**Update from UK on projects related to the European Commission MAES initiative**

There has been progress across the UK level to maintain and restore ecosystems and their services, with several national initiatives currently underway.

The [**Living With Environmental Change** (**LWEC) Ecosystem Task Force**](http://www.lwec.org.uk/our-work/ecosystems) was established in 2013 to facilitate the use of LWEC knowledge in decision making. The taskforce is guided by A Roadmap for Realising Nature’s Value and key activities include identifying knowledge exchange and monitoring needs that will make a notable difference in enabling decision makes to take better account of nature’s value.

The **Natural Environment Research Council (NERC)** has made substantial investments in understanding the links between biodiversity, natural assets and the benefits they provide, with two examples of this being the Valuing Nature Programme and the Biodiversity & Ecosystem Service Sustainability (BESS) Programme.

* [**Biodiversity & Ecosystem Service Sustainability (BESS)**](http://www.nerc-bess.net/) is a six-year (2011-2017) research programme **designed to answer fundamental questions about the functional role of biodiversity in key ecosystem processes and the delivery of ecosystem processes at the landscape scale**
* The [**Valuing Nature programme**](http://www.valuing-nature.net/) will address these challenges by aiming to better understand and represent the complexities of the natural environment in valuation analyses and to consider the wider societal value of ecosystems services, even where these may have no perceived market value.

**Update on English initiatives**

The [**Natural Capital Committee**](https://www.naturalcapitalcommittee.org/) 3rd Report was published early 2015 and presents a series of potential environmental investments that offer good economic returns such as peatland restoration and woodland planting. It also sets out an innovative framework for corporations to take account of their natural capital, alongside a set of governmental recommendations. The Natural Capital Committee’s term has been extended until September 2015 so that the committee can advise incoming ministers following the UK general election. The committee will also produce a series of working papers and outputs over the upcoming months.

There is an increasing demand for maps in England that show the provision of ecosystem services with a lot of methods developed nationally and locally. The [Ecosystem Service Mapping Gateway](http://www.nerc-bess.net/ne-ess/), developed by the NERC BESS Directorate alongside funding from Natural England brings together the information on the growing number of projects concerned with mapping ecosystem service delivery at the landscape level.

Natural England has also explored the usefulness and perceived accuracy in simple approaches to ecosystem services mapping to enable other partnerships to adopt the ecosystem approach without the need for extensive data collection and complex analysis. They published a report in 2014 on [assessing the potential for mapping ecosystem services](http://publications.naturalengland.org.uk/publication/5280919459987456?category=38019) using simple methodology derived from the National Ecosystem Assessment. The report assesses the first England level maps for ten ecosystem services, including air pollution, soils, water quality and a range of provisioning and cultural services.

**Update on Scottish initiatives**

The Scottish Environment Protection Agency (SEPA) is delivering a project to embed Ecosystem Services into its decision making. They have adopted the framework and approach promoted by the European Environment Agency through the [Mapping and Assessing Ecosystem Services project](http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/2ndMAESWorkingPaper.pdf). They are applying it to inform planning decisions for flood risk and river basin management and are also trialling it for local regulatory decisions. See below for more information.

The [*2020 Challenge for Scotland’s Biodiversity*](http://www.gov.scot/Publications/2013/06/5538) includes an aim for natural resources to contribute to strong, sustainable economic growth in Scotland and to increase the amount natural capital to pass on to future generations.Scotland has developed a [Natural Capital Asset Index](http://www.snh.org.uk/pdfs/publications/commissioned_reports/751.pdf) to find a communicable measure of change in Scotland's nature assets. The index aims to highlight factors driving changes and consequentially inform 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 Scotland[[1]](#footnote-1). It aims to focus on establishing the best measures of the functional capacity of natural capital assets to sustain the delivery of ecosystem services.

Scottish Natural Heritage (SNH) and others are reviewing Scotland’s Natural Capital Asset Index with an intention to update and re-publish it in time for the World Forum on Natural Capital in Edinburgh in November 2015. The two regional land use framework pilots funded by the Scottish Government and taking place in the Scottish Borders and Aberdeenshire are due to report in March. Both pilots have used ecosystem services mapping to develop a tool to inform decision-making on land use. The reports will inform the revision of the Land Use Strategy for Scotland, due in 2016.

**Update on Welsh initiatives**

The Welsh Government has adopted the Ecosystem Approach framework for the sustainable management of Wales’ Natural Capital. Embedding the Ecosystem Approach is deemed an essential component of the Welsh Government’s Natural Resource Management Programme which was created to deliver its policy commitments, particularly to policy developments. Wales aims to ensure that ecosystems become increasingly diverse and resilient to deliver economic, environmental and social benefits.

# Scottish Environment Protection Agency (SEPA) comments on application of the European Mapping and Assessing Ecosystem Services Framework to its decision making.

## Overview of SEPA’s approach

SEPA is delivering a project to embed Ecosystem Services into its decision making. We have adopted the framework and approach promoted by the European Environment Agency through the Mapping and Assessing Ecosystem Services project[[2]](#endnote-1). We are applying it to inform planning decisions for flood risk and river basin management. We are also trialling it for local regulatory decisions.

One of our applications has been working with a power utility company on developing a spatial mapping tool that identifies the sensitivity of ecosystems and their services to power line developments. The company will use this information to help with route selection.

Better data is coming available all the time to define Ecosystems. This means that we have used both Land Cover 2007 data and a recently developed EUNIS compatible data set that Scottish Natural Heritage has compiled. Both of these have better data resolution than Corine. We have used the following ecosystem types: cultivated land, permanent grassland, forest and woodland, freshwater wetlands, rivers and lochs (lakes); mountain and moorland (heathland and shrub and upland element of sparsely vegetated); urban; coastal land (sparsely vegetated in coastal setting). The marine breakdown is still under discussion as Marine Scotland in their interactive mapping has used a different breakdown to that proposed by the MAES project.

We have used the Common International Classification of Ecosystem Services (CICES) and translated this into lists of potential services for each ecosystem type to provide examples of the services in a Scottish context.

We have developed different assessment methods for each target area that follows the basic framework outlined in Figure 2 of the MAES Second reporti. We are developing a non- monetary evaluation of services to help define the importance and magnitude of services affected by actual incidents or proposed changes. This is based on a method already used for decisions affecting the water environment.

## Issues arising

1. **Ecosystem definition**: Sparsely vegetated land is too broad a definition as it includes land in upland and coastal settings where the interactions with adjacent ecosystems are very different. For example coastal processes are involved in the development and maintenance of sand dune systems. The services provided by sand dunes and bare rock at the coast are very different to sparsely vegetated area in upland areas.
2. **CICES classification**: The classification is a good comprehensive checklist that we have used effectively, sometimes altering the final service name to make it more meaningful to users, but otherwise using the CICES framework. However we find the biotic and abiotic split a bit artificial as ecosystems include the interaction between biotic and abiotic elements. We have brought some of the abiotic elements into the main CICES framework e.g. hydro power and wind power. As this means that it easier to look at trade-offs and impacts on services and natural resource use in a single decision making framework.
3. **Ecosystem condition data:** Common to findings in the MESEU Synthesis report we have found that condition data for terrestrial ecosystems is limited to information on protected sites. It is more comprehensive in the water environment due to the Water Framework Directive. The Scottish Government has recognised the limitations of current condition data and it is now identified as one of the strategic research themes in the RESAS programme 2016-2021 to develop an approach to collecting this information. There is also ongoing work to develop ecosystem health indicators at a national level in Scotland.
4. **Sharing knowledge:** In Scotland there are different organisations holding data and developing methods. A partnership of these organisations is proposing to share ecosystem services information via Scotland’s Environment Web[[3]](#endnote-2). Would it be possible to make a link from BISE to this web site for people who want to see case studies of application of the method in Scotland?

We note Task 1 : Extension of the 6 Cases of MESEU (1st year), to assess the extent to which ecosystem and ecosystem services maps are actually being used as source of information in national / regional planning (e.g. economic, land use, biodiversity conservation) and EIA/SEA of infrastructure) projects[[4]](#endnote-3);

The MESEU Project is welcome to consider the applications that SEPA has developed over the last year as potential examples.

## Contact for more information

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1. [www.sruc.ac.uk/download/downloads/id/1394/8- 13\_fairley.](file:///C%3A%5CUsers%5CKaty%20Thompson%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5CU68IJJUM%5Cwww.sruc.ac.uk%5Cdownload%5Cdownloads%5Cid%5C1394%5C8-%2013_fairley) [↑](#footnote-ref-1)
2. Maes, J. A. Teller, M. Erhard, P. Murphy, et al (2014) Mapping and

Assessment of Ecosystems and their Services Indicators for ecosystem assessments under

Action 5 of the EU Biodiversity Strategy to 2020 (2nd Technical Report) – Final, February 2014. [↑](#endnote-ref-1)
3. Scotland’s Environment Web http://www.environment.scotland.gov.uk/ [↑](#endnote-ref-2)
4. Mapping of Ecosystems and their Services in the EU and its Member States (MESEU) ENV.B.2/SER/2012/0016

INCEPTION REPORT MESEU-3 [↑](#endnote-ref-3)