

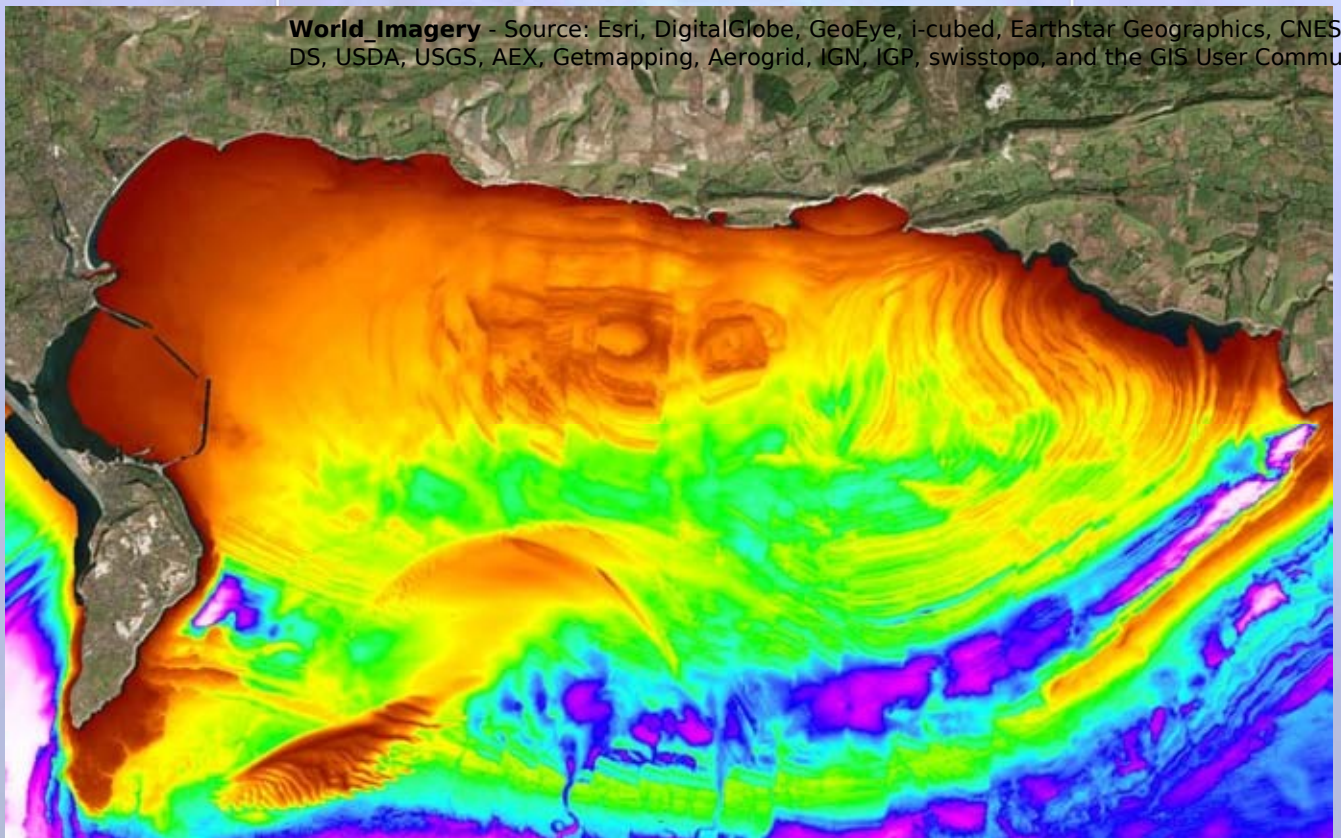


# **GEOHAB**

**Marine Geological and Biological  
Habitat Mapping**

**Marine Environment Mapping and Interpretation –  
from the Coast to the Deep Ocean.**

**Second Circular**



**2<sup>nd</sup> to 6<sup>th</sup> May 2016**

**WINCHESTER, UNITED KINGDOM**



**GEOHAB** (Marine Geological and Biological Habitat Mapping) is an international association of marine scientists studying and mapping biophysical (i.e. geologic and oceanographic) indicators of benthic communities, species diversity and distribution.

The GeoHab 2016 conference will be held in Winchester, England, the ancient capital of Wessex, from Monday 2<sup>nd</sup> to Friday 6<sup>th</sup> May 2016.

This annual conference brings together over 120 biologists, geologists, environmental scientists, spatial analysts, technologists, acousticians and environmental advisors from around the world and provides a unique multidisciplinary forum for the exchange of knowledge and ideas that underpin sustainable ocean management. The conference also houses an exhibition of industry technology and products used in the marine environmental community. Because of the relatively small number of delegates and focused topics, GeoHab conferences are organised as an informal, single-stream session, which encourages dialogue between delegates and exhibitors.

Students are encouraged to attend and grants are available. GeoHab is now in its 15<sup>th</sup> year and has several publications based on work contributed by members, coordinated through annual meetings.



**VENUE** The 2016 GeoHab conference will take place in the Winchester Guildhall and will be hosted by the National Oceanography Centre, Southampton and the Marine Environmental Mapping Programme MAREMAP.



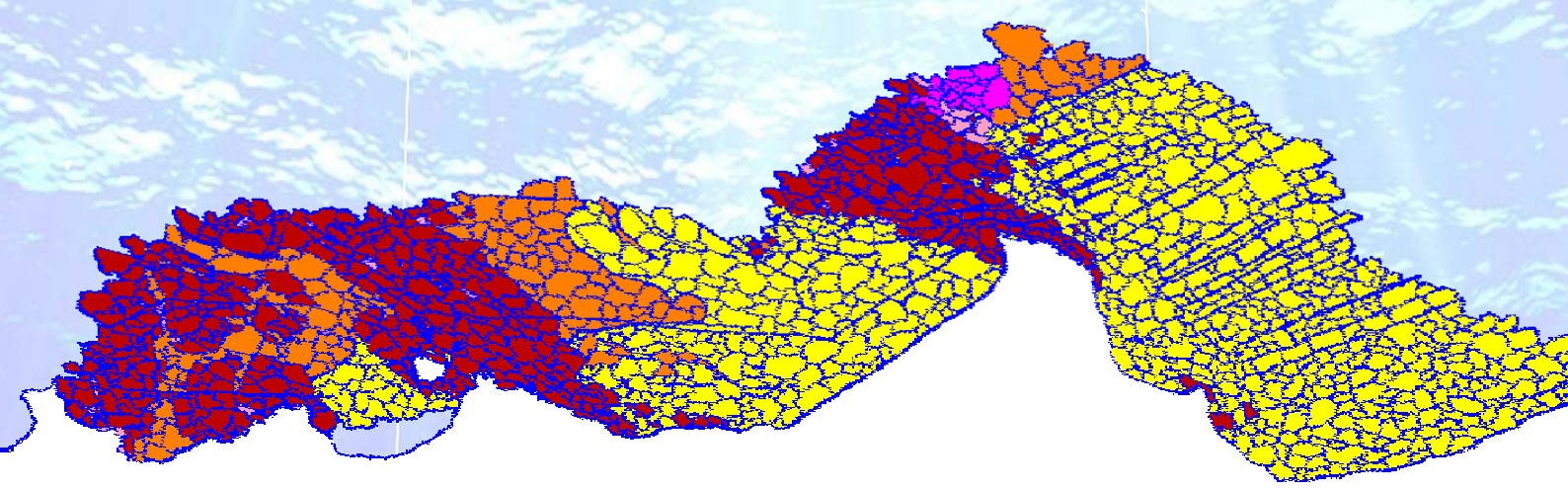
**LOCATION** Winchester is 60 miles south west of London and has good road and rail connections. The conference venue is in the centre of Winchester. The city is relatively small and walking is recommended as parking is very limited. Much of the present form of the city dates to the late 9<sup>th</sup> century when King Alfred the Great held court. The city has many historic locations, not least Winchester Cathedral founded in 642 but rebuilt in 1079.



## THEMES

- 1. Development of standards for classification, confidence and assessment of habitat maps:** This session will focus on how repeat surveys should be carried out for monitoring, how map uncertainty should be conveyed to the end user and how best ground truthing approaches should be determined.
- 2. National mapping program management and data-sharing:** This session will discuss big datasets, from their collection to their handling and most significantly their processing and dissemination; including the use of automated approaches and crowd-sourcing options.
- 3. Technological advances in habitat mapping:** This session will be a showcase of new approaches for both the collection and processing of acoustic or biological data, and their incorporation into habitat maps.
- 4. Shelf and deep-sea habitats:** This session is going to include discussion of specific deep-sea habitats as well as how their fine-scale heterogeneity and specific characteristics may play an important role at broader scale.
- 5. Coastal and shallow water habitats:** This session will have a particular focus on linking methodologies from terrestrial remote sensing to shallow water environments as well as address vulnerable coastal ecosystems.
- 6. Anthropogenic and natural disturbance effects on marine habitats:** This session will address the response of marine ecosystems to disturbances, in order to better understand the processes structuring species distribution patterns and ecosystem recovery.
- 7. Role of oceanography in habitat mapping:** This session will attempt to bring together the fields of oceanographic modelling and habitat mapping, by considering the role of water masses in shaping species spatial patterns.





WORKSHOP Monday May 2nd, 2016, 9h00-18h00

## “Interpretation of Marine Environments using Object Based Image Analysis (OBIA)”

**Description** The workshop for GeoHab 2016 will focus on object-based image analysis (OBIA), an increasingly applied image segmentation approach in both terrestrial and marine remote sensing. To interpret increasingly numerous and detailed imagery, expert interpretation and manual digitization of boundaries is often too time consuming or too subjective to produce the required outputs. By identifying areas of similar statistical properties, OBIA provides a repeatable and efficient method to produce categorical maps based on a range of raster imagery (including bathymetry, backscatter, derived environmental variables such as slope or aspect, aerial photography, etc.) covering the same geographic areas. The delineated areas can then be subjected to various supervised or unsupervised classification algorithms. Although, different approaches to OBIA and software will be presented and discussed, the sessions will also be directed at newcomers to the approach with hands on time dedicated to trying some of the available software.

**Objectives** The aim of this workshop is to both give a space for expert OBIA users to discuss their experience and exchange best practice approaches as applied to a variety of marine landscapes and developed to achieve an array of objectives, as well as provide newcomers a chance to assess whether this approach may be of interest for their specific dataset.

**Overview** In the morning invited talks will cover topics such as background on OBIA, available software and selected case studies from different marine environments.

This will be followed by a practical demonstration showcasing a worked example. An OBIA workflow that encompasses the relevant steps from project set-up to final habitat map production will be demonstrated on-screen. Interested workshop participants will be supplied with a temporary license of the OBIA software eCognition and the relevant data sets to follow the worked example on their own laptops. The freely available (for academic research only) RSOBIA, a toolbar for ArcGIS, will also be introduced and its capacities demonstrated.

The session will close with a panel discussion on the possibilities, challenges and future directions for the application of OBIA to marine acoustic data sets. The panel will then be open to respond to questions from the audience.

**Bringing a personal laptop is recommended but not essential.**



## IMPORTANT DATES

2015

**December 7<sup>th</sup>:** Submission of Abstracts OPENS

2016

**January 31<sup>st</sup>:** Abstract submission CLOSES

**February 19<sup>th</sup>:** Authors notified of abstract acceptance and decision

**February 19<sup>th</sup>:** Registration opens for All Authors

**March 14<sup>th</sup>:** Open Registration – first-come first-served basis.

**May 2<sup>nd</sup>:** OBIA workshop and Ice-breaker Reception.

**May 3<sup>rd</sup>:** Conference Oral and Poster presentations.

**May 4<sup>th</sup>:** Conference Oral, Poster presentations and Conference Dinner.

**May 5<sup>th</sup>:** Conference Oral.

**May 6<sup>th</sup>:** Fieldtrip.

**REGISTRATION** It is envisaged that registration may have to be limited due to conference hall size.

Principal Authors (for both oral and poster presentations) will be allowed early registration (starting 19<sup>th</sup> February) before general registration is opened. For any questions, please email

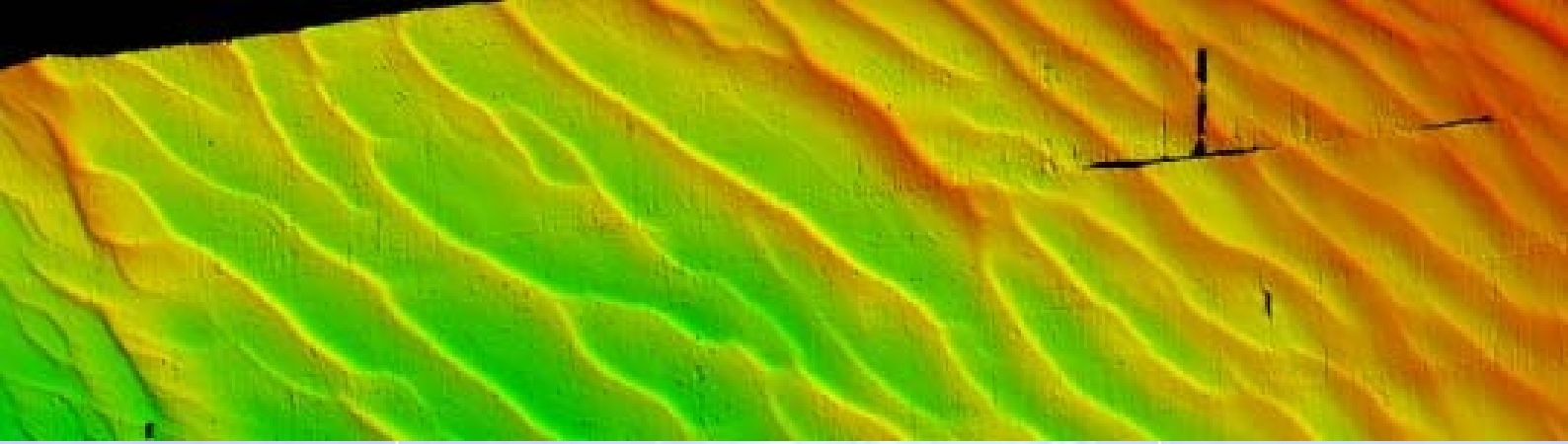
[geohab2016@noc.ac.uk](mailto:geohab2016@noc.ac.uk).

**REGISTRATION FEES** (student prices in parenthesis)

	<b>Early Bird (before March 31<sup>st</sup>)</b>	<b>Late Registration</b>
<b>Delegates</b>	£225 (£175)	£250 (£200)
<b>Workshop</b>	£50 (£45)	£55 (£50)
<b>Field Trip</b>	£60 (£55)	£70 (£60)
<b>Conference Dinner</b>	£75	£85 (latest 15 <sup>th</sup> April)

**STUDENT SUPPORT** Each year the organizing committee of the GeoHab conference awards a small number of travel grants to selected students to attend and present at the conference. The Ron McDowell Bursary scheme is available to PhD, MSc and BSc students and will comprise an amount towards costs of travel, accommodation plus a waiver of the conference and workshop fees. Application deadline is January 31<sup>st</sup>; visit the GeoHab 2016 website for more details.

**CONFERENCE DINNER** This event will take place on board the HMS Warrior, a 40-gun steam-powered armoured frigate built in 1859–61. In Portsmouth harbour, a sumptuous meal will be served on the gun deck between the cannons.



**WEATHER** This is certainly a favourite topic of conversation in the UK, and it is kept lively by the fact that weather is somewhat prone to change throughout the day. Luckily May is probably one of the best months to visit the South of England with daily temperatures between 9-18°C and a lower number of rainy days. Even so a raincoat is always recommended.

**ACCOMMODATION** Delegates are responsible for making their own reservations. Winchester has several large hotels and many guest houses. The organizing committee has negotiated discount rates for some of the larger hotels and details will be on the website in 2016. Hotels in Southampton or Basingstoke are within a short train journey.



**TRANSPORT** Delegates are responsible for arranging their transport to the conference venue. Winchester is conveniently located along the M3 (1:00hr drive from Heathrow or 1:30hrs from Gatwick). Parking in Winchester can be difficult and hotels may charge for parking spaces. It is also easy to reach using public transport from either airport. From Heathrow, National Express bus 203 leaves every ~2hrs and takes ~1:30-2:00hrs to reach Winchester (about £20). From Gatwick, a train can be taken with a change at Clapham Junction (about £40 return). From either airport, a taxi will cost around £80-120. The city is also well connected by train to other English cities and is only a short ride from Southampton which also has a small airport deserving other European cities.





FIELDTRIP Friday May 6<sup>th</sup> 2016, 08:30 - 18:00

Itinerary: Winchester - Stonehenge - Lulworth Cove - New Forest - Winchester

The GeoHab field trip this year will include both one of the wonders of the world and a natural World Heritage Site as well as pleasant views of the country side and traditional delicacies. There will be plenty of interesting geology as well as possible wild-(and not so wild)-life sightings.

### **Stonehenge**

Located near Salisbury, this prehistoric stone circle dates back to ~3000-2000BC. With massive standing sarsens stones up to 4m high and weighing ~ 5 tonnes, Stonehenge remains one of the most famous sites in England. For preservation reasons the stone can no longer be touched, but the addition of a new visitor centre and an audio guide detailing the folklore surrounding the site will provide a peek into Britain's colourful history.

### **Lulworth Cove**

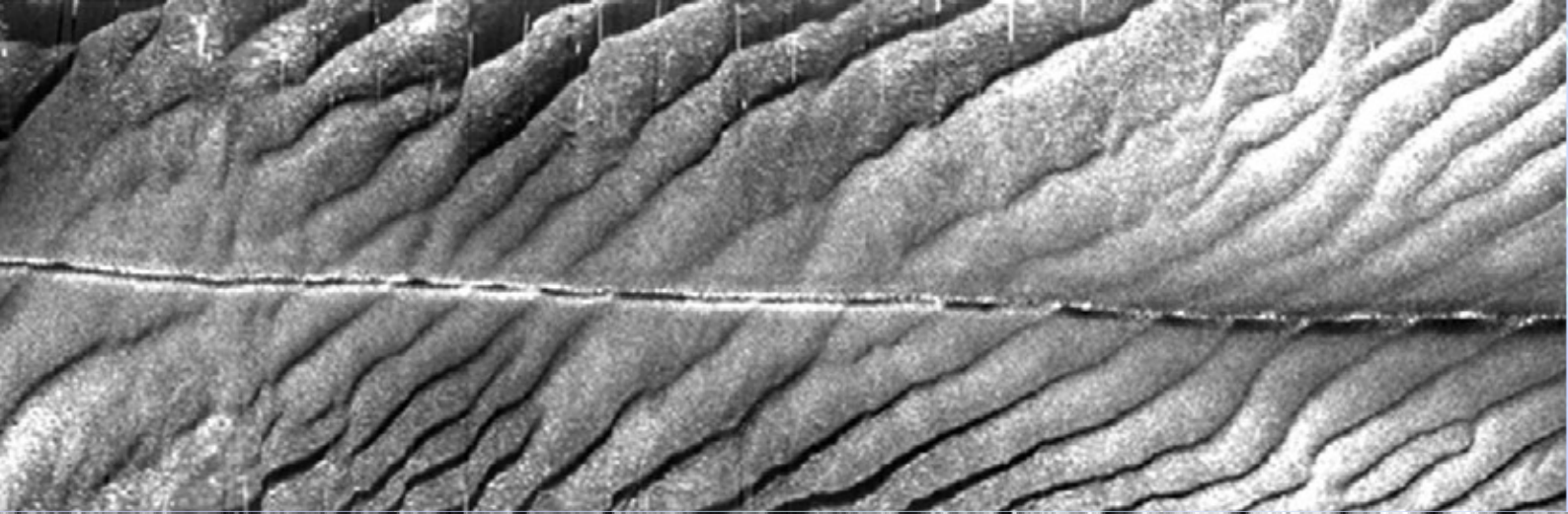
Located along the beautiful Jurassic coast in Dorset, Lulworth Cove was formed through a combination of erosion and weathering of clays and greensands. It is on the beach of this nearly circular bay, that we will stop to enjoy lunch, go on guided walks along the beach to examine (on- and off-shore) habitats and geological formations such as Stair Hole and, if possible, the Petrified Forest. Quaint villages with thatched roof cottages, Neolithic burial mounds and at least one castle will be visible along the drive.

### **New Forest**

On our way back toward Winchester, we will stop in the New Forest, a large expanse of heathland and broadleaved woodland designated as a royal preserve around 1079 by William the Conqueror, first Norman King of England. In addition to a wide range of wildlife, the New Forest is also home to wild ponies, donkeys and freely grazing cattle. We will stop at an old converted train station for a traditional afternoon delicacy of Southwest England; a cream tea.

**Cost:** Before March 31<sup>st</sup> £60 (£55 for students), afterwards if places are still available £70 (£60 for students), inclusive of both lunch and tea. Places will be limited, please book early.





## CONVENERS

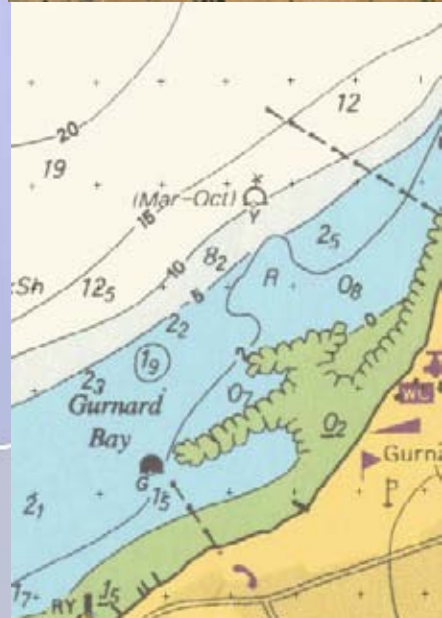
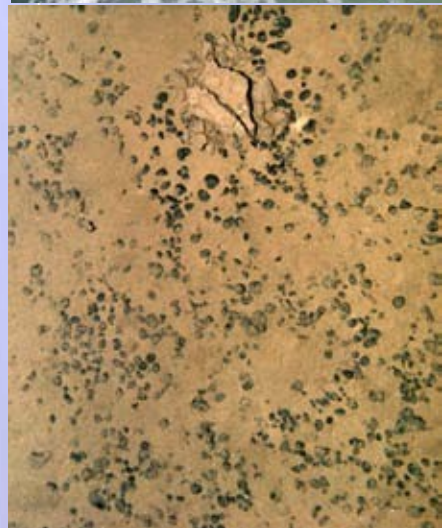
Tim Le Bas (National Oceanography Centre, UK)  
Markus Diesing (Centre for Environment, Fisheries & Aquaculture Science., UK)  
Heather Stewart (British Geological Survey, UK)  
Kerry Howell (University of Plymouth)

## LOCAL ORGANISING COMMITTEE

Veerle Huvenne (National Oceanography Centre, UK)  
Claudio Lo Iacono (National Oceanography Centre, UK)  
Katleen Robert (National Oceanography Centre, UK)  
Leigh Marsh (University of Southampton, UK)  
Ian Folger (National Oceanography Centre, UK)

## INTERNATIONAL SCIENTIFIC COMMITTEE

Vaughn Barry (Geological Survey of Canada, Canada)  
Alex Bastos (Federal University of Esp rito Santo, Brazil)  
Craig Brown (Nova Scotia Community College, Canada) GEOHAB  
2017 Co-chair  
Guy Cochrane (U.S. Geological Survey, USA)  
Markus Diesing (Centre for Environment, Fisheries & Aquaculture  
Science., UK)  
Margaret Dolan (Geological Survey of Norway, Norway)  
Andrea Fiorentino (Geological Survey of Italy-ISPRA, Italy)  
Gary Greene (Moss Landing Marine Laboratories, USA)  
Anthony Grehan (National University of Ireland, Ireland)  
Peter Harris (Geoscience Australia, Australia)  
Daniel Ierodiaconou (Deakin University, Australia)  
Aarno Kotilainen (Geological Survey of Finland, Finland)  
Geoffroy Lamarche (NIWA, New Zealand)  
Tim Le Bas (National Oceanography Centre, UK)  
Vanessa Lucieer (University of Tasmania, Australia)  
Scott Nichol (Geoscience Australia, Australia)  
Alan Stevenson (British Geological Survey, UK)  
Terje Thorsnes (Geological Survey of Norway, Norway)  
Brian Todd (Geological Survey of Canada, Canada) GEOHAB 2017  
Co-chair



Once again generous sponsors are making GeoHab 2016 possible, with already several confirmed. Other sponsorships options remain available; benefits and options are presented on the website. Please contact Tim Le Bas ([tlb@noc.ac.uk](mailto:tlb@noc.ac.uk)) if you wish to have a presence in the exhibition hall and sponsor the event.



KONGSBERG



*caris*





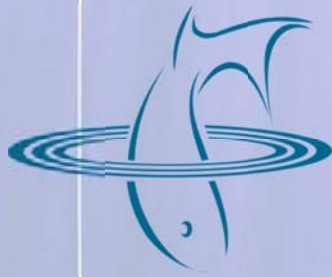
# National Oceanography Centre

NATURAL ENVIRONMENT RESEARCH COUNCIL



# British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL



# Cefas

**EXPLORE**  
**WITH**  
**PLYMOUTH**  
**UNIVERSITY**