



PRESS RELEASE

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British Geologists on Great Barrier Reef Expedition

British Geological Survey staff set sail on the Great Barrier Reef Environmental Changes Expedition (GBREC). As part of this international research effort, fossil coral reefs will be examined to understand how sea-level changed in the past and is likely to change in the future.

This is the first major expedition to recover fossil coral in the Great Barrier Reef area. Scientists from 7 countries around the world have gathered in north Queensland, Australia to unravel the story of sea level change over the last 20 000 years, right back to the last ice age.

The expedition set off on 11th February from Townsville on the survey vessel *Greatship Maya* and, over 6 weeks, will gather information and core samples. Nine staff members of the British Geological Survey (BGS) are part of this expedition, including Dr Carol Cotterill who will be the expedition's Staff Scientist.

The expedition is being funded by The European Consortium for Ocean Research Drilling (ECORD) as part of the Integrated Ocean Drilling Program (IODP) which is made up of scientific funding from the United States, Europe, Japan and other partners including Australia. The IODP is the biggest geoscience programme in the world with an annual research budget of US\$210 million.

Dan Evans, Marine Geologist at BGS and Science Manager for the ECORD Science Operator (ESO) said "During this BGS-led expedition to the Great Barrier Reef, we will core into a 'time capsule' of sediments that holds information on the environmental evolution of the reef since the last glaciation some 20,000 years ago, a time during which global sea level has risen by as much as 120 metres. This information will help modellers who are trying to predict future environmental and sea-level changes."

Coral reefs are excellent indicators of past sea-levels and sea-surface temperatures (SSTs). The Great Barrier Reef is a key location as it is in a tectonically inactive area far away from glaciated regions.

The expedition will take core samples along 5 transects in 3 regions with the aim of determining sea level, SST, biological and geological changes to the Great Barrier reef over the last 20 000 years.

The cores will also be studied to see how the reef ecosystem responded to rapid rises of sea level and changes in climate. Scientists currently believe that there were three such periods of accelerated sea-level rise about 19 000, 13 800, and 11 300 years ago. Gaining deeper insights into those events is especially important to our understanding of how the modern Great Barrier Reef, a World Heritage Site since 1980, will respond to future changes.

Professor John Ludden, BGS Executive Director said "BGS is once again tackling the extreme for the science community, following on from the successful IODP expeditions to the Arctic in 2004, Tahiti in 2005 and New Jersey in 2009. Now, on behalf of the world's scientists, our expertise in coring the sea floor and obtaining critical samples is being used to solve major problems related to climate change."

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Notes for Editors

Further details (plus photos) on the BGS involvement in the Great Barrier Reef Environmental Change Expedition: www.bgs.ac.uk/research/highlights/GBR

Available for interview: Dr Dan Evans, Ocean Research Drilling, BGS

Bob Gatliff, Marine Geoscience, BGS

The British Geological Survey

The British Geological Survey (BGS), a component body of the Natural Environment Research Council (NERC), is the nation's principal supplier of objective, impartial and up-to-date geological expertise and information for decision making for governmental, commercial and individual users. The BGS maintains and develops the nation's understanding of its geology to improve policy making, enhance national wealth and reduce risk. It also collaborates with the national and international scientific community in carrying out research in strategic areas, including energy and natural resources, our vulnerability to environmental change and hazards, and our general knowledge of the Earth system. More about the BGS can be found at www.bgs.ac.uk.

European Consortium for Ocean Research Drilling

The European Consortium for Ocean Research Drilling (ECORD) participates in the IODP through the ECORD Science Operator (ESO). ESO is a consortium of European scientific institutions, including the BGS, which was formed to undertake mission-specific platform operations. More about ECORD, ESO and the Great Barrier Reef Expedition can be found at www.eso.ecord.org.