



Welcome

Issue 5 features SAMS' new seafloor mapping technique, a report on the Porcupine Abyssal Plain survey and an MBA project on jellyfish. There

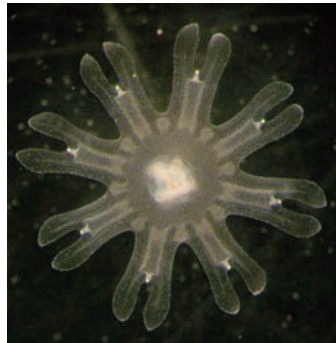


Photo: John Rundle, MBA

is also the latest news about the Marine Management Organisation and the legal framework for ocean fertilization experiments. I look forward to receiving your feedback on Issue 5 and articles for Issue 6.

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Coordinator

Annual Science Meeting (ASM)

The Oceans 2025 programme is now in full stride, delivering a wealth of results through both Centre research and SOFI projects. The 2009 ASM (1 - 3 June, Liverpool) will focus on scientific outputs, emphasising their links to NERC themes, cross-theme initiatives and national marine policy. The call for presentations has been made, through Centre Theme Leaders; online registration is now open. Representation of all research groups participating in the programme is strongly encouraged.

Details:
www.oceans2025.org

Next generation marine research

Appointments



Sir Geoffrey Holland KCB, former Vice-Chancellor of the University of Exeter, will become the 14th President of the MBA in the organization's historic 125th year. Press release at: <http://www.mba.ac.uk>
Photo: MBA

MBA celebrates 125 years of excellence in research and education

This year, the MBA celebrates 125 years of excellence in research and education; the Association is planning a series of events from April 2009 to April 2010. Further information: <http://www.mba.ac.uk/125years.php>

Diving into Google Ocean...

Scientists from MBA, NOCS and PML have worked with Google to develop version 5.0 Google Earth – which now includes an 'ocean layer' of marine data and images and features blogs and film from ocean researchers working around the world. See: <http://earth.google.com/ocean> and the following press releases from the MBA, NOCS and PML:

www.mba.ac.uk/mbanews.php?article=28
www.noc.soton.ac.uk/nocs/news.php?action=display_news&idx=549
www.pml.ac.uk (see latest news)

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A strategic marine science programme for NERC

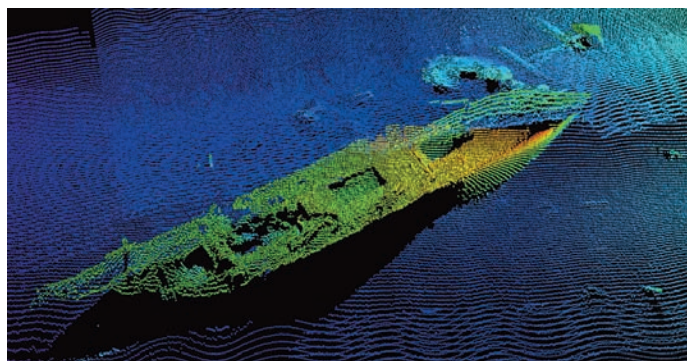
Oceans 2025 research reports

New seabed mapping capability *John Howe, SAMS*

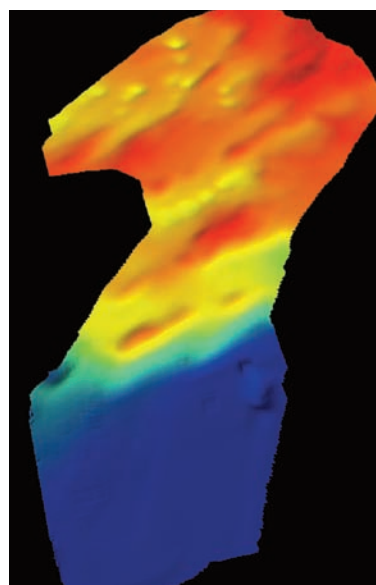
January saw the delivery, testing and installation at SAMS of the new multibeam bathymetric sonar on RV *Calanus*. The Reson Seabat 8124 sonar uses a 200 kHz frequency, with 80 beams of sound 4 times a second, over a 120° angle and provides seabed coverage of over 1km in water depths up to 300m. Applications include basic hydrographic mapping and studying habitats and seafloor sediment processes.

The sonar will provide high-resolution seabed maps around the Firth of Lorn and the Sea of Hebrides, enabling study of topographic controls on sediment transport on the shelf and palaeoceanographic records of changes in Atlantic circulation (Oceans 2025 Themes 3 and 1 respectively). The system will also support Kate McIntyre's research studentship on 'Post-glacial landscape evolution: timing and limits of the Younger Dryas ice sheet'.

The multibeam sonar can be used with the existing SAMS side-scan sonar, a towed instrument which defines objects and sediments according to their acoustic properties; i.e. rocks bounce sound back easily, mud absorbs sound and provides a weaker return. The side-scan sonar is a dual frequency, 100 and 455 kHz, Klein 3000 model.



Above: A raw multibeam sonar image of the second world war wreck of SS *Breda*, lying in 30m of water in Ardmucknish Bay, Oban, January 2009. Image: SAMS



Left: A processed 3D view of the seabed off the northeast coast of Isle of Lismore. Water depth ranges from 10m (red) to over 100m (dark blue); total area ~10km². The northeast southwest contour patterns may be a seabed expression of the bedrock, whilst the curious seabed 'holes' could be gas or fault related.

Image: SAMS

Jellies on the telly *Guy Baker, MBA*



Moon jellyfish *Aurelia aurita*. Photo: John Rundle, MBA

Scientists at the MBA are growing jellyfish for use in a novel experiment that is looking for similarities in the movement patterns of very different types of marine animals. John Rundle has succeeded in culturing moon jellyfish (*Aurelia aurita*) from juveniles to adults in the lab, not an easy task as they will not thrive in static water. This success makes possible an experiment where the movements of young jellyfish will be filmed to see whether the decisions they make whilst searching for food are similar to those seen in more sophisticated animals such as turtles, large sharks and marine birds. www.mba.ac.uk/mbanews.php?article=27

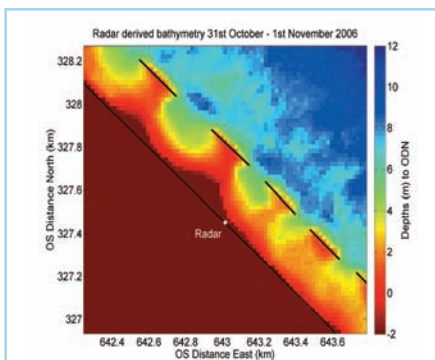
Remote Coastal Mapping around Shore Parallel Breakwaters

Paul Bell, POL

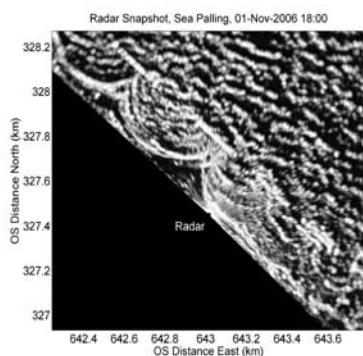
Mapping embayments around shore parallel breakwaters at Sea Palling on the south east coast of England has tested a new radar based remote mapping technique. Using wave behaviour visible as "sea clutter" on radar, the technique allows mapping of large areas of the sea bed.

The EPSRC-funded LEACOAST2 project, involving the Universities of East Anglia, Plymouth and Liverpool and POL, involves study of the hydrodynamics and sediment processes around breakwaters. Co-supported by the Oceans 2025 programme, the LEACOAST2 team has monitored waves, currents and sediment dynamics at Sea Palling, using an ARGUS video system to study nearshore processes and an X-band radar, for looking over longer ranges.

The radar, positioned at the local lifeboat station, recorded animations of the sea surface; radar snapshots and time-lapse images uploaded to POL's



A bathymetric map derived from 24 hourly radar records during a storm. The radar is marked in white, the sea wall and breakwaters in black. (Image: POL).



A radar snapshot of Sea Palling showing clear wave patterns propagating through the gaps in the breakwaters. (Image: POL)

website enabled the system to be monitored via the Internet. Mapping is limited to conditions where wave heights exceed 1m, thereby becoming visible on radar. Data are processed to generate maps of inferred water depth, which are related to a vertical reference using tidal predictions plus a surge component.

The technique produces stable bathymetric maps with only a few hours of data and enables remote monitoring of large areas of shallow water. The radar derived maps can be used to provide early warning when a sand bank is about to migrate into a navigation channel. Paul Bell is collaborating with OceanWaves GmbH to commercialise the technique. Article in full:

Google:
[hydro international + coastal mapping + paul bell](http://hydrointernational.com/coastal-mapping-paul-bell)

The PAP site has a makeover

Kate Larkin, NOCS



In 2009, a newly designed full-depth mooring line with telemetry capability will be deployed at the Porcupine Abyssal Plain (PAP) site (Theme 10) where sustained observations have been coordinated by NOCS scientists for over 20 years. The mooring's sensors have real-time capability via the Iridium-based telemetry system developed at NOCS and will continue observations started in 2002. Addition of an Ocean Data Acquisition System meteorological buoy will enable monitoring of air-sea interactions and demonstration of acoustic telemetry from the seafloor to the surface. The PAP observatory is one of nine observatories funded by the FP7 EuroSITES project. Coordinated by NOCS, EuroSITES aims to advance the way the European community monitors the deep ocean.



Article in full:
[ftp://ftp.noc.soton.ac.uk/pub/jfpea/](http://ftp.noc.soton.ac.uk/pub/jfpea/)

www.eurosites.info
www.noc.soton.ac.uk/pap/index.php

Strategic Ocean Funding Initiative (SOFI)

SOFI workshops

Four workshops supported by the Strategic Ocean Funding Initiative have already been held this year, with summary reports, where available, at www.oceans2025.org/SOFI_Workshops.php

- Developing Integrated Marine Biogeochemical and Ecosystem Research (IMBER) activities in the UK (8-9 January; Plymouth) <http://www.imber-uk.org/>
- Physics to fish in shelf seas: the science behind an ecosystem based approach to management of marine bioresources. (19-20 January; Windermere)
- Underwater optics: measurement, interpretation and implications for modeling marine processes (16-17 March, Glasgow; www.oceans2025.org/PDFs/SOFI_workshop_events/Optics_Workshop_March_2009.pdf)
- Marine Arctic Workshop (31 March- 2 April, Oban)

Two others have been approved, as follows:

- UK Sediment Initiative 2009 (27-29 April, Liverpool; www.pol.ac.uk/home/news/2008-11Sediment09.html)
- Marine Phytoplankton Taxonomy Workshop (6-17 July, Plymouth; www.mba.ac.uk/phytoplanktonworkshop/)

Funding availability: www.oceans2025.org/PDFs/SOFI_workshop_guidance_Oct_08.pdf

Call for Citizen Science ideas

The National Maritime Museum, Greenwich aims to develop marine science projects with public involvement in partnership with Oceans 2025. 'Citizen science' activities use volunteers to describe digital data sets where the human eye (or ear) is more effective than automated data-processing. If you have data that might benefit from labour-intensive analysis, contact p.williamson@uea.ac.uk. to find out more.

Related link: www.galaxyzoo.org

Policy News: The Marine Management Organisation (MMO)

The headquarters of the newly-created MMO are to be located at Tyneside. The MMO will provide: a focal point to take forward the government's new marine planning system, consistency of marine licensing for different sectors, integration of fisheries and wider marine management, and transparent, accountable, proportionate, consistent and targeted enforcement of fisheries, nature conservation and licensing regimes within a single regulator. Further information: www.mfa.gov.uk/news/press/090212.htm

International legal framework for ocean fertilization studies

LOHAFEX, a German-Indian iron addition experiment (with minor UK involvement) has recently been completed in the South Atlantic. But it nearly didn't happen, after last minute legal challenges were raised by environmental groups. To clarify current ambiguities – and to ensure that risks are minimized – the London Convention/London Protocol is developing an assessment framework to regulate future research in this area, involving not only micro- and macro-nutrient additions but also artificial upwelling. Oceans 2025 and NERC were represented in the Defra-led UK delegation when this framework was developed at working group meetings hosted by the International Maritime Organization in early February. The new legal arrangements are expected to be finalised in October, subject to approval by LC/LP contracting parties.

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