitoring threatened peatlands using Earth observation imagery

Our [new report](#) showcases how Earth observation imagery can be used to monitor how threatened peatland habitats are changing over time and the effectiveness of restoration interventions.

Peatland ecosystems play a vital role in carbon sequestration, water quality and flow regulation, and in supporting rare and threatened species. These vital habitats have rapidly become a key focus in UK policy with restoration recognised as a valuable nature-based solution in meeting net-zero emissions targets. Mapping areas in poor condition, using bare unvegetated peat as an indicator, is a crucial step in targeting restoration efforts and monitoring condition over time.

Building on methodology trialled in a [pilot study](#), our experts have partnered with Forest Research, Natural England and Welsh Government to explore how we can monitor peatland condition over time using a time series of Sentinel-2 imagery. This is part of a [suite of projects](#) under the [Caroline Hershel Framework Partnership Agreement on Copernicus User Uptake](#), showcasing the use of Sentinel data in the environmental sector. This project focussed on sites across the UK to examine changes in the amount of bare peat through time and assess how this can inform peatland management.

Maps of bare peat were created for four study sites at a fine-scale using very-high resolution (VHR) aerial imagery, and then scaled to cover a wider region using a time series of Sentinel-2 optical imagery from 2015 to 2020, alongside climatic and topological data. The time-series maps were incorporated into an [R Shiny application](#) allowing users to visualise the changes. Figure 1 shows Sentinel-2 images for a region in the Brecon Beacons, Wales (top row) and compares the bare peat cover predictions for the corresponding images (bottom row).

These maps flag areas with large amounts of bare peat, highlighting locations for targeting ground survey validation and management strategies. Decreases in predicted bare peat cover can suggest vegetation recovery and can indicate the efficacy of restoration interventions. Working alongside our partners and site experts was invaluable in interpreting modelled predictions and their accuracy, as well as understanding the patterns of change, which are specific to site management operations.

This project has highlighted the great potential of these maps in targeting ground monitoring and interventions, evaluating restoration schemes, and assessing the effectiveness of different restoration methods. It has honed our use of Earth observation in bare peat modelling and has identified possible improvements to facilitate the application of these methods alongside other condition indicators. Applying this approach provides a cost-effective means of monitoring peatland condition on a wide scale and will facilitate targeted restoration efforts to support peatland recovery aims, carbon capture and net-zero emissions goals across the UK.

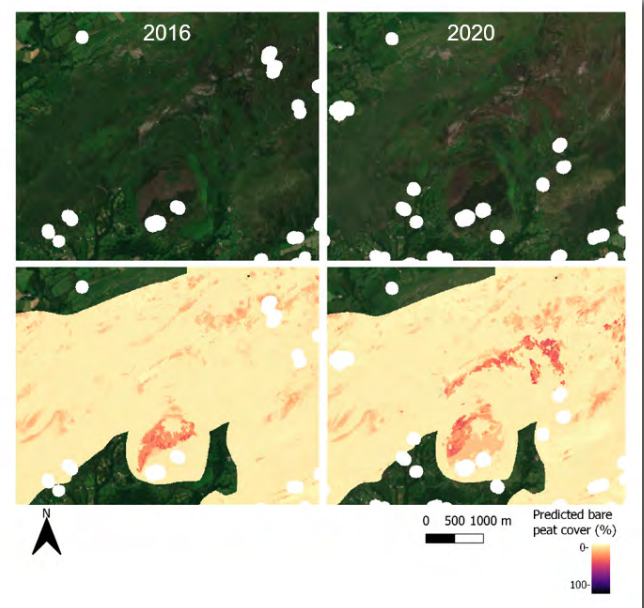


Figure 1: Time-series maps displaying changes in the predicted amount of bare peat cover (bottom row) between 2016 and 2020 for a site in the Brecon Beacons, Wales (top row), plotted against Sentinel-2 imagery. White areas represent areas of cloud.



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Volunteer diversity in biodiversity schemes

A key part of the terrestrial biodiversity evidence JNCC produces is collected by thousands of skilled volunteers, in partnership with NGOs, research organisations and country nature conservation bodies. These volunteers are highly valued by JNCC and our partners and we want to make sure that we are opening opportunities to as many people as possible to volunteer with us.

During 2020, many organisations across the globe looked inward and examined what their practices mean in terms of equality, diversity and inclusion (EDI). This was true of JNCC and in summer 2020, we established an [EDI group](#) which meets fortnightly and includes an objective dedicated to our work with volunteers. Our commitment to volunteer diversity extends through to our [Terrestrial Biodiversity Evidence Strategy](#) (2020) with an objective “to grow a diverse network of skilled volunteers invested in biological recording”.

Some key things we wanted to do this year included consolidating what we already know about volunteer diversity in our schemes; establishing what the greatest barriers to participation are; learning what works and what doesn't work from previous projects tackling diversity; and establishing short- and long-term goals with our partners. We kicked this off with a workshop with our terrestrial monitoring partners in Autumn 2020 as part of the [TEPoP](#) (Terrestrial Evidence Partnership of Partnerships) online conference series. The workshop was attended by 44 people from 16 organisations. Although the workshop highlighted that we don't currently know a lot about the diversity of our volunteers, we were able to identify priority areas around socio-economics, race, age and ensuring that our schemes represent local demographics. We generated lots of ideas about the next steps we and our partners want to take, and we have started do some of these things.

We believe that by bringing down barriers to participation and opening opportunities to all, there will be benefits to our work and to wider society

An important area highlighted in our Autumn workshop was that we need information about the diversity of our volunteers to understand and remove barriers to participation, and to monitor progress. Collecting volunteer diversity data requires careful consideration as this information is sensitive “special category data” (as defined by the General Data Protection Regulation). In February 2021, we held a second online workshop with our terrestrial monitoring partners with a focus on collecting data on volunteer diversity. At the workshop, we worked through some issues related to collecting this type of information. We have also been able to launch a volunteer survey with the Bat Conservation Trust to help us understand volunteer recruitment and retention in relation to EDI within the National Bat Monitoring Programme. We hope to apply the lessons learnt from this work across all of our schemes.

Making changes to our long-term monitoring schemes can't happen overnight, but we do want to start taking opportunities to make a difference now. This year we have begun several pilot projects with our partners to improve local data collection and diversify our volunteer base. These projects include using new technologies (e.g. eDNA, acoustics and apps) to open volunteer opportunities to new audiences and expanding some current schemes for instance into urban areas where there are more diverse communities of people.

Our work with EDI and our volunteer networks has only just begun in earnest and we hope that together with our partners we will be able to improve our schemes for all current and potential volunteers.



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Monitoring

Breeding Birds

JNCC works with partners on [several long-term monitoring schemes](#) to understand how different habitats, plants and animals are faring in the UK. In this edition of Nature News we focus on the [Breeding Bird Survey](#).



The Breeding Bird Survey (BBS) is run as a partnership between JNCC, the British Trust for Ornithology (BTO) and the RSPB – relying on thousands of volunteer recorders. Participants are allocated a random sample 1 km square near to where they live, which they visit twice a year in the spring/summer (the bird breeding season) to record all the birds they see and hear as they walk a set transect route. The spatial coverage of samples was impacted by the Covid-19 pandemic last year, but in a typical recent year the scheme has 4,000 sample squares covered! In addition to recording birds, volunteers also record sightings or signs of mammals along their route, and many multi-talented recorders also revisit their sites later in the year to record butterflies as part of the Wider Countryside Butterfly Survey.

The large sample size of the BBS enables us to have a better understanding of bird trends both at a UK level and at smaller geographical scales. The results from the BBS feed into UK biodiversity indicators and country-level indicators. A large sample size also helps us to explore the reasons for change – something that's invaluable for both policy makers and scientific researchers. It gives us the statistical power to break down the results by environmental factors, such as land-management regimes or different climate gradients. Dozens of scientific papers are published using BBS data each year. A recent example includes a study showing a positive impact of agri-environment schemes on woodland and hedgerow bird species in Wales (Dadam & Siriwardena 2019).

As the UK moves forwards from a very hard and disruptive year, there has been an increasing focus on the need to ensure a green recovery. Having robust scientific evidence on biodiversity, such as the data collected in the BBS, is important for making wise policy decisions that will have the most benefit for the natural world on which we depend. As we look forward to the global conference on climate change (COP26) due to be held in Glasgow later this year, we aim to bring the impact of climate on the biodiversity crisis into focus, and note what our monitoring schemes can tell us.

The long-term nature of the BBS is particularly valuable in helping us to understand the impacts of factors such as climate that play out over a long period of time. The scheme started in 1994, and followed on from another survey – the Common Bird Census – which started in the 1960s. Several publications highlight the use of BBS data to explore impacts of climate change. One study showed that one-third of English breeding bird species show evidence of population responses to climatic variables over 50 years (Pearce-Higgins & Crick 2019). The impacts are species dependent. Predictions suggest that more breeding species in the UK are likely to increase than decrease in abundance, but worryingly, most of those predicted to decline are already in an unfavourable conservation status.

References: RSPB poll: https://www.rspb.org.uk/globalassets/downloads/recovering-together-report/recovering-together-report_nature-and-green-recovery_rspbyougov_june-2020.pdf | Dadam, D. & Siriwardena, G.M. 2019. Agri-environment effects on birds in Wales: Tir Gofal benefited woodland and hedgerow species. *Agriculture, Ecosystems and Environment* 284: 106,587. | Ferraro, D.M., Miller, Z.D., Ferguson, L.A., Taff, B.D., Barber, J.R., Newman, P. & Francis, C.D. 2020. The phantom chorus: birdsong boosts human well-being in protected areas. *Proceedings of the Royal Society B Biological Sciences*. <https://royalsocietypublishing.org/doi/10.1098/rspb.2020.1811> | Massimino, D. 2019 French data and UK climate change, in: Harris, S.J., Massimino, D., Eaton, M.A., Gillings, S., Noble, D.G., Balmer, D.E., Pearce-Higgins, J.W. & Woodcock, P. 2019. The Breeding Bird Survey 2018. BTO Research Report 717. British Trust for Ornithology, Thetford. | Pearce-Higgins, J.W. & Crick, H.Q.P. 2019. One-third of English breeding bird species show evidence of population responses to climatic variables over 50 years. *Bird Study* 66: 159–172.

ng focus

Bird Survey

For example, the Curlew – red listed in the UK – is predicted to decline, with core upland areas – its current stronghold habitat – becoming less suitable in response to changing climate (Massimino 2019). Knowing likely climate impacts can help inform mitigating action, for example, minimising other pressures on areas of critical habitat.

Alongside providing scientific evidence, schemes such as the BBS are also valuable by virtue of their very existence – as they promote volunteers getting out into the environment, with the associated health and well-being benefits this brings. We are highly grateful for the volunteers who contribute so much time and expertise, but we also hope that they can get something out of taking part too. Several surveys undertaken in 2020 captured the value that the public put on experiencing wildlife during the Coronavirus crisis, for example a poll commissioned by RSPB in May 2020 found that 81% agreed they had felt happier whilst/after spending time visiting nature. Birds are particularly valuable in enriching our soundscapes, with a recent study showing that birdsong is an important component of the natural environment as its exposure helps to convey restorative effects to hikers (Ferraro *et al.* 2020). In the BBS recorders are asked to record by both sight and sound, giving a full as possible a sensory experience, as well as a better picture of the more cryptic bird species out there!

In 2021, as Covid-19 restrictions ease and more people become protected through vaccination, we are hopeful that participation in biodiversity monitoring will be able to rebound. This will allow the continued provision of valuable evidence, as well as giving extra motivation for volunteers to get out into nature and make a difference.



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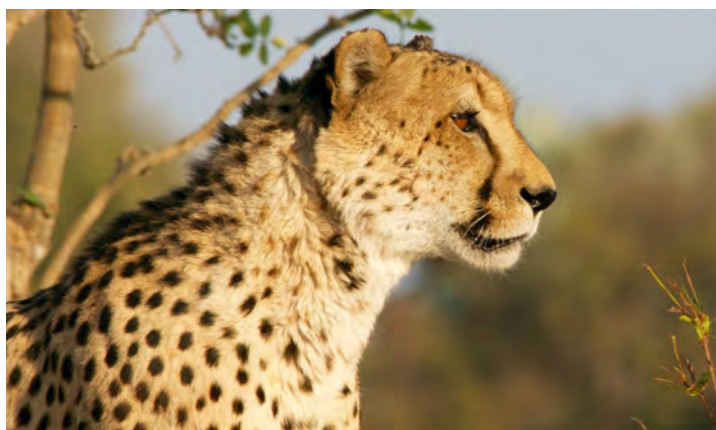
Conservation *Conversation*

In this issue we meet our interim Chief Executive Dr Gemma Harper OBE. Gemma was previously Deputy Director for Marine Policy in Defra, where she led work to protect the global ocean. She was also Defra's Deputy Race Champion. A Fellow of the Academy of Social Sciences, Gemma is an external advisor to both the European Centre for the Environment and Human Health (ECEHH) and the Capabilities in Academic Policy Engagement partnership (CAPE).



Q Species that inspired you as a child?

Cheetahs – I thought they were the most spectacular creatures on the planet.



Q What concerns you most about the natural world?

That humanity largely believes – and certainly acts – as though we are not part of it.

Q What do you do away from the office?

Cook – I love spicy food! Socialise – I really enjoy spending time with my friends. I love the water – ponds, rivers, lakes, the coast – and especially rock pooling! I try to garden for local wildlife – bees, butterflies, moths, birds, slow worms, hedgehogs. My heart soars when I see our frequent red kite visitors. They remind me of my Mum.

Q Where is your favourite place?

With my husband.

Q If you could dine with any four guests who would they be?

Queen Elizabeth I, Bette Davis, Miriam Margolyes and Maya Angelou.

Q Who is your human hero in the natural world?

There are too many to choose from! But whilst working in Defra Marine, I have been inspired by Her Deepness, Sylvia Earle, who I had the pleasure of meeting at UNFCCC COP25.

Q Desert Island Disc?

Anything by Prince.

Q Place you'd most like to visit?

So many places...! One of them I am fortunate enough to be visiting this August is the Knepp Estate, one of the largest rewilding projects in lowland Britain.

Q What would you like to achieve in your time at JNCC?

I want to continue to build a happy, inclusive, agile organisation focussed on our mission for nature.

Q If you could choose another job or career, what would it be?

Horror film make-up artist.

