



The one-hundred-and-fourth meeting of the Joint Nature Conservation Committee to be held at 0915 hours on 8 September 2015, Natural Resources Wales, Ty Cambria, Cambria House, 29 Newport Road, Cardiff, CF24 0TP

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Joint Nature Conservation Committee

Implementing JNCC's strategy: JNCC's role in relation to natural capital

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1. Background

- 1.1. The concept of natural capital underpins JNCC's proposed new strategy. It states that *'we will explore the potential for a wider JNCC role in relation to natural capital and ecosystem services, recognising the benefits nature brings to the economy and society'*. The intention is to work in partnership with the country conservation bodies and others to meet the evolving priorities of our sponsor administrations.
- 1.2. This paper considers the case for JNCC working on natural capital, how JNCC can add value to the work required, and why JNCC is best placed to take on this work. It also considers the partnerships and new relationships this work will rely on, and the opportunities for developing natural capital work and finding the necessary funding.
- 1.3. The paper does not distinguish between the work required terrestrially and in the marine environment. It is widely recognised that work to date on natural capital has been mainly focussed terrestrially. There are fundamental differences between the analysis of marine and terrestrial natural capital. For example, issues of scale, ecosystem service delivery pathways and the pressures exerted on the marine environment require a different approach to land-based analyses. Further development of a project plan to support JNCC's work on natural capital would consider both marine and terrestrial requirements.

2. The role for natural capital

- 2.1. People depend on five main types of capital (social, human, built, financial and natural). The assets associated with natural capital (soils, water, air, etc) are affected by their use and management. Better understanding of the links between the environment and the values people derive from it are needed if the value of the benefits are to be assessed, and the mechanisms needed for their maintenance are to be understood.
- 2.2. Natural capital can provide many different services (often called ecosystem services). To manage natural capital it is necessary to gain a better understanding of the trade-offs between services. For example, an area of land could be used to grow food or provide an open space for recreation. Likewise, understanding synergies, where increases in one service are coupled with increases in another (e.g. reducing soil erosion can increase crop yield) can help to reduce damage to natural capital assets.
- 2.3. The natural capital concept can inform policy-making at all levels from national (e.g. major infrastructure projects) to local (e.g. house building). It can also enable better decision-making by the private sector whether primary

(farmers), secondary (retailers) or tertiary (insurance) users. Decision and policy-makers need to be aware of the impacts and potential trade-offs to natural capital caused by their actions. To apply the natural capital concept decision-makers need the following information:

- i. current stock of natural capital;
 - ii. trends in natural capital;
 - iii. pressures, drivers and flows on natural capital;
 - iv. understanding of the trade-offs in natural capital and links to other forms of capital;
 - v. risk register.
- 2.4. JNCC has undertaken work to assess if information available for other purposes (such as nature directive reporting) can be used to assess natural capital and potential management options. JNCC has developed a spatial framework¹ to demonstrate what mapping and modelling of ecosystem services is possible using currently available information. The spatial framework is being adapted for use by at least one local authority.
- 2.5. The spatial framework helps users to:
- i. make links between the physical and biological characteristics of habitats and the major ecosystem services being provided;
 - ii. identify practical and appropriate ways in which habitat (and other biodiversity) data can be used to identify and understand ecosystem service provision;
 - iii. make an inventory of ecosystem services;
 - iv. determine where the best and worst places for action might be;
 - v. identify the changes in ecosystem service output arising from planned change;
 - vi. determine the best strategy for improving the output of ecosystem services in an area.
- 2.6. The challenge facing all proponents of a natural capital approach is securing its adoption by decision-makers across society. JNCC's work on the spatial framework has shown this is a useful tool. Feedback from potential users has focussed around the need to provide clear rules and methods to follow, and information on which data should be applied where. At this stage a more prescriptive approach is needed to assist with the adoption of the concepts. JNCC is well placed to work with the country nature conservation bodies to catalyse the adoption of the concept through the development of tools. Such an approach is imperative if natural resources are to be sustainably used.

¹ <http://jncc.defra.gov.uk/page-6241>

3. How JNCC can add value

Collection of and access to data

- 3.1. JNCC provides high-quality, cost-effective and accessible evidence on biodiversity across the UK. This information is highly applicable for determining and assessing natural capital stocks and flows, and the provision of ecosystem services. JNCC is very well placed to create and refine (working in partnership where appropriate) existing monitoring programmes to provide evidence for natural capital assessments, and is considering this through development of the evidence objective in its draft strategy. The work required to enhance the evidence collected for assessing natural capital will be described in a forthcoming JNCC evidence strategy.

Advice on data and its use, including trade-offs

- 3.2. At a time of shrinking budgets it is important data can be used for multiple purposes. Where appropriate, data collection can be adjusted to enable its use more widely (beyond the nature conservation sector). JNCC is well placed to develop innovative approaches for the application of evidence to support integrated management of natural resources (including trade-offs and optimisation of land use). Engagement with potential users of the JNCC spatial framework indicated that they require a better understanding of the data (e.g. its strengths and weaknesses when applied in particular situations) and assistance in understanding which data are appropriate in which circumstances. By working with the country nature conservation bodies and developing new relationships with a wider range of organisations it would be possible to provide better information on the data available and data needs associated with the application of a natural capital approach.

Standards, analytical tools and frameworks (including models)

- 3.3. JNCC has a proven record of producing useful standards, tools and frameworks. The application of a natural capital approach will require a set of clear evidence-based targets and milestones against which to monitor progress. Before targets and milestones can be created there is a need to develop an agreed standard for what you are measuring (i.e. definitions of natural capital and ecosystem services analogous to those used for habitats such as the National Vegetation Classification). Considerable work has already begun on classifications but a single standard has yet to emerge.
- 3.4. Standards provide credibility. Without standards measures of natural capital cannot be verified or compared. Standards provide a benchmark against which to judge policies and to set aspirations. Standards can be applied to data, frameworks and models. JNCC has considerable experience of working with multiple partners to develop standards for biodiversity reporting and would seek to provide the same service for natural capital. Making the links between data standards and outputs such as Habitats Directive reporting or biodiversity indicators are good examples of JNCC's previous work.
- 3.5. The use of agreed standards is also important for business. For example, certain sectors could seek British or international standard accreditation. Where this approach is adopted it will increase accountability and streamline work across sectors, and consequently facilitate buy-in.

- 3.6. Research is needed to identify what standards (including existing natural capital accounting tools and frameworks) have already been produced and how they might relate to any standards produced by JNCC (or in consortium with others).
- 3.7. Further work is also needed to establish who would benefit from the use of standards in their decision making. Initially, standards might be produced for discrete sets of users, for example house builders, farmers or local government. A preliminary piece of research would determine which users would be most interested in standards, what kinds of standards they already conform to, and what they would be looking for in a natural capital standard. For example, this would cover how using a natural capital approach could increase market value, meet environmental and social obligations, conform to shareholder opinions, reduce environmental impacts, or retain a licence to operate (or even operate at all if using scarce resources).
- 3.8. In addition to development of standards JNCC would also seek to work with partners to develop the tools needed for understanding trade-offs, optimisation of land use, and a risk register. The associated analytical tools and frameworks would utilise common background information but would then be adapted to meet specific country / business requirements.

Auditing natural capital

- 3.9. Auditing seeks to provide a systematic and independent examination of data, records, and performance to assess whether particular objectives have been attained. The work suggested above on standards for natural capital data is an essential step towards providing an accounting framework which can be used to audit the use of natural capital. Accounting can take different forms, for example:
 - i. *ecosystem asset accounts*, which describe in physical and monetary terms the stocks of ecosystem capital and their changes over time;
 - ii. *ecosystem condition accounts*, which describe the status or integrity of the ecosystem accounting units in some way, so that judgements about the extent of changes in the capacity of the assets to deliver ecosystem services can be made;
 - iii. *ecosystem service flow accounts*, which describe the outputs of services in both non-monetary and monetary terms;
 - iv. the *supply-use account* connecting suppliers and users, as classified by the International Standard Industrial Classification (ISIC);
 - v. *biodiversity accounts* that record levels and changes in species composition.
- 3.10. It is hoped natural capital accounting will be adopted across society (or at least by sectors that impact directly on the environment). JNCC could work with partners to provide the metrics and data required for natural capital accounting, drawing on its existing roles in relation to biodiversity data collection, dissemination, analysis and reporting. JNCC could also develop

new areas of work around defining natural capital measurements, standards, data collection enhancement and information on the effectiveness of mitigation actions. The accounting itself may be better undertaken by professional associations and standards institutes.

- 3.11. The organisations/businesses undertaking the accounting also need to understand the processes they are working with and respect the agreed standards. This can be achieved through a process of accreditation. This requires not just dissemination of the methods and standards but also the teaching and examination of potential accreditors. This is not a current area of work for JNCC (with the exception of some seabird monitoring). JNCC could seek to develop this area or it might be more appropriate for JNCC to work with an accreditor (e.g. the British Standards Institute) to provide data and methods in a standardised format. Undertaking an accreditation role might involve a conflict of interest for JNCC, although this might be mitigated by clear mechanisms ensure impartiality.

Defining what to measure

- 3.12. Undertaking measurement of natural capital at appropriate scales urgently requires attention. As noted above, some work has already begun on a piecemeal basis. For the natural capital concept to be applied widely a comprehensive approach is required. For example, a common framework, or a collection of frameworks using common classifications, could be used to inform monitoring of natural capital, the analysis of which could then be adapted to country requirements. JNCC currently manages many of the national monitoring schemes for biodiversity and could provide a similar service for the creation of national natural capital schemes. Such schemes are important as they will ensure data are standardised and metrics aligned. JNCC is already involved with the Natural Capital Committee's work on metrics in England and can provide a key liaison role across the UK's country conservation agencies.
- 3.13. The data needed for measuring natural capital will require a number of organisations working together to assess information they already have and how to fill any gaps (e.g. by using proxies, or undertaking new data collection). Given JNCC's standards work and UK remit it has the necessary experience to take on this role. For example, JNCC recognises the importance of bringing data collectors and end users together to create reports which have currency within their own domains.

4. Why JNCC is best placed to do the work

Statutory role

- 4.1. Research² ³ and discussion with business leaders through the Ecosystems Task Force under the Living with Environmental Change initiative has indicated government is best placed to develop standards and set incentives

² Globescan annual report <http://www.globescan.com/news-and-analysis/press-releases/press-releases-2015/353-values-paramount-to-achieving-sustainability-leadership.html>

³ McNab, Davies, Eves, Rowcroft & Dunscombe (2015), *Realising nature's value in UK business*, JNCC Report 558. <http://jncc.defra.gov.uk/page-7008>

for the sustainable use of natural capital – at least initially. JNCC has a statutory role to develop standards which have UK application. UK natural capital standards will be important for the private sector and professional institutions so their members can use them across the UK. Having UK standards would not limit reporting to particular formats; these could be developed to meet devolved requirements.

Skills and competencies

- 4.2. One of JNCC's core functions is the delivery of common approaches, standards and cross-border working and co-operation. This is captured in the objective in JNCC's draft strategy to 'facilitate joint working to deliver shared solutions in a devolved UK'. The work JNCC is proposing to take the concept of natural capital into a delivery phase would make a major contribution to this objective.
- 4.3. JNCC has worked with others to produce evidence on biodiversity and related aspects of the environment for many years. This has required a well developed ability to synthesise data from multiple sources and in a variety of formats. To take the natural capital concept forward there is a need for an accessible evidence base, shared (by government and private sector bodies, from which to assess biodiversity and ecosystem services. JNCC is therefore well placed to work with others to produce an evidence base which is scalable (i.e. can be used for local to supranational level), relates biodiversity data to ecosystem services, and can be integrated for modelling purposes (e.g. assessing optimum land uses). This is essential if the natural capital concept is to achieve buy-in beyond the nature conservation sector.
- 4.4. Internationally the UK is in the vanguard of thinking on natural capital and its practical application. Through fora such as the European Commission's Mapping and Assessment of Ecosystems and their Services (MAES) project JNCC is able to represent the UK, and share our knowledge with European partners. JNCC's unique UK status means it is able to represent the agencies and UK governments' needs, and raise the profile of new thinking and research required to take collective requirements forward.

5. Working in partnership

- 5.1. JNCC already works formally and informally with statutory agencies, NGOs, research councils, academic institutes and other bodies. Maintaining and strengthening these relationships will be very important for the implementation of a natural capital approach. New partnerships will also be sought with a wider range of organisations including businesses and other parts of government.
- 5.2. Given the potential for the use of natural capital in decision making it is essential organisations work together, building on their respective strengths (e.g. JNCC's role in data and standard setting, country conservation bodies' links to devolved and local interests, professional organisations' understanding of their members' needs). No one organisation can provide all the necessary information required or an understanding of how it can be applied. Collaborative working and an ability to learn and adapt to new partner/customer needs is essential. For example, natural capital will only be assessed by businesses if the methods and standards provide benefits to

them (whether that is financial or ethical). Collaborative working will enable work on natural capital to be relevant to all parties involved.

- 5.3. Natural capital is not simply relevant to the environment sector. It is just as relevant to the business sector (reputation and access to resources), infrastructure and building sectors (land-use change due to planned increase in house building and associated roads), and finance sector (for example, risks to the insurance industry from increased flood events in the UK, and internationally impacts of global market volatility on a range of sectors).
- 5.4. JNCC's work on data, standards and accounting would be applicable to a wide range of interests. New partners would be sought from three broad groups: other government departments (i.e. beyond Defra), independent organisations and the private sector.
- 5.5. Within government, JNCC could seek to build relationships with BIS, Department of Transport, Department for Communities and Local Government and Treasury, and devolved equivalents. As noted above research has indicated that whilst the private sector is willing to incorporate natural capital into its business planning, the establishment of standards, methods and metrics would gain most uptake if, at least initially, supported by government. Given the benefits to society and the UK economy JNCC would seek to work with OGDs to determine where mutually beneficial initiatives can be established.
- 5.6. Independent organisations such as the British and International Standards Institutes have already shown an interest in JNCC's proposals. Professional institutions (e.g. the Royal Institute of Chartered Accountants) are also increasingly interested in natural capital and ecosystem service approaches. These bodies would be appropriate organisations for JNCC to develop partnerships with.
- 5.7. The recent JNCC report on realising nature's value on UK business³ explored how UK businesses consider the value of natural capital in their decision-making. The report showed that businesses are willing to consider natural capital but their adoption is limited by a lack of information and tools for understanding and embedding natural capital into decision making. It will be important for JNCC to work with businesses where it is possible to demonstrate the business case for action on natural capital, for example those dependent on natural resources (agriculture and food) or where operations have a cost associated with natural resource management (eg transport and energy).

6. Opportunities to gain additional resources

- 6.1. For the natural capital concept to make a real impact it needs to be adopted by government and the private sector alike, and understood by the public. The benefits of taking natural capital into account have been well documented. It is right to expect that some of the costs of natural capital accounting should fall to government (for example where there are clear public goods and benefits), but businesses who benefit from the environment should also contribute. There are several potential options for JNCC to pursue, e.g. charging for the development of tools and frameworks applicable to particular sectors (which might solicit income from professional organisations eg building and

insurance). Given the strong links between a thriving economy and a healthy environment JNCC should also look to work with other government departments such as BIS, DCLG and Treasury.

- 6.2. Work on natural capital is being incorporated into key funding streams eg the European Commission's Horizon 2020, Future Earth, Defra's Countryside and Natural Capital NEAP and several existing NERC programmes such as the Valuing Nature Network. JNCC is extremely well placed to provide knowledge exchange between these groups and the country natural conservation bodies due to our understanding of the data needs between countries and how they will seek to apply it to their decision and policy making.
- 6.3. JNCC would need to develop new skills to implement work on natural capital suggested above. For example data collection and analysis would need to be tailored to stakeholder/customer requirements. This in turn will require a better understanding of their business requirements. This new knowledge would then be applied to the development of frameworks, models and other analytical tools. Such work would not be undertaken in isolation but would be likely to involve other statutory agencies and research institutions.

Annex 1. Examples of natural capital work across the UK and internationally

This annex provides a summary of work relating to natural capital being undertaken within the countries of the UK and in Europe. Active thought is being given to how JNCC will support and complement these activities while also developing new opportunities.

England

The Natural Capital Committee (NCC) was established in 2012 from a commitment in the 2011 Natural Environment White Paper to provide expert, independent advice to Government on the state of England's natural capital. The NCC has published three reports⁴ which present a series of potential environmental investments that offer good economic returns such as peatland restoration and woodland planting. The third report also sets out an innovative framework for corporations to take account of their natural capital. In its second report, the Natural Capital Committee proposed a long term framework (25 years) to analyse what needs to be done in order to better protect and improve our natural capital (not just biodiversity but wider environment).

Natural England has undertaken a number of projects which promote the adoption of an ecosystem services approach (eg valuation of upland ecosystem services). Natural England continues to build on research into the value of ecosystems for example using the Monitor of Engagement with the Natural Environment (MENE) survey data. This provides important insights into peoples' relationship with the nature.

Northern Ireland

In Northern Ireland natural capital and ecosystem services are features of the new Biodiversity Strategy *Valuing Nature*⁵.

The need for multidisciplinary, strategic planning, management, stewardship and protection of Northern Ireland's land and landscape resource has been emphasised by the Northern Ireland Land Matters Task Force. The group was formed in 2014 by a coalition of organisations concerned with the resources of the land and landscape. The breadth of organisations involved shows how the concept of natural capital has resonance across society.

Scotland

The Scottish Government's 2020 Challenge for Scotland's Biodiversity aims to ensure Scotland's natural resources contribute to stronger sustainable economic growth in Scotland, and natural capital increases so it can be passed on to the next generation. Scotland has developed a Natural Capital Asset Index⁶ in order to find a measure that can communicate the change in Scotland's nature in a manner that reflects natural asset value to Scotland's people and prosperity. The index aims to highlight factors driving changes, and so informs action. Additionally, the index assesses natural capital as a measure of the sustainability of Scotland's economic development, which when coupled with GDP can reflect the overall wealth of Scotland⁷. It aims to focus on establishing the best measures of the functional

⁴ <http://www.naturalcapitalcommittee.org/state-of-natural-capital-reports.html>

⁵ <http://www.doeni.gov.uk/natural-policy-biodiversity-strategy-to-2020-2015.pdf>

⁶ http://www.snh.org.uk/pdfs/publications/commissioned_reports/751.pdf

⁷ Blaney & Fairley. 2012. Valuing our ecosystems: Scotland's Natural Capital Asset Index. In Agriculture and the Environment IX, Valuing Ecosystems: Policy, Economic and Management Interactions, pp 8–13. www.sruc.ac.uk/download/downloads/id/1394/8-13_fairley

capacity of natural capital assets to sustain the delivery of ecosystem services (Scottish Natural Capital Asset Index). Scotland is the first country in the world to publish such a detailed attempt to measure annual changes in its natural capital based on an evaluation of ecosystem service potential.

A number of projects in Scotland have sought to test out the application of the ecosystem approach. For example SNH and SEPA's Carse of Stirling project sought to assess the practical application of an ecosystems approach to land use. Working with local stakeholders the project considered current and future land use and actions to deliver a range of benefits sought by local people.

Wales

Wales has recently launched the Environment (Wales) Bill. This will put in place legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. It will consider requirements for the economy, the environment and for people and communities, to be known as natural resource management. Specific tasks include reporting on the state of Wales's natural resources to improve evidence for policy decisions; natural national resources policy to set out priorities and opportunities; and area statements setting out risks, priorities and opportunities for natural resources for a given area.

Welsh Government's 'A living Wales programme. The Ecosystem Approach framework for sustainable management of Wales' has been adopted by Welsh Government as part of its overall vision and delivery of sustainable development in Wales. Embedding the Ecosystem Approach is deemed an essential component of the Welsh Government's Natural Resource Management Programme⁸ which has been created to deliver its policy commitments. Natural resource management aims to ensure increasingly resilient and diverse ecosystems that deliver economic, environmental and social benefits (Welsh Government).

Natural Resources Wales has undertaken work to consider the economic and social benefits of natural resources and the health and resilience of underpinning ecosystems. For example they are the first country to have assessed country-wide urban canopy cover. This type of work is extremely useful for showing the links between nature, human health and the economy.

UK

Defra's Countryside and Natural Capital NEAP's objective is for natural capital, ecosystem services, domestic and international biodiversity, landscapes and rural areas to be well managed, resilient and improving. Defra recognises this will require monitoring and research into how and why systems are changing, better understanding of the use and value of natural capital and ecosystem services, a need to pilot and evaluate policy and delivery options, and create tools and innovations necessary for delivery. Network members include Defra, Welsh Government, Natural England, Forestry Commission, Environment Agency, Kew, JNCC and APHA with others (eg CEFAS, MMO, RPA, NPA and members of LWEC partnership).

In 2011 the Government committed (as part of the Environment White Paper) to working with the Office for National Statistics (ONS) to incorporate natural capital into the UK Environmental Accounts by 2020 so that the benefits of nature would be better recognised. To date ONS has created inter alia initial, partial estimates of aggregate UK Natural Capital

⁸ <http://gov.wales/topics/environmentcountryside/consmanagement/natural-resources-management/?lang=en>

published in May 2014; initial UK land use, land cover, woodland and freshwater accounts; exploratory spatial accounts for woodland; a suite of ecosystem accounting principles published in August 2014.

Europe

Target 2.2 of the EU Biodiversity Strategy: Valuing our natural assets to deliver multiple benefits, seeks to show how biodiversity and the services it provides have significant economic value to the European Union. Work under the European Commission led Mapping and Assessment of Ecosystems and their Services (MAES) project has made a significant contribution to the adoption of natural capital and ecosystem service concepts across Europe, including work on natural capital accounting. This recognises the importance of natural resources in underpinning the economy and quality of life. It recognises the role of the natural environment in improving productivity, driving down costs and boosting competitiveness across sectors in the region.