

Natural England Framework for Science, Research and Evidence

Integrated Science to support Integrated Solutions

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Project details

A summary of the findings covered by this report, as well as Natural England's views on this research, can be found within Natural England Research Information Note RIN011: Natural England Framework for Science, Research and Evidence. *Integrated Science to support Integrated Solutions*

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1 Introduction

- 1.1 This document sets out a framework for science in Natural England, which will provide the evidence necessary to support the delivery of our Strategic Direction.
- 1.2 Decisions made by land and sea managers and policy makers that shape the environment at national, regional and local level are not made in isolation. They take into account a wide range of social and economic drivers as well as environmental considerations in coming to an integrated conclusion. In this document, we use the word 'science' to encompass all relevant environmental, social and economic information.
- 1.3 The provision of a coherent and integrated science, research and evidence service is a vital part of our work to become a **Distinctive Public Body** that offers value for money. Making the right decision on the basis of evidence should give the desired (strategy, policy, advocacy or delivery) outcome efficiently and effectively. Not having or using the appropriate evidence is ineffective and inefficient in the long term and therefore poor use of public money. Science and evidence is not a separate function but an integral part of all of Natural England's work.
- 1.4 To provide an efficient and effective service the Evidence Team will encourage integration in a number of ways:
 - the science programme must deliver a service to all parts of the business supply chain, from strategy to delivery, and will be driven by this imperative;
 - the science function will be visible and seen as part of the work of the whole organisation;
 - the science team will assess the adequacy of existing information before proposing new research;
 - science projects will always consider the need for interdisciplinary science;
 - the science function will explicitly integrate with that of our key partners; and
 - the science team will be engaged with the wider science community.
- 1.5 Natural England was created to provide an integrated service to government, regions, the public and individuals. Our Science, Research and Evidence work will deliver **Integrated science to support integrated solutions**.

2 Our Vision

2.1 Natural England will be a distinctive public body committed to people and the environment. As an organisation we will strive to:

- be independent and trusted;
- build consensus and lead opinion; and
- be a catalyst for others and take action ourselves.

2.2 Our vision for science and evidence is built around these principles:

- our evidence will be trusted by our stakeholders and customers;
- our science will be respected by our peers;
- all our work, from strategy through to delivery, will be underpinned by sound evidence;
- our science programme will be high quality and fit for purpose;
- our evidence will be collected efficiently and shared with others; and
- we will actively seek partnerships to extend our science work.

Our evidence will be trusted by our stakeholders and customers

2.3 As the publicly funded body charged with advising government and the public on conserving and enhancing the natural environment, we need our advice, and the evidence on which it is based, to be trusted. A sound scientific foundation and a rigorous and open approach to analysis will maintain the credibility of our evidence.

Our science will be respected by our peers

2.4 As well as our evidence and advice being trusted by our customers, we need our approach to data gathering and analysis to be endorsed by our peers. We will take our responsibilities in the wider scientific community seriously. We will engage constructively with the natural, social and economic science communities and play our part in developing and maintaining professionalism.

All our work, from strategy through to delivery, will be underpinned by sound evidence

2.5 Evidence will underpin the full breadth of our work. This will range from the immediate issues relating to delivery, through the needs of advocacy and policy to the longer term strategic requirements of environmental futures. Our science will be driven by the priority needs of the organisation.

Our science programme will be high quality and fit for purpose

2.6 When existing information is inadequate we will commission the acquisition of new data. We will manage a programme of appropriately focussed research projects to address our information

shortfalls. The programme will be fit for purpose, value for money, carefully prioritised and balanced in time, scale and duration to promote flexibility.

Our evidence will be collected efficiently and shared with others

- 2.7 We will collect information only once, but then, through efficient storage and retrieval, use it many times. We will share our data with partners in the wider information community and contribute to national recording schemes.

We will actively seek partnerships to extend our science work

- 2.8 We are not the only organisation that requires sound environmental information to shape its actions. Whilst we have our own niche and may therefore need some information that is unique to our functions, we also require contextual information. We will continue to coordinate our programmes of work with others who have complementary organisational objectives so as to avoid duplication. We will work positively and constructively with them to develop partnerships where joint working on specific areas is beneficial. We will co-fund evidence gathering and work with research funders to ensure key issues are identified and addressed, thus extending the scope, capacity and leverage of our programme.

3 Preliminary analysis of the existing programme and future needs

3.1 In order to do its job Natural England needs to understand:

- the state and the value of the natural environment and how it is changing – measuring change;
- the causes of change and the impact (both positive and negative) of human activity on the environment (and vice versa) – predicting change; and
- the underlying processes that drive and maintain whole systems and the effects of intervention – managing change.

3.2 In order to address its information needs Natural England requires a clear view of:

- what we need to know;
- what we already know;
- what is known by others (but not necessarily to hand);
- the gap between what is known in total and what we need to know (in coming to this judgement we should not be complacent and must try to consider ‘what we don’t know that we do not know’); and
- what priority actions we need to take to address our information need.

3.3 To achieve our purpose Natural England has defined four strategic outcomes:

- A healthy natural environment – England’s natural environment will be conserved and enhanced;
- Enjoyment of the natural environment – more people enjoying, understanding and acting to improve the natural environment;
- Sustainable use of the natural environment – the use and management of the natural environment will be more sustainable; and
- A secure environmental future – decisions which collectively secure the future of the natural environment.

3.4 The provision of evidence is necessary to inform and service the operational and functional requirements of the organisation and our science and evidence programme exists predominantly to support the rest of the organisation in delivering Natural England’s strategic outcomes. In addition our scientists and science programme will be active in, and crucial for, the provision of thought leadership for the organisation and the exploration of wider scientific understanding.

3.5 Within each outcome resources are spent on operational, tactical and strategic science. For example:

- Monitoring and evaluating current delivery mechanisms, and research that targets and informs our delivery of our four outcomes (this is operational science).
- Exploration of relationships between factors so that future delivery mechanisms (e.g. policy or advocacy) can be designed and advocated (this is tactical science).
- Understanding underlying complex processes so that, long term, integrated solutions can be developed (this is strategic science).

- 3.6 A preliminary analysis of the science, research and evidence needs of the organisation as a whole and an assessment of the current level of provision has indicated a shortfall and provided the initial direction for our framework. More detailed analysis is underway but initial considerations indicate the following broad direction in which Natural England's science programme needs to move.
- 3.7 The initial Natural England science programme, largely inherited from our founding bodies had some significant shortfalls. For example:
- The programme was heavily weighted towards environmental science, at the expense of social and economic sciences; further, our capacity and engagement with social and economic sciences is not as well structured and developed as it is for the environmental sciences (however we should not underestimate the challenge of integrating natural and social science which often work at different scales and with different languages).
 - The programme was heavily weighted towards the first of our strategic outcomes, at the expense of the last three.
 - The programme was too heavily weighted towards operational science, at the expense of tactical and strategic science.
 - Access to a robust evidence base in relation to people's engagement with, and enjoyment of, the natural environment was limited.
 - There was inadequate data on the value of ecosystems and the services they provide; this is universally true but particularly so in the marine environment.
 - Our ability to link into the research undertaken by others, assess its relevance to our objectives and synthesise findings from a range of sources was not well developed (but will be enhanced by the appointment of our Principal Specialist Scientists and their role in thought leadership).
 - Long term data sets and the understanding of processes (ecological, social and economic) and ecosystem services were undervalued; we need to increase our efforts to secure strategic evidence.
 - Data, information, knowledge and experience gathered by a wide range of volunteers and practitioners as part of other activity are potentially of very great value. We need to play our part in making data available to others and contribute to the development of integrated information systems.
 - Modelling and scenario building are valuable tools to build relations, integrate ideas and develop options but our current capability and capacity is limited.
 - Innovative techniques, particularly earth observational methods, are not being properly deployed and could deliver significant efficiency savings on operational monitoring and thus a shift of resources to more tactical and strategic work.
 - Working in partnership with others will enable us to achieve more and deliver integrated solutions.
 - We have not been clear at communicating what science we need that others could provide; we should explicitly seek and celebrate the input of others.
 - We have not always been successful at communicating the findings of our work through to the customer to deliver action.

4 Continuing to develop our framework for science, research & evidence

- 4.1 In order to move our framework forward and begin implementing the changes in direction we have already identified, we have divided the delivery of our Science Framework into eight key areas. Each of these areas contributes to the achievement of Natural England's strategic outcomes. Although the core of the Framework might initially be considered as the shape and content of our monitoring and research programmes, the other components relating to 'how we do things' are just as important.
- monitoring and evaluation;
 - research and development (and cross-cutting issues);
 - research partnership and influencing;
 - information systems;
 - service;
 - skilled people;
 - communications and dissemination; and
 - reputation and the need for quality assurance.
- 4.2 Refining the action plans associated with each of these eight areas is the next stage in the process of developing and delivering our framework for science, research and evidence. Engaging in dialogue with a wide range of people internally and externally will be a vital part of the process. We will use our framework as the starting point for this dialogue and will consult on a wide range of issues. We have been gathering views internally and externally and plan to publish a document covering our science and evidence programme for the next three years.

5 Conclusions

- 5.1 A preliminary analysis of the science, research and evidence we have inherited, and need, has informed the production of this framework. The document describes in broad terms the approach we intend to adopt for our science and, in terms of data, information and knowledge; it sets out our direction of travel. The framework has been produced as a stand alone document which will form the basis of our engagement with stakeholders.



Natural England works for people, places and nature to conserve and enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas.

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