

NATURE NEWS

Winter/2018-19



In this edition:

- Marine survey diary
- Engaging business for biodiversity
- Conservation Conversation
- Marine pollution partnership

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Frosty leaves © Maddy Long/JNCC

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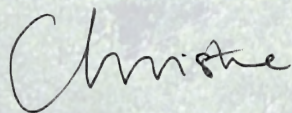
Chief Scientist's Introduction

Welcome to the first issue of our relaunched newsletter – *JNCC Nature News* – bringing you updates and information on our UK and international work. I'm really delighted to see Nature News returning in a new format, incorporating the best ideas from the earlier series. The Communications team have done a great job in bringing this first issue of the new series together. It's a great way for us to celebrate success and share our interesting activities with our colleagues and the wider world. This issue reports on many exciting recent and ongoing developments in global nature conservation.

We celebrate here the work of our Senior Ornithologist Dr David Stroud MBE. David has been made an Honorary Patron of the African-Eurasian Migratory Waterbirds Agreement (AEWA) and has received the BTO's Marsh Award for International Ornithology. His expert scientific knowledge and tireless bird conservation work are a real asset to JNCC, both nationally and internationally.

Increasing awareness of the value of the natural environment in supporting economic growth and underpinning human wellbeing is a theme that runs through our strategy. The natural capital approach is explained by Matt Smith in our *Meet the Expert* feature. We're working on a project in Chile that's assessing how biodiversity underpins environmental functions and processes that are critical to wine production in the Colchagua Valley. In the UK's Caribbean Overseas Territories we're working with our partners to understand how the island communities can work with nature to find cost-effective, nature-based solutions to managing the growing risks posed by climate change.

At our Joint Committee meeting in November, our Chair, Professor Chris Gilligan, welcomed three new members – Lord Blencathra, Deputy Chair of Natural England, Natural England Board member Professor Michael Winter and Natural Resources Wales Board member Professor Steve Ormerod. Our Committee meets four times a year to discuss strategic nature conservation issues and provide high-level direction for JNCC's work.



Christine Maggs, JNCC Chief Scientist



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.

Helping to protect wildlife

Representatives from JNCC's International team attended the landmark 2018 Illegal Wildlife Trade Conference on 11 October. The Duke of Cambridge delivered the keynote speech at the opening to the conference which brought together global leaders to help eradicate illegal wildlife trade and better protect the world's most iconic species from the threat of extinction. <https://www.gov.uk/government/topical-events/london-conference-on-the-illegal-wildlife-trade-2018>



Spotting Seabirds At Sea

JNCC's Volunteer Seabirds at Sea (VSAS) scheme uses volunteer surveyors on ferries to collect data on the abundance and distribution of seabirds at sea. We have been working closely with CalMac Ferries and MARINElife on a pilot training and mentoring programme. The first surveys will roll out on CalMac vessels in the spring. So far, 14 mentors and over 40 other volunteers have been trained by JNCC to collect data using European Seabirds at Sea (ESAS) methods. More courses are planned throughout 2019.



Partnership working in PhDs

JNCC is collaborating in a new tranche of Doctoral Training Partnerships. The scheme, which starts this year and is funded by NERC, will see JNCC partner with universities to support students to gain experience in nature conservation.

jncc.defra.gov.uk/page-7667

SUPER: The Scottish Universities Partnership for Environmental Research – Universities of Aberdeen, Edinburgh Napier, Heriot-Watt, St Andrews, Stirling, Strathclyde, West of Scotland, Highlands and Islands	QUADRAT: To empower citizens with the capability of becoming future leaders in government, commerce, charities and higher education institutes nationally and internationally - University of Aberdeen and Queens University
ACCE: Adapting to the challenges of a changing environment – Universities of Liverpool, Sheffield and York, Centre for Ecology & Hydrology, Natural History Museum	PANORAMA: A Yorkshire partnership for doctoral training in environmental careers - Universities of Leeds, York and Hull
ARIES: Advanced Research and Innovation in Environmental Sciences – Universities of East Anglia, Kent, Essex, Plymouth and Royal Holloway University of London, British Antarctic Survey, British Geological Society, British Trust for Ornithology, Centre for Ecology & Hydrology, Earlham Institute, Institute of Zoology, ZSL, John Innes Centre, Marine Biological Association, PML	INSPIRE: Automating the analysis of high-resolution sidescan sonar data to support marine habitat monitoring – University of Southampton, National Oceanography Centre, British Antarctic Survey, Natural History Museum and the Marine Biological Association

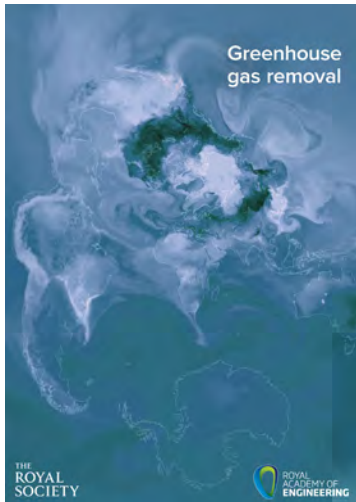
Impact of climate change on coral gardens

JNCC marine staff contributed to a new set of report cards published by the Marine Climate Change Impacts Partnership (MCCIP). The coral gardens report card is part of a series of cards that explain how some of the UK's most important marine habitats and species are being affected by climate change, and how these impacts could be managed. MCCIP is a partnership between marine scientists and sponsors from the UK and devolved governments, their agencies, NGOs and industry. http://www.mccip.org.uk/media/1810/mccip-coral-gardens-report-card_second-run_v5.pdf



in Brief

Achieving net-zero carbon emissions by 2050



JNCC's Chris Cheffings was a contributor on the recent joint report by the Royal Academy of Engineering and Royal Society on greenhouse gas removal. The report presents an ambitious plan for how the UK can lead the way in deploying greenhouse gas removal technologies to achieve net-zero carbon emissions by 2050.

<https://www.raeng.org.uk/publications/reports/greenhouse-gas-removal>

Business and Biodiversity

JNCC has published two reports aimed at encouraging greater integration of biodiversity into business decisions. The reports demonstrate the avenues of action that businesses can take to manage their biodiversity impacts and dependencies.

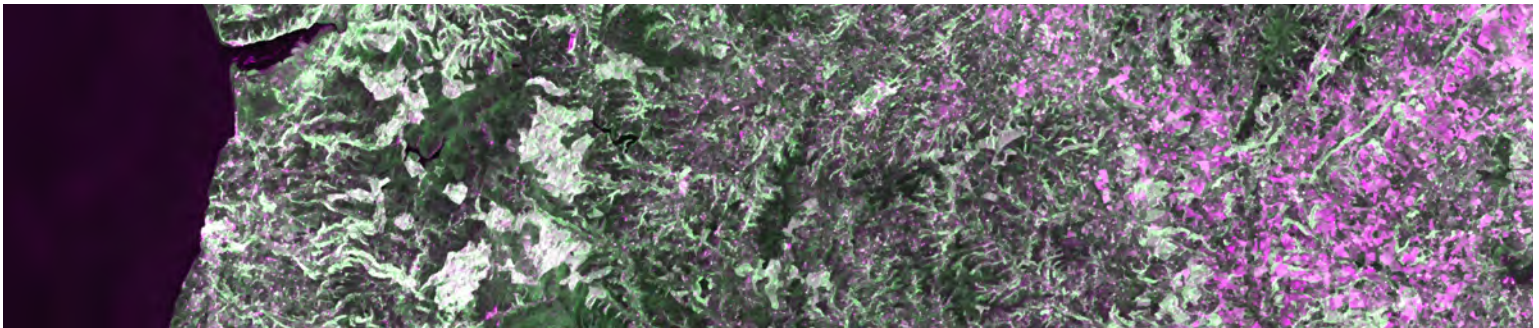


Biodiversity risk - integrating business and biodiversity in the tertiary sector
jncc.defra.gov.uk/page-7626

Mainstreaming international biodiversity goals for the private sector
jncc.defra.gov.uk/page-7678

Living Wales - EO Strategy

Gwawr Jones, JNCC's Earth Observation (EO) Specialist, presented at the launch workshop for *Living Wales* - a major research initiative to develop a strategic plan for Earth Observation in Wales. *Living Wales* is a unique and world-first concept. It aims to capture the state and dynamics of Wales' landscape, in near real time, both historically and into the future. This will be achieved through the integration of Earth Observation data, ground measurements and process models. <https://wales.livingearth.online/>



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

Meet the Expert

In this issue we focus on Matt Smith, Biodiversity, and Natural Capital Manager. Matt joined JNCC in 2018 and currently works with colleagues from across JNCC to deliver our natural capital work programme

What prompted your interest in the natural environment?

From a young age I have been captivated by the natural world. My earliest memories are of my parents showing me plants in the garden of our home in south-west London. I left college at 18, with no idea what I wanted to do, and took a few years out to travel and work in the finance sector. I worked on sustainable food and rural community health programmes in India before studying Ecology and Biogeography at the University of Brighton and then a Masters in Conservation Science at Imperial College.

Why is the concept of natural capital so important for our natural environment?

It's nothing new, it's simply that people are becoming more aware of the damage that we are doing to our planet and the natural systems upon which we all rely. The concept has framed the natural world in a language that links to society, and that politicians and decision-makers in the private sector can relate to.

The natural capital concept enables people and businesses to define what nature means to them. It cuts through the complexity that scientists battle to explain to the non-scientific community.

It's simply saying: 'Here is how nature is supporting you and your activities. These are the elements that are critical to you and you should do more to exclude, reduce, manage or reverse the impacts your activities are having on natural assets to sustain your activities in the long-term'.

This approach enables people to view the natural world in a systematic manner and shows how nature underpins the economy and societal well-being. It also helps to make the case for investment in ways to manage natural systems that are not included within traditional protected area networks. Society is realising that simply addressing impacts once they occur is not enough - it's about designing integrated strategies with the natural environment at their core.

Natural capital approaches will not replace traditional conservation management but will address the gaps in areas not considered to be key for biodiversity – the places where we grow our food and build our infrastructure.

Looking to the next ten years, how do you see the natural capital approach evolving?

My hope is that natural capital will be a significant catalyst in mainstreaming environmental considerations into all types of decision-making, across all sectors and groups in society. I envisage that environmental functions, processes and benefits will be better understood and integrated into different management schemes – from combatting the rise in mental health problems in society, to designing cities of the future that have nature interwoven into their fabric. At the heart of natural capital, is the biodiversity that everyone at JNCC is working to better understand and protect for future generations.

Ecosystems 2012. He C to

Why is natural capital relevant to the private sector?

It's proving to be a valuable method to identify and manage environmental risks. The approach is also unlocking new opportunities and forming the basis of new financial systems and markets. We live in a world that seems to be struggling with the problems of how to redesign the global economy, reduce the growing gap between rich and poor, reverse environmental degradation, design innovative ways to better manage our dwindling natural resources and adapt to a changing climate. Natural capital is a concept from which new ways of thinking can emerge.



Images: Top right - Matt Smith © Shutterstock Photography
Above - Matt (right), visits a banana plantation in Columbia. © Matt Smith/JNCC

What has been your most significant achievement working for JNCC?



I don't think I can solely claim any achievement. Everything we achieve is down to our dedicated team working together to drive change. It's great to see natural capital as a concept becoming more prominent alongside our traditional core business. This is a result of many of us working to demonstrate where it can add value to JNCC's work.

Tell us about a natural capital project that inspires you.

We're working on a project in Chile that's assessing how biodiversity underpins environmental functions and processes that are critical to wine production in the Colchagua Valley. One of the critical services is the maintenance and regulation of microorganism communities comprised of fungi. These are required in the fermentation process of high-value, biodynamic wines produced in the region. We've found that in areas that lack natural habitat, the natural balance of these microecosystems becomes disturbed and can affect crop health. This not only shows how important these natural systems are for crops but also the complexity and fragility of these systems.

The project is working to understand how earth observation data, ecosystem modelling, biodiversity conservation, sustainable agricultural practices and local knowledge can work together to develop an integrated approach to managing the valley's natural capital. It's helping us demonstrate why society needs to work with nature and mainstream it into all decision-making.



Matt Smith,
Biodiversity, Ecosystems & Natural
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The UK's 'Blue Belt' of

Our seas cover 70% of the surface of the planet and support a vast array of life. Marine ecosystems perform critical functions, playing a pivotal role in supporting global processes and delivering multiple services that benefit society. JNCC has contributed to the conservation and recovery of marine biodiversity by advising on the establishment of a network of MPAs across the UK. Our experts have provided scientific advice to UK Government on the designation of over [50 MPAs](#) situated fully or partly in UK offshore waters and continue to provide advice on the network.

The UK Governments have a shared vision for clean, healthy, safe, productive and biologically diverse oceans and seas

After decades of work across multiple organisations, approximately [24%](#) of UK waters are now designated as MPAs, with more set to be considered, aiming for a new goal to protect 30% of our seas. In combination with MPAs designated within its 15 Overseas Territories, the UK is one of the leading countries for coverage of [MPAs](#) within its national waters.

UK waters are home to many incredible habitats and species, many of which are of international and national importance, including vulnerable marine ecosystems such as underwater mountains called seamounts, cold-water coral reefs and deep-sea sponge aggregations.

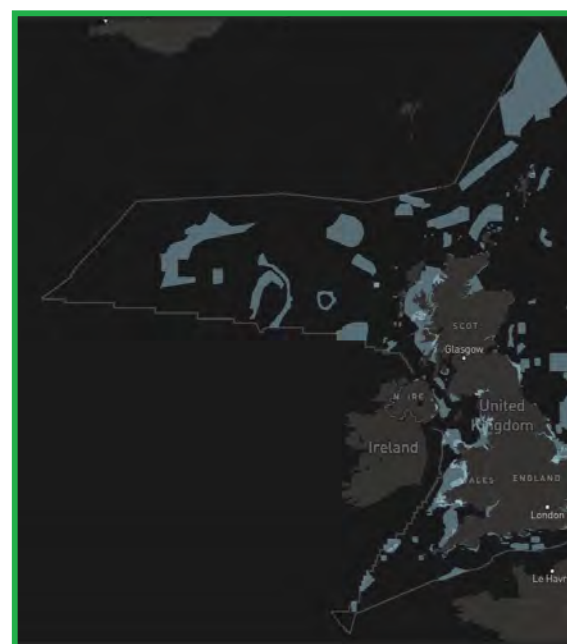
Topographic features such as reefs and sandbanks elevated from the seafloor provide a habitat for species, which in turn provide a food source for commercially important fish, seabirds and marine mammals.

Protecting habitats which play a key role in maintaining carbon and nitrogen cycles is necessary for maintaining healthy and productive ecosystems. Coastal habitats such as seagrass beds capture carbon from our atmosphere, providing a natural storage of greenhouse gases. Supporting healthy and resilient ecosystems will increase their ability to respond and adapt to other impacts such as those of global climate change.

[Once sites are designated](#) there is still much work to be done through the setting of clearly defined objectives, establishing the management that will need to be put in place, monitoring the status of features and assessing the degree to which objectives are being met. It is important to recognise that MPAs are just one tool and fit within wider marine planning and management processes, working together to ensure our seas are sustainably managed. JNCC continues to work to understand more about the function of our marine ecosystems and how human activities influence and impact them. This knowledge is crucial in understanding how we can manage impacts to minimise long-term damage and conserve marine biodiversity and vital life processes for future generations.



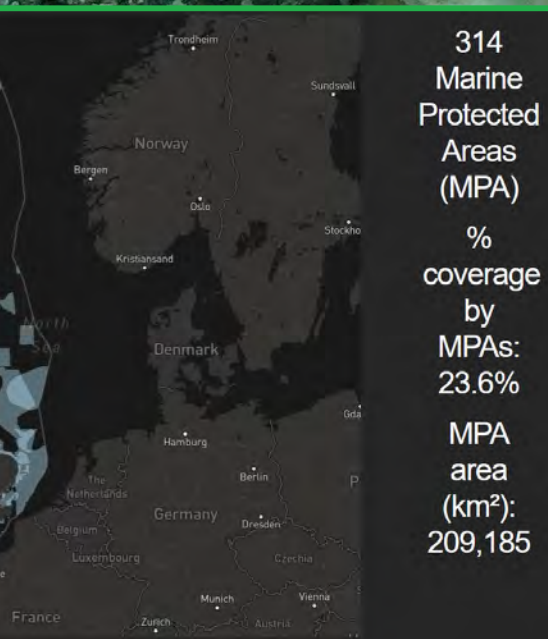
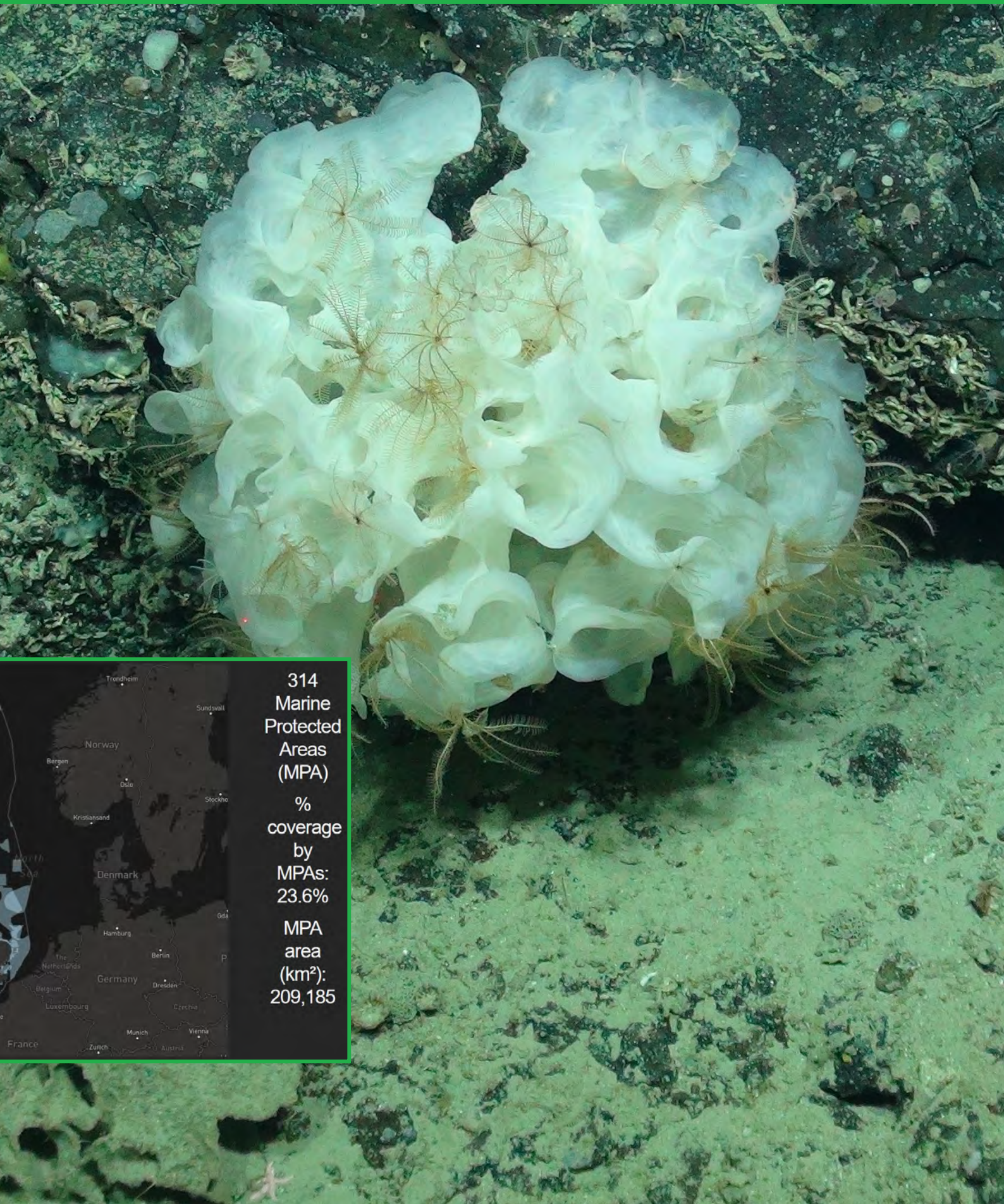
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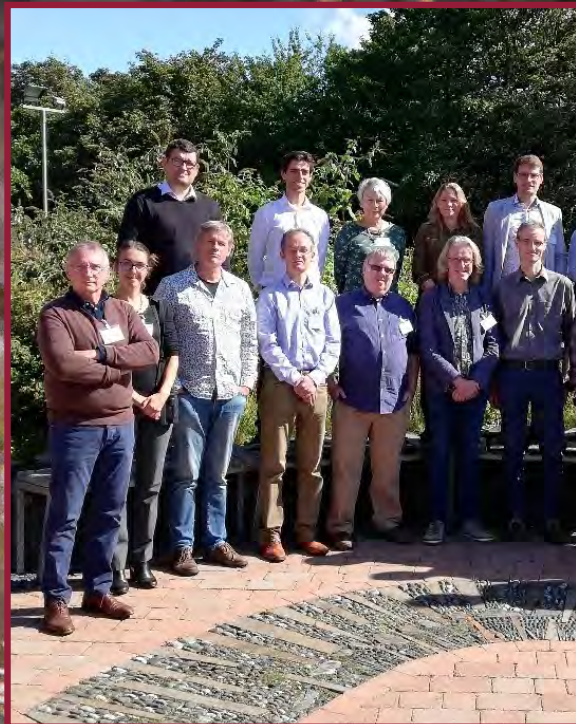
The UK MPA Network © JNCC

Image: A glass sponge covered in feather stars ©
Courtesy of the NERC funded Deep Links Project
- Plymouth University, Oxford University, JNCC,
BGS

Marine Protected Areas



Call of the curlew



The impact of JNCC's international leadership

Think of a major United Nations nature conservation meeting in the last three decades and it's likely JNCC staff were there supporting the UK delegation. Yet JNCC's role in providing advice to UK governments on the development and implementation of international nature conservation agreements is perhaps our least well-known activity.

Much of our international work is providing advice to government policy leads on the many proposed decisions and commitments made at international environment meetings. This is our contribution to the development of international nature conservation agreements. Using our expertise we assess whether a proposal will have the positive impact it seeks, and use our understanding of UK conservation to appraise the extent to which the UK is already meeting proposed international actions.

Our work doesn't stop at advising on the development of new global conservation actions. We also advise on, and at times carry out, their implementation, such as preparing the UK's reports to international conventions (e.g. our work on the [UK's Convention on Biological Diversity National Reporting](#)) or advising how UK governments can meet their obligations under international conservation law (e.g. our role as the UK's Scientific Authority on Animals for CITES). However, all this work is generally high-level and a step removed from on-the-ground conservation work – which is why we were delighted when JNCC was invited to get involved with an international working group that aimed to turn international ambition into real world action.

The curlew is the UK's most pressing bird conservation priority, as our population is one of the world's largest but also fastest declining. The African-Eurasian Waterbird Agreement ([AEWA](#)), a UN treaty, provides the framework for the conservation of species like the curlew and it is under this treaty that the [International Curlew Working Group](#) has been formed. Recognising the responsibility the UK has towards the curlew, in September Defra hosted the [first meeting](#) of the Group and, further recognising JNCC's ornithological expertise and international experience, we were asked to chair it.



Twelve nations were represented at the meeting, hosted at the Scottish Ornithological Club's Headquarters. After three days of, at times, hefty deliberations, and following some astute chairing (if we say so ourselves!), the participants emerged successful. A three-year workplan for the conservation of the Eurasian curlew across its breeding range was agreed.

Creating a workplan may not sound a great achievement, but it is only once all the potential actions for the conservation of a species are assessed and prioritised that effective conservation work can begin. The plan has the buy-in of many different nations, a further positive sign that the curlew can be saved across its range.

All in all this first meeting was a great contribution to the conservation of an emblematic species and a wonderful opportunity for JNCC to further demonstrate its international leadership. And importantly, the participants went away smiling!

International Curlew Working Group © JNCC



Danny Heptinstall,
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Making waves at

Marking the 10-year anniversary of the first [offshore marine protected areas](#) in the UK, JNCC hosted *Beyond the Coast* – a conference reflecting on progress and exploring conservation priorities for the UK offshore marine environment.

Our marine experts were joined at the University of Hull by attendees from various sectors from across the UK. The conference was opened by our Director of Marine Operational Advice, John Goold, with a welcome speech from the university's Vice Chancellor Professor, Susan Lea. The conference focused on three key themes:

- dealing with uncertainty in the environment offshore
- future opportunities
- working together to achieve a common goal.

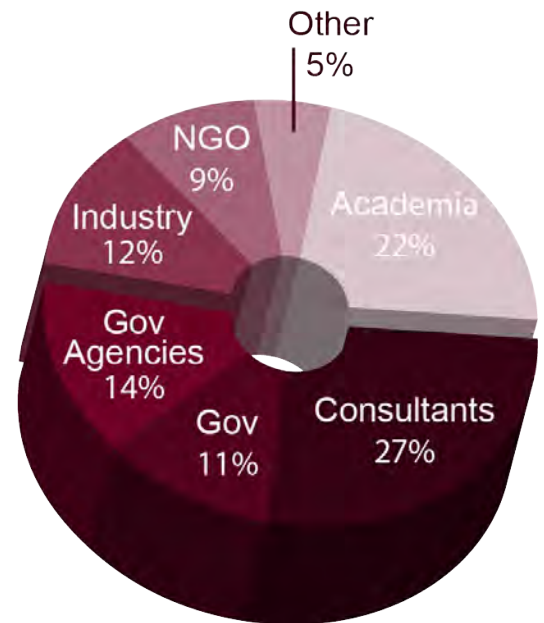
A series of breakout sessions encouraged cross-sectoral discussions on '*What are the priorities for offshore UK conservation?*', '*How can we best design offshore science*

in the future?' and '*How can we optimise offshore marine management?*'

A key message from these discussions was the need for improved collaboration and a more coordinated approach across different sectors and stakeholders. Greater join-up would help to identify knowledge gaps and overlaps in evidence, especially within a rapidly evolving political landscape.

Our continued success and future improvement in management of the UK marine environment will require strong collaborative effort to achieve our ambition of [clean, healthy, safe, productive and biologically diverse oceans and seas](#) while supporting the UK's economy.

Better communication, education and engagement with the public and businesses is also needed to provide clear information on how impacts on the marine environment can be reduced. The UK is a world leader in many aspects of marine environmental management and



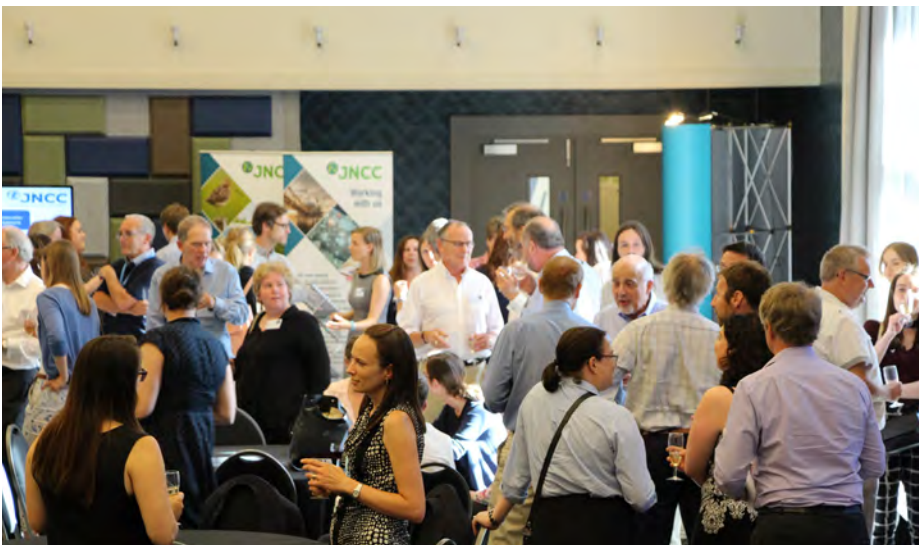
there are important opportunities to advance and improve our approaches, including how technology, innovation and data sharing are deployed.

The need to prioritise the understanding of natural capital for the offshore marine environment was also highlighted. These approaches help us to evaluate the trade-offs that should be considered in effective decision-making. Management activities beyond marine protected areas must also be considered to achieve effective conservation and improvement of the health of the UK's offshore marine environment, especially for highly mobile species.

Beyond the Coast generated much food for thought and was considered a success. We're currently working with a variety of attendees to produce a suite of scientific articles.



Eirian Kettle & Louisa Jones,
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Attendees at Beyond the Coast © JNCC

Beyond the Coast



The UK is a world leader in many aspects of marine environmental management and there are many opportunities to advance and improve our approaches, such as developing how technology, innovation and data sharing are deployed and increasing collaboration across stakeholders

Protecting the North-East Atlantic

The marine environment resource of the North-East Atlantic is protected by the Oslo-Paris Convention ([OSPAR](#)). Through the Convention the 15 countries that border the North-East Atlantic and the EU work together and JNCC plays an active role.

In the autumn, our marine experts attended two of the annual OSPAR meetings. The first was a meeting in Paris of the group that coordinates the protection and conservation of species and habitats that are on the OSPAR threatened and/or declining list. Here, we discussed 2019 reporting where countries will give updates on how they are managing the protection of the array of listed marine life. The UK has some of the most biologically diverse habitats and species in Europe and we will be reporting on most of the list – from basking sharks to seahorses and from coral gardens to cod.

The group also focused on the 2023 Quality Status Report (QSR), where countries will review the status of biodiversity and human pressures. JNCC has shared expertise, along with partners in Sweden, France and Germany, to develop guidance on how countries should complete their species and habitat assessments. The QSR follows on from the 2017 OSPAR Intermediate Assessment which JNCC helped to produce.

JNCC plays an active role in providing high quality evidence and advice to Government to support OSPAR commitments and forms part of the delegation that represents the UK at the various meetings. This work contributes to JNCC's strategy to achieve beneficial environmental outcomes for the UK through international leadership

JNCC gave updates on the OSPAR habitat database, an essential tool used by the UK and OSPAR partners which we have developed and are now working to advance.

Marine protected areas (MPAs) are set up to protect listed habitats and species and were the focus of the second meeting in Marstrand, Sweden. OSPAR is working to establish an ecologically coherent and well-managed network of MPAs. JNCC leads evidence-based processes to identify MPAs and, to date, the UK has nominated 283 sites as a contribution to the OSPAR network, with a further 16 proposed this year.



OSPAR MPA meeting participants © OSPAR

Our experts presented key findings from studies of how well managed the entire OSPAR network is, which will be reported as part of the OSPAR 2018 MPA status report. The meeting also focused on the expansion of the MPA network in areas that are outside the jurisdiction of the contracting parties. An MPA covering tens of thousands of square kilometres has been proposed in the high seas as an important seabird foraging area.



Lauren Molloy,
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Safeguarding marine biodiversity

Our oceans and seas provide a wealth of natural resources which support a range of human activities – both recreational and commercial. Yet, despite global conservation efforts, many marine environments are in a declining condition resulting from the impact of these actions. To help mitigate these impacts and to safeguard marine biodiversity for future generations, we've launched a new version of our Pressures-Activity Database ([PAD](#)), covering both inshore and offshore UK waters.



Sail boat © Pixabay

Our evidence-based tool helps users to explore and understand the relationship between activities and the pressures they may cause. Understanding how pressures influence and potentially impact ecosystems is vital for developing effective mitigation methods – sustainably harmonising natural and human environments.

The PAD tool provides an indication of the risk that pressures may pose to the environment under normal conditions. Designed to complement existing management tools – Natural England's Designated Sites System and Marine Scotland/Scottish Natural Heritage's Feature Activity Sensor Tool – the PAD has maintained much of its original evidence base. This improved version details links between 112 marine-based activities – from laying power cables to aerial military activity – and 39 associated pressures. Twelve new activities have also been included along with all activity-pressure links in Natural England's Designated Sites System.

One of the main applications for the new PAD is to support advice on operations for UK offshore Marine Protected Areas (MPAs). Developers and regulators can identify potential adverse impacts that activities may have on protected features. The PAD can also support non-MPA specific projects by providing evidence for applications such as marine status assessments, the development of biodiversity indicators for the Marine Strategy Framework Directive and reporting on UK conservation policy targets.



Liam Matear,
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Dog walker at the beach © Pixabay

Monitoring wildlife – a partnership approach

Building on JNCC's long-standing partnerships with UK experts in biodiversity monitoring and policy, we hosted our annual Terrestrial Evidence Partnership of Partnerships (TEPoP) conference in October. The one-day conference brought together partners involved in running and using the results from JNCC co-funded surveillance schemes. The experts gathered to discuss issues and share ideas around topical monitoring issues. Workshops, throughout the day, explored themes such as working with volunteers and making better use of Earth Observation data.

Partnership working is an area that we greatly value at JNCC and consequently an area in which we hold considerable expertise and experience. The crucial role of partnership work at JNCC is perhaps no better illustrated than in the field of biodiversity monitoring. We work closely with a range of non-governmental organisations and research organisations to run schemes that monitor a wide variety of wildlife. In turn these schemes are reliant on a vast and invaluable network of volunteer citizen scientists who record birds, walk transects, mark out vegetation plots, embrace acoustic technologies and get to grips with online data entry. The resulting information on birds, butterflies, bats, and plants, as well as other groups, forms an evidence base that is highly valued by UK and country governments, their agencies and other conservation bodies. This evidence helps us understand how species are faring and the issues that impact on them. It allows us to influence the creation of strategies and policies that impact the environment and to report on the level of success of such commitments, as well as international directives. Of course, there are always opportunities for improvements, and the better evidence we have on biodiversity, the more useful it will be.

These schemes are reliant on a vast and invaluable network of volunteer citizen scientists who spot birds, walk transects, mark out vegetation plots, embrace acoustic technologies and get to grips with online data entry



In addition to running partnership surveillance schemes, JNCC is working with the British Trust for Ornithology (BTO) and the Centre for Ecology and Hydrology (CEH) to develop guidance to help monitoring schemes continue to improve. Cross-cutting analyses will help us to better understand the data coming out of schemes and how it can be formatted to develop outputs such as biodiversity indicators. Discussions at the TEPoP conference illustrated just how much can be gained through making small changes when everyone is committed to working together. The project will now produce guidance on data standards and formats to share across the schemes involved.

Feedback from the conference showed that participants valued the opportunity to get together to discuss the common issues they face, find out about new ideas, and consider how to make the outputs from surveillance schemes even more useful. For more information on the Terrestrial Evidence Partnership of Partnerships, please see: jncc.defra.gov.uk/page-7490



Julie Day,
Senior Biodiversity Evidence Specialist,
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Engaging business for better biodiversity outcomes

In 2010, the Conference of the Parties to the Convention on Biological Diversity (CBD) adopted a Strategic Plan for Biodiversity 2011-2020, including the Aichi Biodiversity Targets. Although progress has been made in implementing the plan, society is not on track to fully meet these targets. In 2020, governments are expected to adopt a new global biodiversity framework to update the current Strategic Plan and its targets. This framework will be developed through a broad consultative process involving governments and other stakeholders.

In recognition of the importance of engaging the private sector in these discussions, JNCC experts along with BP plc, the Department for Environment and Rural Affairs (Defra), Fauna and Flora International, the UN Environment Programme's World Conservation Monitoring Centre (UNEP-WCMC) and the University of Oxford organised a one-day workshop. Here, 25 representatives from UK-based businesses along with 25 representatives of UK Government, non-governmental



To catalyse future private sector uptake, businesses emphasised that targets need to be simple, measurable and with a clear business benefit

organisations and academia discussed the challenges faced by the private sector in supporting the existing framework and targets. The workshop explored how best to increase engagement with, and input from, business as the post-2020 framework is developed.

Lively discussions were kicked-off with an exercise which established that while awareness amongst businesses of the Aichi targets is low, businesses are nonetheless undertaking actions on biodiversity that align with these targets. A barrier to business engagement is the perception that the targets - having been 'written by Governments for Governments' - are not directly relevant to business.

Outputs from the workshop will not only inform UK Government input to the development of the post-2020 biodiversity framework but provide the CBD Secretariat and Parties with business' views on the current biodiversity framework and the importance of engaging the private sector in developing the new framework.

The key messages from the workshop were presented at a UK business and biodiversity side event at the 14th Conference Of the Parties to the CBD in November. Drawing on experience of different initiatives around the world, the event explored how to better engage and mobilise businesses across sectors in support of biodiversity conservation.



Lucy Beagley,
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Paul Rose, JNCC Director, presents at the one-day workshop © JNCC

e noise in UK waters

Underwater noise from human activities can affect marine organisms from fish to marine mammals in a variety of ways, from masking sounds used to communicate and find food, to physical injury and even death. Understanding when and where noisy activities take place will help define a baseline level for impulsive noise in UK waters and will inform research on the impacts of noise, particularly on vulnerable species

JNCC has developed, hosts and manages the UK Marine Noise Registry ([MNR](#)) on behalf of UK Government and devolved administrations. This [online portal](#) and database compiles data on loud, low to medium frequency impulsive noise in UK seas. It includes data from 2015 onwards on when and where impulsive noise was produced due to activities such as geophysical surveys, pile-driving, military sonar and underwater explosions.

The data are available under the Open Government Licence and are enhanced by comprehensive [outputs](#) published yearly. Our staff have been involved since the project's inception, working closely with the regulators of activities to ensure the data are accurate and as comprehensive as possible. Nevertheless, there are still caveats and limitations which need to be considered when drawing conclusions from the data and products.



Minke whale © James West/Creative Commons License

Block Day Map (January - December 2016)

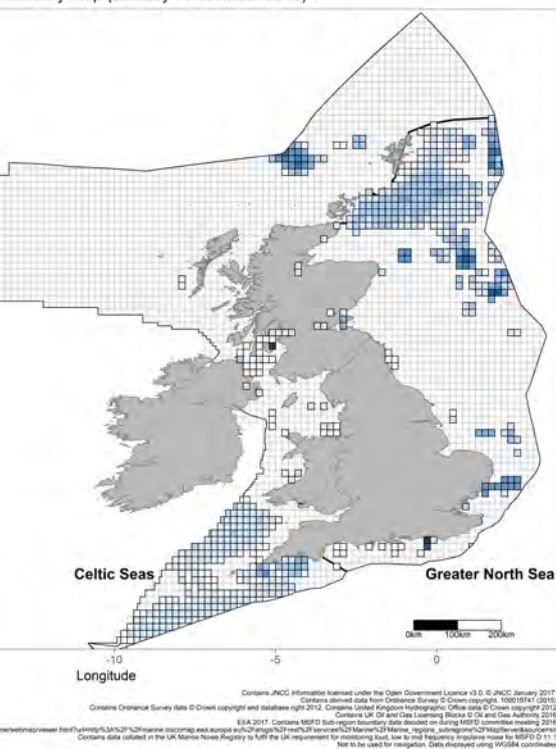


Image: Offshore windfarm installation © iStock

The MNR allows us to look at how prevalent noise is. It also helps us to spot patterns – such as particularly noisy areas and seasonal differences. The data are mapped using Oil and Gas Licensing Blocks as the spatial unit. Between 2015 and 2017, geophysical surveys, such as those used for oil and gas exploration, accounted for the greatest proportion of noisy days and are the most widespread activity. However, except for localised hotspots (up to 101 days of noise in one block in 2017), the great majority of blocks have less than five days' noise.

The characterisation and understanding of this marine pressure, combined with data on the distribution of species vulnerable to noise gives us an insight into the potential effects of noise on ecosystems. This then helps us to manage noise, ensuring it remains at levels that do not adversely affect the marine environment.

Aspirations for future work include making the data in the MNR more readily accessible through an interactive visualising online tool.



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Shared solutions for

The Maritime and Coastguard Agency's [National Contingency Plan \(NCP\)](#) details the UK Government response to marine pollution from shipping and offshore installations. It sets out arrangements for dealing with pollution, or the threat of pollution, from ships and offshore installations. Under this framework, JNCC is a core member of the Environment Group (EG) as the statutory nature conservation body for the offshore area (beyond 12 nautical miles). Our role during an incident is to provide nature conservation information and advice in relation to immediate environmental offshore sensitivities.

When an incident has occurred, our experts work closely with members of the EG to discuss response plans and provide recommendations and advice to decision-makers. We provide seabird, marine mammal, benthic species, habitat and marine protected areas advice and can assist in environmental survey design. If the incident spreads into the inshore area, we would support the relevant inshore nature conservation agency and the EG as necessary.

The use of dispersants during oil spills has gathered much press interest and controversy over the years. Consideration of dispersants as a response option is time-critical as there is a brief window before hydrocarbons become [naturally weathered](#), rendering dispersants useless. Recent pollution exercises and incidents have highlighted some uncertainty around the use, fate and effects of chemical dispersants. To address this, JNCC organised a workshop bringing together key decision-makers and advisers from UK Government involved in pollution response.

The workshop, in partnership with Oil Spill Response Limited ([OSRL](#)) and the global oil and gas industry association for environmental and social issues [IPIECA](#), brought together colleagues from 18 agencies and organisations. Expert sessions – covering response options, dispersants use, decision-making and practical considerations, licensing for use, effectiveness monitoring and considerations for environmental impact assessment – generated constructive discussions that will shape future action and best practice. This opportunity to bring together responding agencies to share knowledge and build relationships will prove invaluable in future marine pollution responses.

Key outcomes and actions from the workshop were summarised in a report published in December. Our thanks go to OSRL and IPIECA who worked with our Marine Management team to make the workshop a success.



Bethany Graves.
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or marine pollution



Survey #1218S

Our marine scientists joined colleagues from Marine Scotland Science on a 26-day survey in Scottish offshore waters aboard the research vessel MRV Scotia. The survey team visited the Faroe Shetland Sponge Belt Nature Conservation Marine Protected Area (NCMPA), Whyville Thomson Ridge Special Area of Conservation and Rosemary Bank Seamount NCMPA. The purpose of the survey was to add to our monitoring efforts and understand more about these important sites and provide sound management advice.



Post 1

And we're off! The largest of the three sites we'll be visiting is the [Faroe Shetland Sponge Belt](#) NCMPA. We'll be using a variety of sampling equipment, with video-tows and drop cameras to collect live footage and high-resolution images of the seabed and its inhabitants. A Hamon grab will take samples of the seabed for particle size analysis of the substratum and identification of the animals living within the sediment.



Post 2

We're on the hunt for sponges at Faroe Shetland Sponge Belt NCMPA. This site has multiple protected features including deep-sea sponge aggregations and the bivalve, Ocean quahog (*Arctica islandica*). We lack information on where deep-sea sponge aggregations occur within the site. To understand how the habitat is distributed we've had three nights' towing the video chariot at different depths and three days' sampling the fish and benthic fauna. We've seen lots of sponges, bizarre invertebrates and fish.

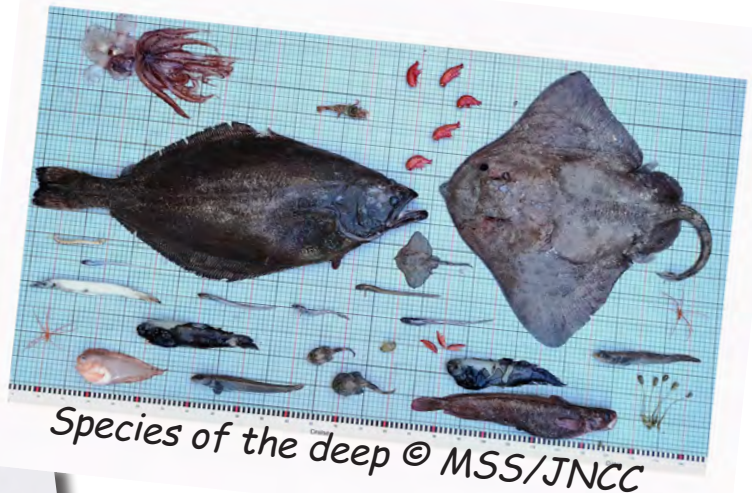
Post 3

We're now onto our depth stratified trawl transect that will take us from the warm NE Atlantic waters of Rockall Basin, up and over the [Whyville Thomson Ridge](#) SAC and then down into the Arctic-influenced water of the Faroe-Bank Channel. We've taken a line of trawls at depths of approximately 1800m, 1600m and 1200m working north. This leg of the survey has made the news and we've been featured on [BBC Scotland](#).



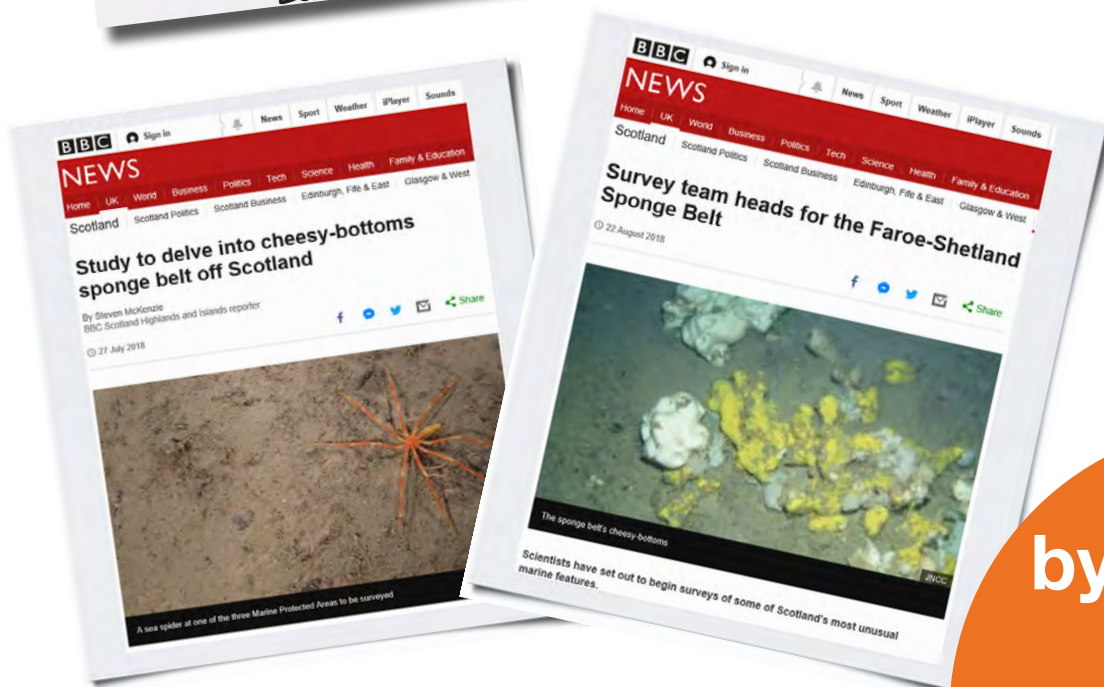
Post 4

We've returned to Wyville Ridge to continue our sampling following a welcome half-landing at Ullapool. We've seen a plethora of mobile species from fish, captured by the underwater camera at the seabed, to marine mammals at the surface. Fish species observed include rays, chimaeras and ling. During one camera tow we were especially excited to spot two Arctic skates enjoying a nice seabed walk!



Post 5

Back to land. We've documented a huge variety of marine life and habitats across these sites – from the deep-sea sponges of [Rosemary Bank Seamount](#) and Faroe Shetland Sponge Belt MPAs to corals and iceberg ploughmark rocky habitats at Wyville Thomson Ridge SAC. The diversity has been staggering! The data we have collected will form a crucial part of a dataset that will be used to monitor how these diverse habitats change over time.



Catch up on our latest offshore survey blogs at <http://jnccoffshoresurvey.blogspot.com/>



Jess Taylor,
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#1218S
by numbers

*26 days

*3,000km

*3,800 photos

*47 grab samples

*113 hours of

video footage

Valuing, conserving and restoring internationally important wetlands through global action

In October 2018, the [13th triennial Conference of the Parties \(CoP13\) to the Ramsar Convention](#) on Wetlands was hosted by the United Arab Emirates in Dubai, where 143 Contracting Parties and others worked to establish international approaches that will further value, conserve and restore vitally important wetlands. The theme of “*Wetlands for a Sustainable Urban Future*” set the context for the meeting and global action on ‘sustainable urbanisation, climate change and wetlands in urban and peri-urban wetlands’ was agreed.

The UK government was represented by Defra and JNCC, who worked proactively to achieve strong outcomes for the future governance and international role of the Convention. Input to the resolutions adopted supported UK commitments to meet local-to-global biodiversity targets associated with wetlands, including for wetland species and habitat protection. Implementation of many resolutions will support UN Sustainable Development Goals, through food provision, improved water quality, protection from natural disasters, and increasing resilience to climate change.

Wise wetland use maintains and improves the services these vital natural ecosystems provide both to biodiversity and to people

The global area of wetlands is declining fast, with 35% lost since 1970 - a rate three times faster than that of forests

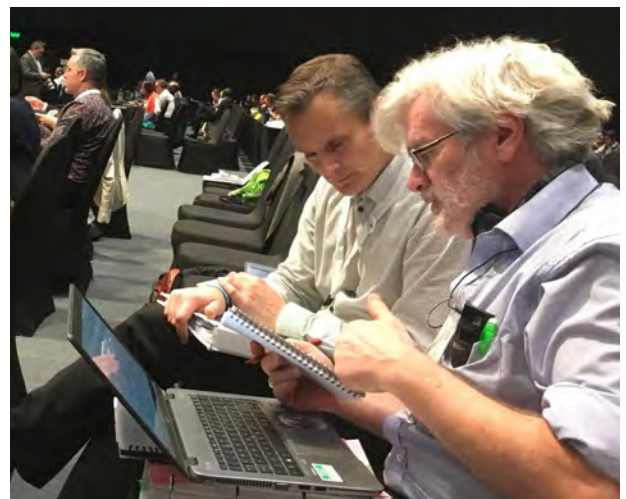
The launch of the Convention’s ‘[Global Wetland Outlook](#)’ provides an evidence-based synthesis on the status and trends of wetlands and their biodiversity internationally. It highlights the urgent need for all to realise their value, and to conserve and restore them.

The meeting therefore provided a critical opportunity for the international community to take unified action to address this desperate situation by developing common commitments through practical action and policy implementation.

The UK was elected to the Ramsar Convention’s Standing Committee for the next three years, to oversee the work of the Convention’s Secretariat and to work alongside colleagues from Sweden, Armenia and Azerbaijan to coordinate the European Region’s input to intersessional work.



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Stephen Grady and David Stroud at CoP13 © JNCC

‘People need birds and birds need people to do the right things’



David Stroud receives his AEWA Honorary Patron award
© Danny Heptinstall/JNCC

At JNCC we have always known that David Stroud MBE, our senior ornithologist, is one of our greatest assets. His expert knowledge and the value of his work on national and international treaties are immeasurable.

Therefore, we were delighted that at this year's African-Eurasian Migratory Waterbirds Agreement (AEWA) Meeting of Parties in South Africa, David was made an Honorary Patron, an award only ever bestowed once before, to Gerard Boere, the Father of AEWA.

This is not the first award David has received from AEWA. Back in 2005 he was awarded the very first AEWA Waterbird Conservation Award which recognised

his significant contribution towards long-term conservation and sustainable use of waterbirds in the African-Eurasian region. David's relationship with AEWA spans most of his working life. He was instrumental in the early stages of AEWA in the 1980s, has been a member of the UK delegation since 1999 and played key roles ever since. He has actively participated in the work of the AEWA Technical Committee, chaired many of the working groups using his expert scientific knowledge to contribute widely, in particular to the topics of offshore wind farms, lead shot poisoning and wildlife disease.

In his acceptance speech David warmly thanked the organisation and delegates in Durban, many of whom have become friends over the years. He stressed the vital roles that AEWA fulfils, most importantly the restoration of threatened waterbird populations. In any spare time he has, David has focused his scientific interest in the Greenland White-fronted Goose, spending summer holidays 'off grid' in Greenland and publishing many articles and papers.

In fact, this has been a year of awards for David. In October, the British Trust for Ornithology (BTO) presented him with The Marsh Award for International Ornithology which is awarded to an individual scientist whose work on the international stage has had significant influence on British ornithology.

‘David is a remarkable individual whose enthusiasm and expertise are apparent to anyone who has met him. I'm delighted that his contribution to international bird conservation has been recognised by AEWA.’ ~
Marcus Yeo,
JNCC's CEO



Greenland white-fronted geese © Jimmy Edmonds/
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David Stroud,
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Business Development at JNCC

JNCC's Business Development team are working to identify opportunities – both within the UK and internationally – to diversify our income. Success will enable us to:

- **Maintain viability** – ensuring sufficient capacity and skills to continue to meet the needs of core government funders.
- **Strengthen key areas of work** – enhancing and expanding our current strengths and improving the overall resilience of JNCC.
- **Improve overall benefit to nature conservation** – some of our functions and skills, within a UK context, are widely applicable within a global market and could provide benefits to nature conservation in other countries.
- **Increase engagement with industry** – there is growing realisation of the importance of getting industry more involved in managing the natural environment and supporting investment from this sector would be a natural progression for JNCC.

Over the coming months we will explore our core capabilities:

Valuing biodiversity -
mapping and assessing
the natural environment
and the benefits it
provides

Evaluating options -
understanding how
human activities are
affecting the natural
environment

Providing advice -
applying evidence to
provide advice on policy
or operational activities

Monitoring change -
monitoring how the natural
environment is changing to
inform interventions and
making data available for use
at multiple scales to meet UK,
country and local priorities

We currently work with a wide range of associates, contractors, other private sector businesses, funders/donors and academic partners both nationally and internationally to deliver projects. We are looking to explore new opportunities that will expand our customer base and further broaden our work areas. We want to extend our reach, building relationships and knowledge-sharing with partners in countries that could benefit from our scientific and technical expertise.

This brief snapshot summarises the exciting and highly varied work undertaken by our dedicated staff with a diverse range of collaborators. If you are interested in working alongside us, towards a sustainable and biodiverse future, please get in touch with our Business Development professionals: JNCCBusinessDevelopment@jncc.gov.uk



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Valuing the marine environment in Northern Ireland

The natural capital approach is a way of re-framing how we value, use and protect our marine environment. This was one of the key topics at *Valuing the Marine Environment in Northern Ireland* – part of Northern Ireland Environment Week. Henk van Rein and Paul Rose, representing JNCC, presented at the conference on our emerging work in this area.

JNCC is exploring how natural resources such as habitats and species may be viewed as assets that provide ecosystem services to the economy, society and individuals. Our experts are working on projects that will help us account for natural capital assets and model their stocks and flows, so that we can map and ultimately monitor them.



The conference was hosted by Northern Ireland Environment Link, a networking and forum body for organisations interested in the natural and built environment of Northern Ireland. Speakers came from the World Wild Fund for Nature (WWF), the Institute of Estuarine and Coastal Sciences at the University of Hull, the Devon Marine Pioneer Project and the New Economics Foundation. The presentations and discussions gave an insight into the policy, economic and scientific potential of the natural capital approach and how it could be applied in a Northern Ireland marine and coastal context.



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Horizon Scan – identifying the big issues to impact the environment

Diana Mortimer, our Biodiversity and Ecosystems Services Team Leader, was one of the experts that contributed to the 2018 Horizon Scan of Emerging Issues for Global Conservation and Biological Diversity.



This annual exercise – a Cambridge Conservation Initiative collaborative activity – identifies emerging issues that could affect global biological diversity, natural capital and ecosystem services, and conservation efforts.

This ninth horizon scan highlighted issues spanning a wide range of fields and included thiamine deficiency in wild animals, the geographic expansion of chronic wasting disease, genetic control of invasive mammal populations and the effect of culturomics on conservation science, policy and action.

The 2018 Horizon Scan of Emerging Issues for Global Conservation and Biological Diversity is available at: [https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347\(17\)30289-6](https://www.cell.com/trends/ecology-evolution/fulltext/S0169-5347(17)30289-6)



Diana Mortimer,
Biodiversity & Ecosystems Services Co-Team Leader,
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Conservation *Conversation*

This issue we focus on JNCC's independent Committee member Charles Banner. Charles is a barrister at Landmark Chambers and specialises in environment and planning law, and government and regulation. In 2016 he became a trustee and council member of the UK Environmental Law Association which aims to make the law work for a better environment and to improve the understanding and awareness of environmental law



Q Species that inspired you as a child?

All species of shark. Like most boys growing up in the 1980s, I first got to know about sharks through 'Jaws' and similar sensationalism, but when I started to learn more about them I became fascinated by their variety, complexity, migrations, and in some cases their apparent level of intelligence, as well as concerned about the many perils they face at the hands of mankind. I still am.

Q What concerns you most about the natural world?

The pollution of our seas. I fear we are only starting to see the true extent of the problems caused by, for example, the use (or abuse?) of plastics.

Q What do you do away from the office?

I enjoy travelling with my family, both within the UK and overseas, as well as long distance running, collecting and viewing art, and rock music (see above re. growing up in the 1980s!).

Q Where is your favourite place?

California. It has just about everything: wonderful landscape and natural environments, interesting and diverse people, exciting cities (and in San Francisco exceptional architecture) as well as a great climate.

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

Ben Fogle, Brian May, David Hockney and my wife Tetyana.

Q Desert Island Disc?

These Days by Bon Jovi or *The Miracle* by Queen. The latter would probably be more appropriate on a desert island!

Q Who is your human hero in the natural world?

As a non-scientist I am bound to point towards someone in the public eye who has been responsible for effectively communicating the natural world and the issues it faces to the general public, inspiring non-specialists to become interested in and promote the natural environment. There are many who fit that bill. I am a big fan of the very engaging Ben Fogle, though perhaps more for his adventures such as in Antarctica than purely for his work in this field. Overall, it is hard to look beyond the legendary Sir David Attenborough who continues to inspire millions in his 90s.

Q Place you'd most like to visit?

Yellowstone National Park in winter. Tetyana and I spent a wonderful week there a couple of summers ago, fulfilling a lifelong ambition, seeing a number of the wolves whose reintroduction we had read about as well as many other interesting species including grizzly bears. The landscape was as incredible as the wildlife. I would love to experience the very different perspective of winter-time Yellowstone.

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

To make a meaningful contribution towards JNCC being in a stronger position than when I started, in terms of finance and resources, quality of output, external reputation and internal morale.

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

Polar Explorer, inspired by Captain Scott whose diaries are one of the most compelling and inspiring things I have read. I would hope to have a better fate than him but very much doubt I would!

