

TRACES - *Trans-Atlantic Coral Ecosystem Study*

TRACES is a scientific programme to investigate cold-water coral communities found along the continental shelf break and slope, and in association with canyons and seamounts in the North Atlantic Ocean. The success of TRACES relies on scientific cooperation between Canada, the European Union, and the United States.

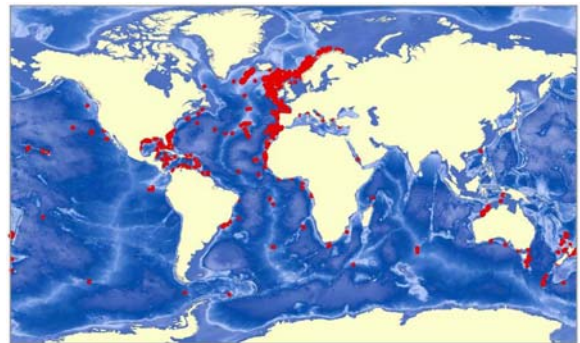
The deep-sea is the last frontier on Earth. Scientific surveys in the deep have revealed new species and even entire ecosystems that were unknown to previous generations. In the last two decades improvements in deep-sea mapping technology and research submersibles have shown that coral ecosystems are not restricted to tropical coral reefs but are found in the deep oceans of the world.

The best developed and most studied cold-water coral ecosystems are in the North Atlantic but they have never been studied and compared across the ocean basin.

TRACES will develop the first coherent plan to study cold-water coral ecosystems across an ocean basin and lay the foundations for an international research programme beginning 2010.

Why Now?

- Intense research activity over the last ten years has discovered and mapped many Atlantic cold-water coral ecosystems.
- We can now study the links between cold-water coral ecosystems using new genetic approaches.
- We can now study past ocean climate using new high resolution analyses of coral skeletons.
- These ecosystems are threatened by deep-water trawling and ocean acidification.
- Strategies based on sound science are needed now to conserve these fragile and diverse ecosystems.



Global distribution of reef framework-forming cold-water corals showing concentration of records in the North Atlantic Ocean. From: Roberts et al. (2006) *Science* 312: 543



A large Atlantic black coral. Recent work shows that these black corals may live over 2000 years. Photo: AWI & Ifremer (2003)

How will TRACES work?

- Early 2008 cold-water coral researchers meet to outline the TRACES Science Plan at North American (Wilmington, N.C., U.S.A.) and European (Faro, Portugal) workshops.
- Science Plan completed by end 2008.
- Discussions with Canadian, European and U.S. marine science funding agencies to support an integrated research programme.
- First TRACES projects apply for research funds in 2009.
- Potential preliminary TRACES cruise time summer 2009.
- Research begins 2010 onwards.

Benefits

- Better understanding of North Atlantic climate history and ecology using cold-water coral records.
- Better understanding genetic and 'biodiversity' links among Atlantic coral ecosystems used to develop sound long-term conservation management policies.
- Develop expertise and international partnerships between Canada, E.C. and U.S.
- Raise public understanding and awareness of these hidden coral worlds.

TRACES programme development is supported by the Royal Society of Edinburgh and a Marie Curie international fellowship grant from the European Commission. For more information see www.lophelia.org/traces

Contact Dr J. Murray Roberts (robertsjm@uncw.edu, Tel. +1-910-799-7926)