NO. 4 - 2008

Many of the species in the deep-sea only occur in ice-cold deep-water. Here are some examples of animals that were documented during the expedition with R.V. G. O. Sars in June 2008. From left and clockwise: a large hydrozoans (*Corymorpha sp.*), an amphipod (*Cleippides quadricuspis*), a feather star (*Crinoidae*), and a benthic jellyfish (*Stauromedusae*). The images were captured at ca 1000 m depth off Vesterålen.

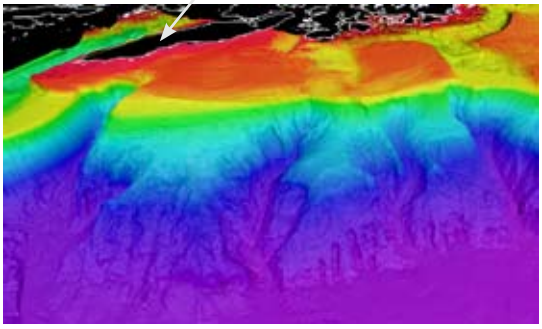
MAREANO – mapping Norwegian seabed

Since the MAREANO programme was initiated in 2006, it has mapped 37 000 square kilometres of seabed off the Norwegian counties of Troms and Nordland. On the most recent expedition in June 2008, samples were collected and videos were taken down to depths of 2000 metres. The MAREANO project has mapped more than 330 new coral reefs, gas seeps and new deep-sea habitats, and has also developed procedures for predicting nature types.

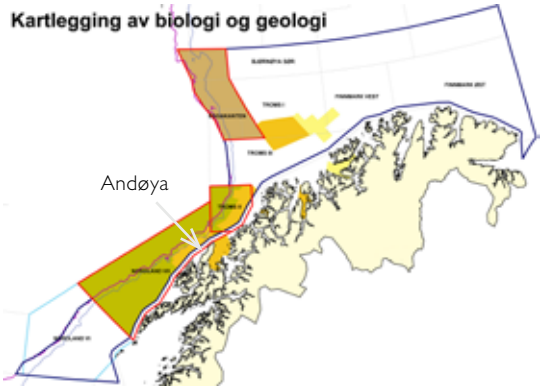
BY LENE BUHL-MORTENSEN AND PÅL BUHL-MORTENSEN

The area covered by MAREANO includes benthic habitats down to depths of around 3000 metres. It is extremely challenging to sample and observe in such deep waters, as there is very little research equipment designed for those great depths. The pressure down there is immense, and the forces acting on the long wires and cables that we use mean that powerful winches are needed.

The June 2008 expedition looked at areas down to depths of 2000 metres. The species that are found in very deep water are totally different from those in shallower areas. This is due to an important change in sea temperature that occurs at a depth of around 600 to 700 metres. This is where the water temperature drops below zero degrees Celsius, as you enter the cold waters of the Norwegian Sea.



The seabed of Andøya island and Vesterålen display a variety of marine landscapes and nature types.



Coloured sea areas on the map indicate areas that already have been or are planned (the darkest area covering Nyegga shelf break) mapped by MAREANO.

MAREANO kartlegger havbunnen

MAPPING AND PREDICTING NATURE TYPES

Under Norwegian standards, a nature type is defined as - a homogeneous type of nature, which embraces all plant and animal life and the environmental factors acting there. Nature types are generally home to a unique combination of species that reflects the local environmental conditions.

MAREANO produces full-coverage maps of benthic nature types based on visual inspection, the mapping of environmental conditions and the interpretation of data collected through multibeam mapping.

Many of the nature types are linked to particular marine landscapes. Examples of marine landscapes in the MAREANO area include: deep-sea banks, deep-water channels, ravines, coral reefs, avalanche fields and abyssal plains.

Many of the nature types mapped by MAREANO do not have recognised names, and have never been systematically described.

It is virtually impossible to produce full-coverage maps of nature types entirely based on samples and observations for an area as big as the one covered by the MAREANO project. All of the information obtained about species composition and environmental conditions is therefore used to predict where different habitats will be found. In simple terms, this involves finding the connections between measurable factors (that are universally present) and the incidence of communities of organisms.

MAREANO

The MAREANO programme is mapping the sea depth, seabed conditions, biodiversity, nature types and sediment pollution in Norwegian waters. The results will be made available at *www.mareano.no* and will be presented with the aid of maps. Information about marine nature types and benthic biological communities is important for the implementation of ecosystem-based management of the sea, and for assessing the consequences of human activities. Thanks to its use of a variety of sampling tools to ensure that organisms on all types of seabed are well represented, MAREANO offers a unique insight into the diversity of benthic species and habitats. The programme is led by the Institute of Marine Research, in collaboration with the Geological Survey of Norway and the Norwegian Hydrographic Service. It is being financed by the Ministry of Fisheries and Coastal Affairs, the Ministry of the Environment and the Ministry of Trade and Industry.

The shallow banks on the continental shelf has typically coarse sediment. Strong currents lead to erosion and leave the larger stones in old m,oraines behind. Sponges, calcareous algae and other encrusting organisms add colour to the stones.

INSTITUTE OF MARINE RESEARCH
HAVFORSKNINGSINSTITUTTET

INSTITUTE OF MARINE RESEARCH
Nordnesgaten 50
P.O. Box 1870 Nordnes
NO-5817 Bergen – Norway
Tel.: +47 55 23 85 00
Fax: +47 55 23 85 31

www.imr.no

TROMSØ DEPARTMENT
Sykehusveien 23
P.O. Box 6404
NO-9294 Tromsø – Norway
Tel.: +47 55 23 85 00
Fax: +47 77 60 97 01

FLØDEVIGEN RESEARCH STATION
NO-4817 His – Norway
Tel.: +47 55 23 85 00
Fax: +47 37 05 90 01

AUSTEVOLL RESEARCH STATION
NO-5392 Storebø – Norway
Tel.: +47 55 23 85 00
Fax: +47 56 18 22 22

MATRE RESEARCH STATION
NO-5984 Matredal – Norway
Tel.: +47 55 23 85 00
Fax: +47 56 36 75 85

PUBLIC RELATIONS AND COMMUNICATION
Tel.: +47 55 23 85 38
Fax: +47 55 23 85 55
E-mail: informasjonen@imr.no

CONTACTS
Lene Buhl-Mortensen
Tel: 55 23 69 36
E-mail: lenebu@imr.no

Pål Buhl-Mortensen
Tel: 55 23 68 15
E-mail: paal.buhl.mortensen@imr.no

RESEARCH GROUP
Benthic habitats and shellfish