



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

Maximising value from offshore seabed habitat evidence

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1. Introduction

- 1.1. To date, JNCC have established partnerships and/or collaborations with Cefas, Marine Scotland Science, Northern Lighthouse Board, British Geological Survey, the Agri-Food and Biosciences Institute in Northern Ireland, University of Plymouth, National Oceanography Centre, Heriot-Watt University, Marine Institute (Ireland) and the Royal Navy in order to undertake offshore seabed surveys. Looking forwards, JNCC is exploring opportunities to develop partnerships with organisations under NERC, including the British Antarctic Survey and the National Oceanography Centre in Southampton.
- 1.2. These collaborations and partnerships enable JNCC and others to deliver high-quality evidence to help inform decisions about the marine environment, whilst sharing resources and assets. They also promote cooperative working between public sector bodies and research institutes, which delivers efficiencies and savings whilst encouraging the sharing of expertise across organisations.
- 1.3. Since 2002, collaborative offshore seabed habitat surveys led by JNCC have gathered evidence to underpin designation of marine protected areas (MPAs), initially for identification of offshore Special Areas of Conservation (SACs) and then more recently offshore evidence gathering for Marine Conservation Zones (MCZs) and Scottish Nature Conservation MPAs. Following designation, the same evidence makes a significant contribution to the development of site conservation advice, statutory consultations on Environmental Impact Assessments and Habitats Regulations assessments, and advice to develop management measures for sites. At present, offshore seabed survey carried out collaboratively by JNCC is focussed on gathering monitoring data for offshore MPAs. However, these surveys are multi-purpose and deliver evidence to support assessment and reporting under a variety of policy drivers, as well as contributing to targeted research and development aimed at improving advice on management of activities.
- 1.4. A range of seabed data types are collected on offshore surveys. These include remote-sensed acoustic data, such as multibeam echo sounders which provide information on seabed depth, morphology and in some cases habitat type. Other remote acoustic techniques used include side scan sonar (particularly useful for identifying discrete, often patchy, habitats such as *Sabellaria spinulosa* reef) and sub-bottom profiling. Groundtruthing these acoustic data is achieved either through directly sampling the benthos (using a grab or box core for example) or through the collection of high-resolution seabed imagery through the deployment of a camera sledge, drop frame or remotely operated vehicle (ROV). JNCC has been quick to harness new survey technologies such as autonomous underwater vehicles (AUVs) and have used AUVs to gather evidence at Darwin Mounds and North West Rockall cSAC/SCI. AUVs have the advantage of undertaking missions

independently from the research vessel, leaving her free to undertake other work such as seabed sampling.

- 1.5. JNCC collects data using best practice, encapsulated in a suite of standards and procedures that have been developed over many years. These range from the EU-funded Mapping European Seabed Habitats (MESH) project Recommended Operating Guidelines through to standards developed by the National Marine Biology Analytical Quality Control Scheme.

2. Maximising the value of offshore seabed evidence

- 2.1. The act of collecting offshore seabed evidence delivers value in its own right. It is an example of joint working to deliver shared solutions (i.e. the development of partnerships and collaborations across public sector bodies and research institutes) and it explores the application of new technologies (e.g. AUVs). These values are highlighted as objectives in the draft JNCC strategy.
- 2.2. Evidence collected from offshore survey also has its own values, such as:
 - i. delivering local, national, EU and international requirements (e.g. offshore MPA condition assessments, Scotland's Marine Atlas, Marine Strategy Framework Directive and the Convention on Biological Diversity);
 - ii. enabling effective policy implementation (e.g. designation of offshore MPAs);
 - iii. supporting management decisions and policy development (e.g. management advice for offshore MPAs); and
 - iv. providing public outreach and communication (e.g. [JNCC survey blog](#)).
- 2.3. These values are derived from application of the 'collect once, use many times' philosophy to offshore seabed habitat evidence. An example of this application is provided in Figure 1, which shows how a 10-minute video tow of the offshore seabed is processed and the uses to which it has been put.
- 2.4. As Figure 1 shows, even before the camera tow is analysed, video and still images from the tow form important outreach and educational products; they are published on JNCC's survey blog and the wider JNCC website as well as being used in JNCC reports or published externally. The imagery is also archived through the Marine Environmental Data Information Network (MEDIN) at the relevant Data Archive Centre. Following analysis and incorporation into a shared benthic sample database, this piece of interpreted evidence forms part of a much wider evidence base. It may be used for any number of purposes, for example, updating seabed habitat maps, supporting MPA designation, contributing to MSFD indicator testing or supporting advice on fisheries management measures. The evidence also contributes to European and international processes, such as the European Marine Observation and Data Network (EMODnet) and advisory processes undertaken by the International Council for the Exploration of the Sea (ICES).

- 2.5. Appropriate cataloguing and processing is essential to realise these values. For example, standardisation throughout the process enables a high-quality, cost-effective and accessible evidence base to be established. The evidence collected through offshore seabed surveys demonstrates best practice in meeting the evidence objective in JNCC's draft strategy.

3. Conclusions

- 3.1. Offshore seabed surveys contribute to a wider evidence base that includes outputs from inshore survey work and terrestrial surveillance and monitoring schemes. The challenges moving forwards are to ensure that these shared evidence sources can be a) developed in such a way to ensure they are fully utilised within an evidence framework for biodiversity, ecosystem services and natural capital, and b) used optimally in local, regional and national decision-making as well as in delivering reporting obligations and commitments.
- 3.2. Realising this vision may in part be achieved by:
- i. creating evidence sources that operate at multiple scales;
 - ii. relating biodiversity data to natural capital concepts, ecosystem services, environmental risks and resilience;
 - iii. expressing confidence in terms suited to both public and policy-making;
 - iv. making best use of predictive and modelling tools;
 - v. integrating measured and modelled data; and
 - vi. targeting measured data to areas of the environment at the highest risk of damage.

Figure 1. Flow diagram showing the processing of a 10 minute video tow of the offshore seabed and its multiple uses

