

Exploring the components and processes of marine ecosystems critical to ecosystem service generation

Summary

As part of JNCC's strategic plan, commitments have been made to contribute to natural capital initiatives and develop the evidence base for better management of natural capital. The aim of the project was to identify the critical components and processes involved in the generation of ecosystem services in the marine environment. In addition, a review of policy drivers considering ecosystem services was undertaken. This work will help to inform marine spatial planning, ecosystem-based management, blue growth, impact assessments and other wider management plans.

Work involved

- Review of policy drivers and the extent to which they consider ecosystem services.
- Extensive literature review of the components and processes that influence ecosystem service delivery.
- Analysis and assessment to identify which components and processes are critical to ecosystem service generation.
- Spatial data mining and mapping of critical components and processes for three ecosystem services to produce maps showing ecosystem service distribution.

Key outcomes

- A limited number of the policies reviewed explicitly considered ecosystem services, but many included reference to terms related to ecosystem services.
- Identification of critical components and processes underpinning ecosystem service generation in UK waters.
- A method for mapping of ecosystem services.
- Provisional maps for three ecosystem services.

Future work

The project offers the opportunity to build on its findings by applying this approach to other ecosystem services, developing links to conceptual ecological modelling and conservation advice.

Identified research priorities

Future efforts could concentrate on integrating three-dimensional hydrodynamic and process-based models into the mapping framework, ultimately enhancing the understanding of environmental processes driving spatial patterns of ecosystem service delivery.

Further information

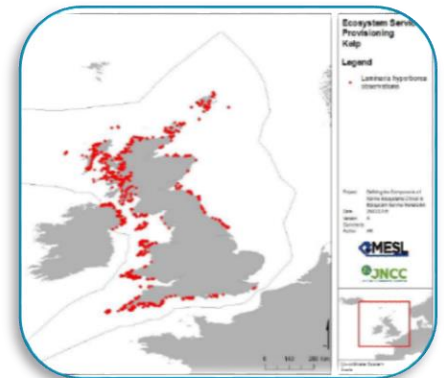
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Available at: <http://jncc.defra.gov.uk/page-7290>

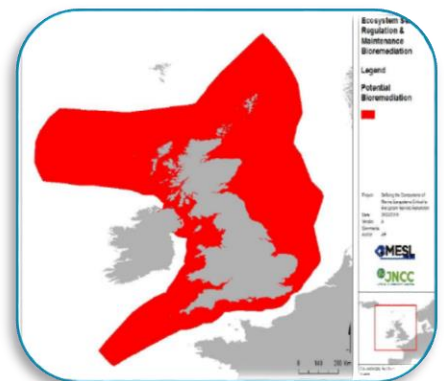
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Period of work: January – September 2016

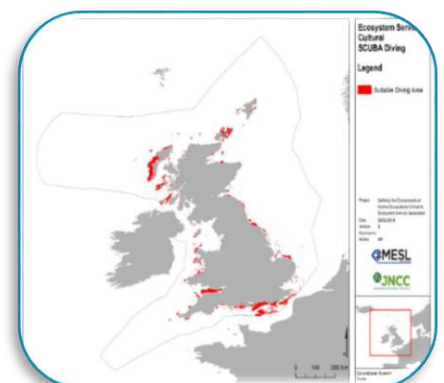
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Distribution of kelp provision



Distribution of bioremediation hydrocarbons



Distribution of areas providing good diving experiences