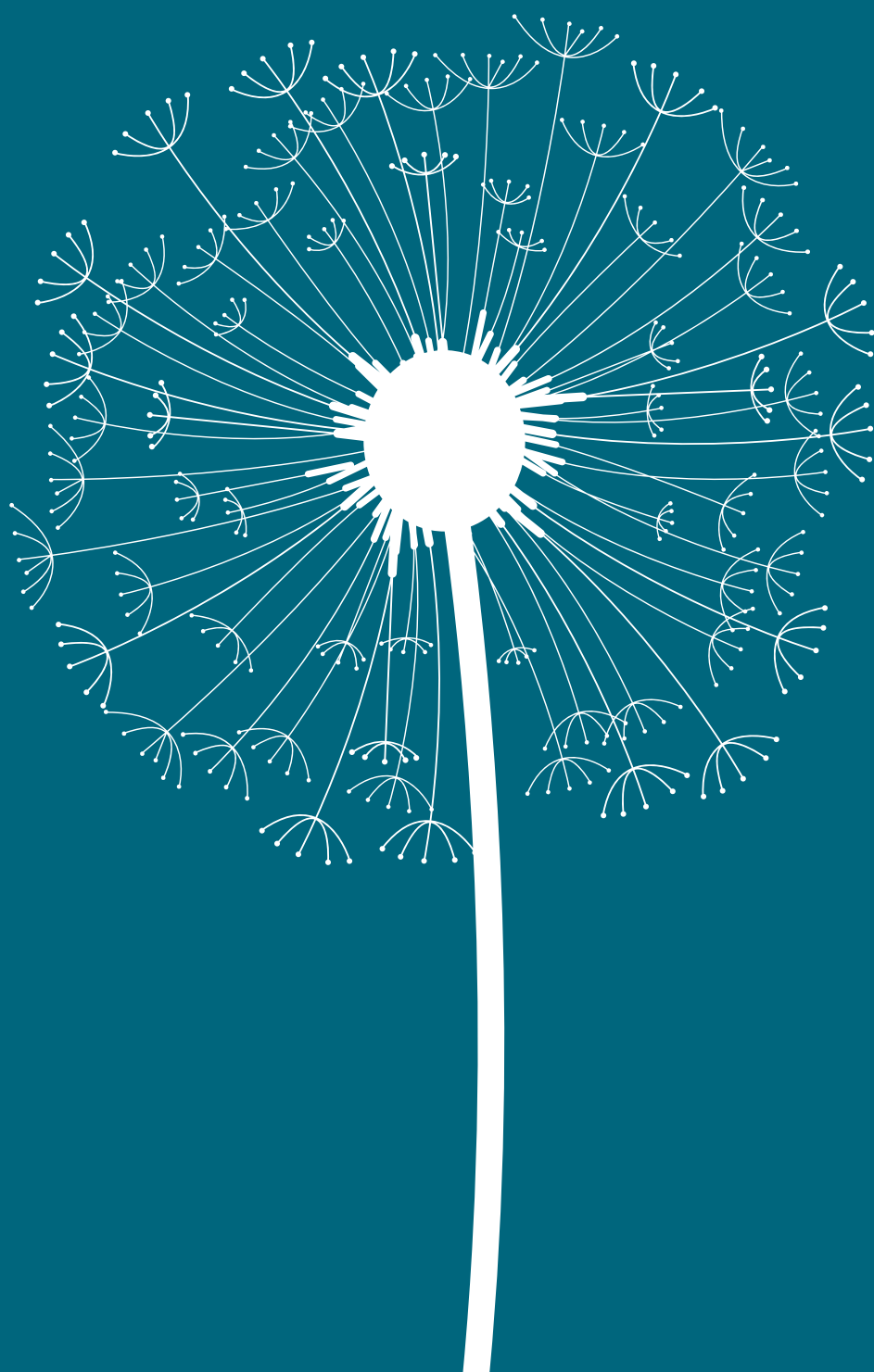
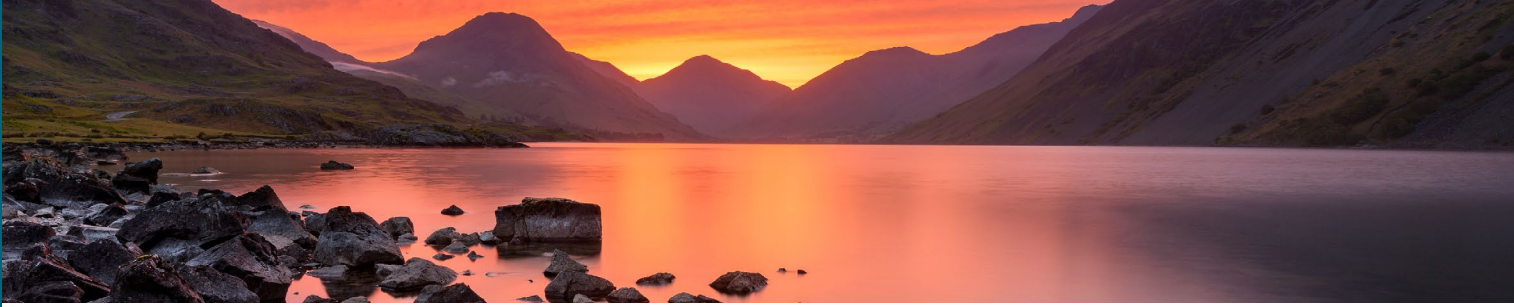


Areas of Research Interest

Building a shared evidence base for a
nature-positive future





Background

Areas of Research Interest (ARI) are published documents which detail some of the main research questions facing governmental bodies in the UK. The [Government Office for Science](#) (GOS) supports the creation and use of ARI documents for ministerial departments, non-ministerial departments, devolved governments, and Arm's Length Bodies (ALBs) such as JNCC.

This document details JNCC's current list of Areas of Research Interest, which have also been uploaded to the [ARI Database](#).

How should this list of ARI be used?

By publishing our ARI, we aim to make it easier for current and future partners to understand just **some** of our evidence needs for the next five years. We hope that by publishing our ARI we can help align research with genuine policy questions and broaden the range of organisations we work with.

We believe our ARI will be of primary interest to government bodies, researchers, and academic institutions. They will also be relevant to environmental non-government organisations, industry stakeholders, and funding bodies.

Most of our current ARIs have a focus on UK-level research questions in line with our role in helping to understand and advise on impacts on nature that are best tackled at a UK-scale. Recognising the particular importance of the country nature conservation bodies (CNCBs) (the Council for Nature Conservation and the Countryside (Northern Ireland), Natural England, Natural Resources Wales and NatureScot) in this regard, we will seek to collaborate to identify opportunities to jointly deliver our ARI and those of the CNCBs.

How was this list of ARI developed?

Our initial ARI were co-developed with a broad group of academics from the [CASCADE](#) network, along with Defra and Natural England. We would like to express our sincere gratitude to all those involved, including to those who participated in a joint JNCC-CASCADE symposium in January 2026. This collaborative approach ensures the ARI align with JNCC's priorities and real policy needs, while also addressing actual knowledge gaps and being of interest to the research community.

How will this list of ARI be updated?

This list of ARI is a living document and not an exhaustive list of all our research needs. We have purposefully kept the list relatively short to provide an indication of the types of work we do and some of the areas where we are keen to collaborate on in the medium-term. As knowledge develops and new challenges emerge, our research interests will evolve and our intention is to review this list on a regular basis.

If you have any questions or comments, please contact us via this [form](#)



Areas of Research Interest

1) Integrating novel monitoring technologies for biodiversity and ecosystem health



How can the UK and UK Overseas Territories use novel monitoring technologies to establish cost-effective, regular surveys for taxa and habitats in the marine and terrestrial environments, and effectively incorporate these new survey data into policy-relevant biodiversity and ecosystem health indicators?

Background:

Data on species and habitats are the foundation of nature policy but can be difficult and expensive to collect. This leads to biased and incomplete knowledge and a reliance on indicators that are focused on a small number of easily observable, largely terrestrial taxa. This risks policies being developed that fail to deliver genuine improvements to biodiversity overall or that miss groups of key importance to the provision of ecosystem services.

This work may include considering:

- Technical feasibility and cost of implementing and scaling-up novel, non-conventional monitoring technologies (e.g. remote sensing, acoustics, eDNA).
- Technical challenges of integrating outputs from these new approaches into existing national and international indicators.
- Whether new approaches can be developed that act as early warning systems (e.g. for identifying the spread of diseases or early signs of ecosystem collapse).

2) Improving predictive and foresight modelling of land and sea use, and environmental change



How can predictive and foresight modelling be improved to understand the likely future state of biodiversity and communicate future environmental scenarios to decision-makers and stakeholders?

Background:

A step-change is needed in how we predict likely changes to the use and state of our environment and how this is communicated. Current models often lack clear causal attribution, limiting policy relevance and enabling uncertainty to be exploited.

To support more robust decision-making, models are needed that can link the impacts of key pressures (e.g. climate change, pollution) and conservation and recovery activities to anticipated changes in land/sea use and biodiversity outcomes. Effective approaches of communicating the resulting future scenarios are needed to help decision-makers and stakeholders understand trade-offs and consequences of different actions.

3) Optimising the sustainability and resilience of different marine food systems



How can the UK make the best use of wild and farmed marine animal/plant resources to produce healthy food and increase the UK's food security in a manner that is sustainable, nature-positive, and climate-resilient?

Background:

There is a lack of straightforward comparisons of the full environmental, climate, health and food security costs and benefits of different systems of aquaculture, mariculture, and wild harvest, and how these marine food systems interact. Understanding the trade-offs and opportunities across systems can support better planning and help build a food system that is productive, resilient, and works with nature.

This work could include comparing environmental impacts (e.g. carbon emissions, resource use, water quality, disease, pollution, and effects on wild species) across the different systems, and identifying approaches to production and harvest that limit harm (e.g. improved aquaculture systems, more selective fishing methods, and better spatial planning).

4) Evaluating the impacts of agricultural policies and agricultural management regimes



How can robust, comparable evidence be generated to assess the impacts that different agricultural policies and agricultural management regimes have on soil health and wider biodiversity and be used to support effective, evidence-based decision-making?

Background:

Agriculture covers around [70% of UK land](#) and is undergoing rapid transformation driven by technological, climatic, and societal shifts (e.g. dietary change and synthetic foods). Choices on agricultural policy and management regimes can have a big impact on the UK's soil health and nature in general.

There is currently a lack of robust, comparable evidence from across different farming systems and geographies, and of land managed under different policies and management regimes. This work seeks to understand the causal links between specific policies/regimes and outcomes for nature to support decision-makers, farmers, land managers and other interested parties in designing, targeting, and adapting interventions that deliver measurable gains for nature alongside sustainable food production.

5) Identifying evidence needs for funding nature conservation and recovery through market-based approaches



What evidence is needed to determine the role that market-based approaches can play in funding nature conservation and recovery globally and to identify the socio-economic and political factors that will influence its contribution in practice?

Background:

Market-based approaches can enable private investment in nature (e.g. through creating credits that can be bought and sold) and are viewed by many as being crucial if countries are to achieve the [Global Biodiversity Framework](#) targets they agreed to meet by 2030.

However, there is a need to understand realistically what role these approaches can play in closing the [annual biodiversity finance gap of \\$700 billion](#) and what evidence is needed to inform policy design, regulation, and effective market implementation. This work could also identify key evidence gaps on how national and international socio-economic and political factors will influence the ability of market-based approaches to mobilise finance for nature.

6) Strengthening knowledge on the outcomes of conservation and recovery actions



How can the evidence base be strengthened to understand how conservation actions at different scales affect biodiversity and wider outcomes, to improve policy design, evaluation and adaptation, and how can outcome evaluation be made more cost-effective?

Background:

Many policy programmes invest in monitoring, but this is often limited in scope (focusing on a narrow set of biodiversity measures), duration (failing to capture longer-term responses), and breadth (wider outcomes frequently overlooked). Funding high-quality outcome measurements across all interventions is not cost-effective, nor is embedding extensive monitoring within every action undertaken.

There is a need to strengthen the evidence base on the outcomes of conservation and recovery actions to better inform policy design, support objective setting, understand trade-offs, and enable comparison between expected and actual outcomes. This work could involve:

- Identifying the strengths and weaknesses of the existing knowledge base used for the design of conservation and recovery actions.
- Building a framework, including: standard measurements of outcome, appropriate to the scale of the intervention, and cross-calibrated to national monitoring scales; sampling design that policy programmes, research and others can all contribute to.
- Understanding long-term outcomes of the conservation and recovery action types being deployed now.
- Designing practical low-cost outcome evaluation monitoring techniques, including drawing on potentially low-cost opportunities provided through data and sensor innovation.

JNCC is the public body that advises the UK Government and devolved governments 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.

This report should be cited as: JNCC. 2026. *Areas of Research Interest*. JNCC, Peterborough.

-  jncc.gov.uk
-  twitter.com/JNCC_UK
-  linkedin.com/company/jncc
-  facebook.com/JNCCUK
-  youtube.com/JNCC_UKvideo
-  bsky.app/profile/jncc.bsky.social