

9

Marine mapping and area protection

*We provide advice on marine habitat
mapping and on the selection of
marine protected areas*

The implementation of the Habitats Directive in UK offshore waters (those beyond 12 nautical miles from the coast) was a priority for JNCC's marine effort during the reporting year. Strong links were maintained with work undertaken by the country agencies in inshore waters. Draft Offshore Marine Conservation Regulations, spelling out the way in which the Habitats and Birds Directives will be applied in UK offshore waters, were put out to consultation by Defra in July. We commented on the draft regulations and have contributed to their further development. They will give JNCC the responsibility to nominate offshore Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) to Government, as well as creating new measures for species protection.

To date, we have presented seven sites to Government for consideration as meeting the criteria for offshore SAC status. The pace of offshore survey work to underpin the identification of further possible sites was accelerated in June as increased funding became available.

During the reporting year, five major offshore surveys were undertaken to identify and map undersea reefs for

consideration as offshore SACs. Areas surveyed include previously unknown reefs in the central English Channel and boulder and cobble reefs in the Irish Sea. We were also able to collaborate with the Department of Trade and Industry's Strategic Environmental Assessment surveys, to discover tide-swept reefs 800 m deep on the Wyville Thomson Ridge between Rockall and the Faroe Islands.

Work in support of Birds Directive requirements continued in both field and office, and in close collaboration with the country nature conservation agencies. Surveys of species listed on Annex I of the Directive and regularly occurring migratory species were conducted throughout the UK.

Possible marine extensions to breeding red-throated diver SPAs are being identified through a programme of research that aims to model suitable feeding habitat for the species. Work in the Shetland Islands, using a variety of field methods, including radiotracking of individual birds, revealed several attributes of the preferred feeding areas.

Seabed bathymetry

(Far left) JNCC have carried out survey work in collaboration with the Countryside Council for Wales and University College Cork to investigate areas of potential reef habitat in the northern Irish Sea. The use of multibeam echosounder systems allows seabed bathymetry to be mapped in detail and can be used to identify seabed features. The 6.5 km by 6.5 km area surveyed revealed a field of drumlins, which are elongated hills formed by glacial action.

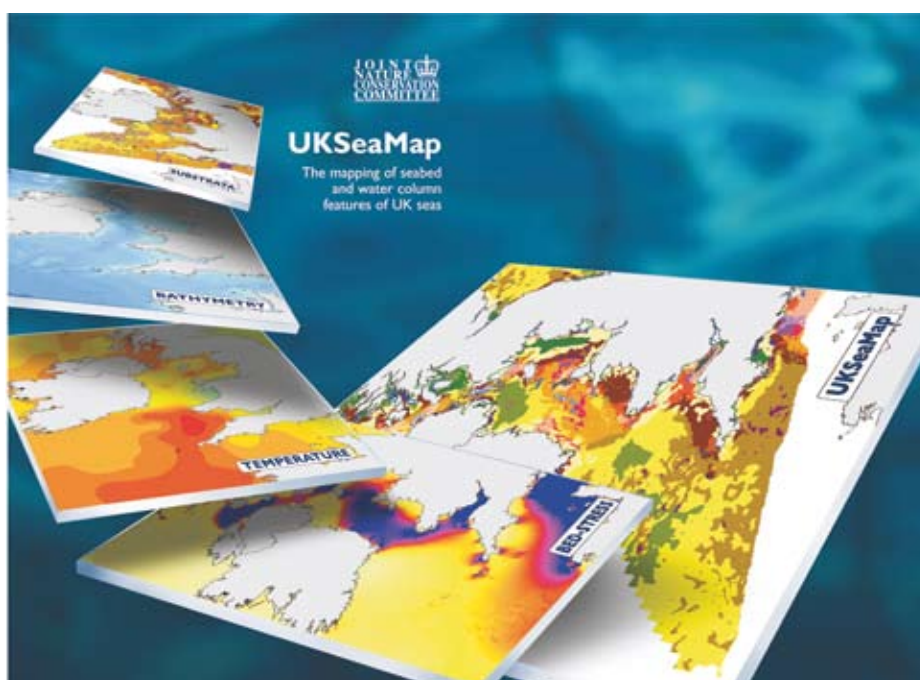
© JNCC, UCC, CCW

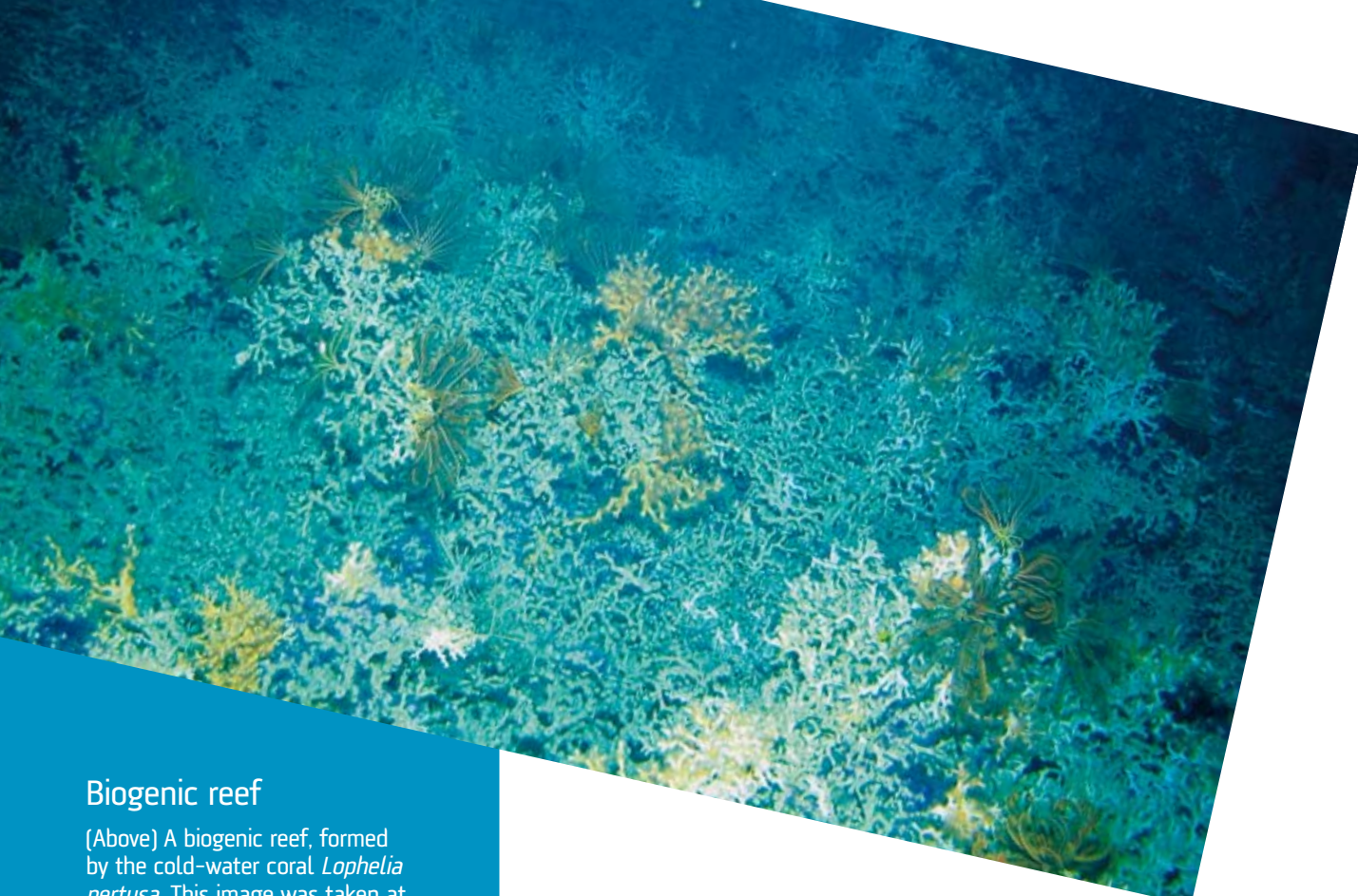
UKSeaMap

(Left) Knowledge of seabed habitats around the UK remains patchy, but by using available geological, physical and hydrographic data JNCC has been able to model the expected distribution of landscape features to produce the first habitat maps for UK waters.

The maps (available online at www.jncc.gov.uk/UKSeaMap) are intended for use in marine spatial planning, as a means of identifying protected areas and as a tool for the development of monitoring and surveillance programmes.

© JNCC





Biogenic reef

(Above) A biogenic reef, formed by the cold-water coral *Lophelia pertusa*. This image was taken at a depth of 800 m on Hatton Bank, which lies approximately 600 km north-west of Britain. Cold-water coral reefs are long-lived and fragile, and are vulnerable to physical damage. They are protected under the EU Habitats Directive.

JNCC's programme of aerial surveys of inshore areas used by seabird and other waterbirds outside the breeding season continued. Flights were made over 23 different areas of search from Shetland in the north, to the Lancashire and Yorkshire coasts further south. Northern Irish areas were also surveyed for the first time. In several areas of search the survey was completed with the accomplishment of at least three years' worth of data, and analyses and reports were produced for six areas. Analyses aimed at assessing SPA qualification were completed in a further three areas. Our work to identify potential SPAs was also informed by data from seabird surveys commissioned by the Department of Trade and Industry in priority areas for wind farms.

Presentations reporting progress with the marine SPA work were made at several fora, and a significant paper was produced re-assessing the size of the British wintering red-throated diver population.

JNCC leads an international habitat mapping programme, Mapping European Seabed Habitats (MESH), on behalf of 11 other partners from the UK, Ireland, the Netherlands, Belgium and France.

A major survey project contributing to developing MESH guidelines on mapping ended during the year. A collaborative project between JNCC,

the British Geological Survey, the Centre for Environment, Fisheries and Aquaculture Science and Marine Ecological Surveys, it was funded by the Aggregates Levy Sustainability Fund. The project assessed and mapped habitats in the eastern English Channel. Its outputs will be used to help implement the Habitats Directive and to better manage marine habitats.

Also during the year, JNCC launched www.searchMESH.net/webGIS, the first interactive, online system that presents maps of seabed habitats around north-west Europe. Developed by JNCC with the support of the project partners, the MESH webGIS allows users to view a range of maps at scales appropriate to their areas of interest.

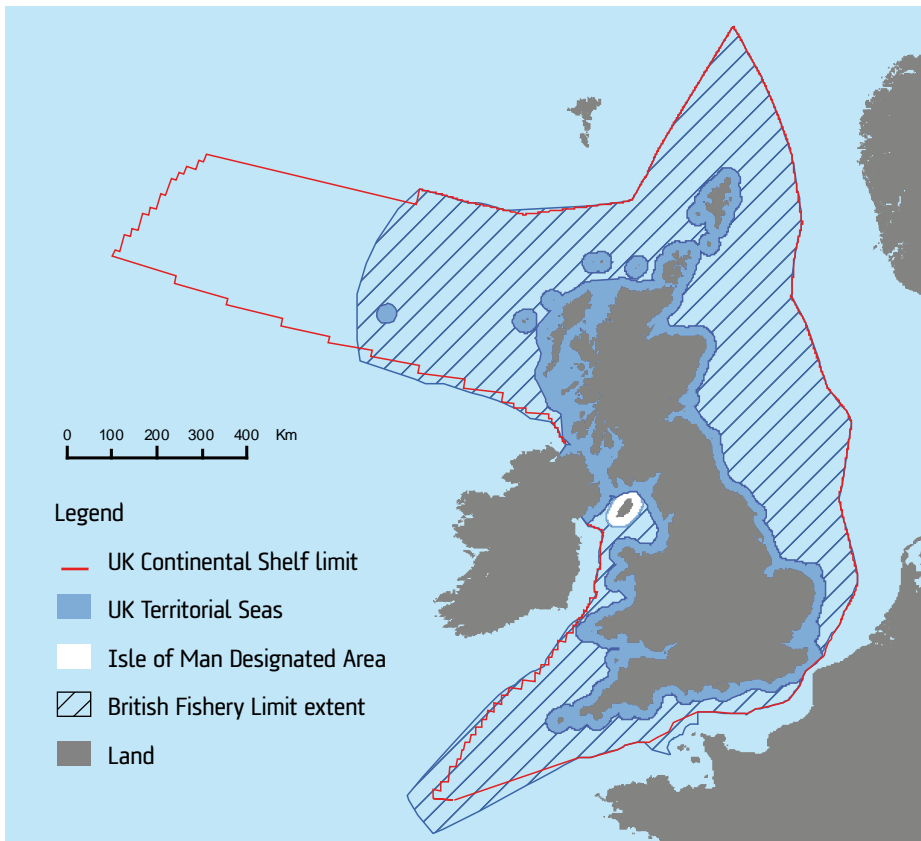
In March, the MESH project presented its results to an international audience of more than 200 people from more than 20 countries at a conference in Dublin. JNCC staff were closely involved and Managing Director Deryck Steer provided the conference's closing address.

In another first, JNCC has developed broad-scale marine landscape maps for all UK waters. Funded by a consortium that included Government departments,

non-governmental organisations and the country agencies, the UK SeaMap project drew on lessons learned by JNCC during our Irish Sea Pilot project.

The Oslo and Paris Convention for the Protection of the Marine Environment (OSPAR) was created to prevent pollution

of the seas and to protect and preserve the quality of the marine environment. During the reporting year JNCC helped to refine OSPAR's Ecological Quality Objectives and to assess progress towards its goal of a network of well-managed Marine Protected Areas.



UK Continental Shelf

(Top left) The UK Offshore area, which covers approximately 706,200 km² of seabed. Acknowledgements: World Vector Shoreline © US Defense Mapping Agency. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964.

© Crown Copyright. Map copyright JNCC 2007

Deep-water feather stars

(Bottom left) Deep-water feather stars, photographed at 800 m depth on Wyville Thomson Ridge, approximately 150 km north of Scotland. Wyville Thomson Ridge is an extensive area of stony reef thought to have been formed by the ploughing movement of icebergs at the end of the last ice age. The distinct hydrographic regime around the ridge has led to the development of unique ecological communities. The site has been proposed to Government as a draft Special Area of Conservation.



Both of the photographs on these pages were obtained through a joint survey, forming part of the UK Department of Trade and Industry's offshore energy Strategic Environmental Assessment programme (funded and managed by the DTI and coordinated on their behalf by Geotek Ltd and Hartley Anderson Ltd), and contributing to the survey of areas of potential reef to support the implementation of the EU Habitats Directive in UK offshore waters (funded by Defra and managed on Defra's behalf by JNCC).

© JNCC/Defra/DTI