



The one-hundred-and-fifth meeting of the Joint Nature Conservation Committee to be held at 0900 hours on 26 November 2015, at JNCC, Monkstone House, City Road, Peterborough, PE1 1JY

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## Joint Nature Conservation Committee

### Strategic direction for JNCC's evidence-related work

#### Paper by JNCC's Evidence Directorate

#### 1. Background

- 1.1. JNCC produces evidence on nature and related aspects of the environment and this evidence is shared across the UK countries to support their needs. This role will continue into the future, as expressed by one of the objectives in JNCC's draft strategy:

*Provide high-quality, cost-effective and accessible evidence on biodiversity, ecosystem services and natural capital.*

- 1.2. This paper describes JNCC's aim and intentions to meet this strategic objective as well as to provide cross-cutting evidence that supports other strategic objectives. It is supported by implementation and engagement plans.

#### 2. Aims for JNCC's evidence-related work

- 2.1. JNCC will produce evidence which enables decision-making by demonstrating the impacts of choices people make. As set out in the draft JNCC strategy, natural capital will be used as a guiding principle to place nature at the heart of health, wealth and wellbeing of present and future generations.
- 2.2. Evidence that communicates the impacts of societal choices within a natural capital framework will have a wider base of potential users and uses than is presently the case, so enabling informed trade-offs on natural capital across the full range of 'societal choice' (over space and time).

#### 3. Evidence needs

- 3.1. To achieve these aims, JNCC has identified three broad groupings of evidence need:
  - i. assessing the status of natural capital;
  - ii. determining the effects of activities and pressures on natural capital;
  - iii. evaluating the effects of interventions.
- 3.2. For all of the evidence needs, JNCC will ensure that:
  - i. predictive power and uncertainty in the evidence is expressed in terms suited to policy-making, the private sector, practitioners and the public;
  - ii. statutory frameworks and obligations are supported, focussing on the specified metrics, but setting these within a broader environmental understanding;
  - iii. the information is adaptable to evolving concepts, such as those of 'natural' versus 'anthropogenic' change;

- iv. additional data collection will be targeted where it is most beneficial in reducing uncertainties and clarifying relationships;
- v. It will provide a context within which other data owners can place their own data, including social and economic, in order to enhance their value for decision-making;
- vi. old-fashioned data requirements for reporting can be challenged by proving new concepts.

#### **4. Assessing the status of natural capital**

- 4.1. Understanding the state of biodiversity, together with physical and chemical features of the environment, enables determination of the status of natural capital and the ecosystem services derived from them. This is because the functions, processes and ecosystem components (species, communities etc.) collectively deliver the services and so are measured as proxies.
- 4.2. Stock, condition and trends of natural capital assets will provide the base evidence. Alongside this, evidence will be presented which relates the state of the natural capital assets to the delivery of ecosystem services.
- 4.3. This will come from re-focussing the evidence-gathering presently led by JNCC, by JNCC maximising the use of existing data sources through its data access work, and by JNCC increasing the value of research by contributing to impact.
- 4.4. In all cases existing policy delivery and reporting obligations will be supported or enhanced, or informed choices to reverse policies will be possible where such requirements are counter-productive.

#### **5. The effects of activities and pressures on natural capital**

- 5.1. Understanding the effects and so the implications of an activity requires knowledge of the relationship between the pressures an activity generates, the status of natural capital assets, and the change in pressures that are likely due to changes in the activity.
- 5.2. The base of this evidence area is JNCC work to enable access to information on activities and pressures and to integrate this with JNCC work to understand the interactions between pressures and the state of natural capital assets.
- 5.3. To provide evidence to inform decision-making on trade-offs, better evidence on the value of the ecosystem services derived from the natural capital assets, along with knowledge of the value of the activities, will be developed. It will eventually be possible to facilitate more focussed and better informed adaptive management. This area of work will require innovative research partnerships.

#### **6. Evaluating the benefit of interventions**

- 6.1. Interventions are intended to modify activities or offset the impacts of activities on natural capital assets. For the majority of interventions the effect will be apparent locally and be gradual.

- 6.2. JNCC will use research and 'local' (citizen, practitioner) science to assess the effect of interventions at local scales. Models will be used to estimate the aggregate effects on the overall natural capital assets, and to inform local decisions elsewhere. These models will also feedback to inform monitoring needed to detect changes where this adds to the management decision process. Models will be developed in partnership, and JNCC will enable their repeated use by decision-makers.

## **7. Delivery**

- 7.1. JNCC will continue to build strong and enduring collaborations, including:
- i. building on partnerships with a range of organisations, including non-governmental organisations;
  - ii. working with country nature conservation bodies and other government organisations to understand and provide more tailored evidence services;
  - iii. strengthening existing, and building new, links with universities and research institutes, which are able to provide modelling and analytical expertise, and for whom JNCC can provide pathways to impact;
  - iv. making links with social scientists and economists to integrate our evidence with assessments of societal values;
  - v. building links directly (and through countries as appropriate) with business, land managers, NGOs, landscape-scale initiatives (e.g. AONBs) etc. to more efficiently integrate local and strategic evidence needs;
  - vi. identifying other key users of evidence, who can help in specifying essential evidence products;
  - vii. contributing to initiatives aiming to drive innovation and growth, to identify where there are synergies between the evidence needed for public and private decision-making, or in the application of new technologies for evidence gathering.
- 7.2. Annex 1 contains an outline implementation plan for achieving the three evidence themes.

## **Annex 1. An outline implementation plan for achieving the evidence ‘themes’**

This annex describes the kinds of changes and continuing areas of work needed in the coming 18 months to deliver the evidence aspects of the strategy. It is incomplete and requires further testing.

Plain text describes either continuing or reoriented work, *italics* shows new work.

### **1. Assessing the status of natural capital**

- 1.1. Move from taxonomic terrestrial surveillance schemes to:
  - i. Using biological recording at wider-picture and land-parcel scales
  - ii. Sampling schemes to provide-landscape-scale state and trend
  - iii. Enabling access to the volunteer network for animal and plant health and environmental emergencies
  - iv. Aggregated bird monitoring
- 1.2. Develop a ‘landscape framework’ to underpin the above
- 1.3. Develop the information flows and methods for deriving landscape/habitat condition from Earth Observation data
- 1.4. *Increase understanding to models and how they will enable better data use*
- 1.5. *Develop understanding of cross-policy needs for biodiversity data and analyses*
- 1.6. *Develop the methods for packaging all of the above as ‘geographic information infrastructure’ to become a public-sector leader*
- 1.7. Consider how to develop standards for collecting national-scaled environmental data that can support local decision-making
- 1.8. Develop a pilot project that integrates 1.1-1.7 for a restricted area to demonstrate proof of concept for a decision-support tool set
- 1.9. Develop the existing R&D marine monitoring work into technical standards for adoption, whilst continuing some R&D to answer remaining questions. Standards will bring efficiencies by closely tying the measured parameters to information that is practically useful in intervention decisions.
- 1.10. *Take the lead in running GB/UK mobile marine species monitoring schemes*
- 1.11. Influence others (industry) to adopt the sessile species/habitat methods including developing 3<sup>rd</sup> party capability to collect standardised data.
- 1.12. *Have appropriate lead responsibility for biodiversity within a network of bodies undertaking offshore monitoring surveys of marine protected areas and eventually the whole marine environment using the standards of 1.9 and as a contribution to 1.11.*

### **2. Pressures/impacts**

- 2.1. *Develop work on pressures:*

- i. Bring marine activities/pressures work together into a clearly expressed framework for determining impact (classification, benthic maps, mobile species data and evidence needs, benthic data and evidence needs, indicators, pressure methods, human activity data access, spatial expressions of pressures, etc.)*
  - ii. Develop the 'pressures concepts' in the terrestrial field, identifying needs and opportunities, and progressing to a spatially referenced pressures framework.*
- 2.2. Improve data access, our own and that of others, including through NBN, MEDIN and other initiatives.
- 2.3. *Understand how models can be used to analyse integrated data by working with research groups.*
- 2.4. *Be able to run repeatable models to support on-going advice.*
- 2.5. Understand the spatial scales at which data on pressure/sensitivity/ vulnerability is needed.

### **3. Management tools**

- 3.1. *Using 1.6, express these frameworks (2.1), data and models together as spatially functional tools.*
- 3.2. Pilot the marine 'tools' within JNCC to test use in decision-making, and then later with marine spatial planning authorities.

### **4. Getting and retaining influence**

- 4.1. Use practical examples to demonstrate proof of concept.
- 4.2. Make tools useable by customers/consumers.
- 4.3. Promote data access as a shared service.
- 4.4. Promote advice on tool use and output interpretation as a value-added role.
- 4.5. Provide an intelligent user link with research.