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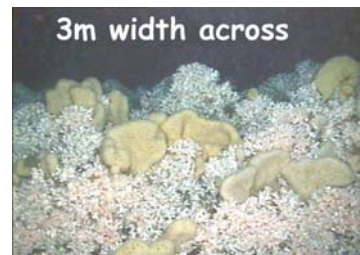


Canada's Deep-Water Corals

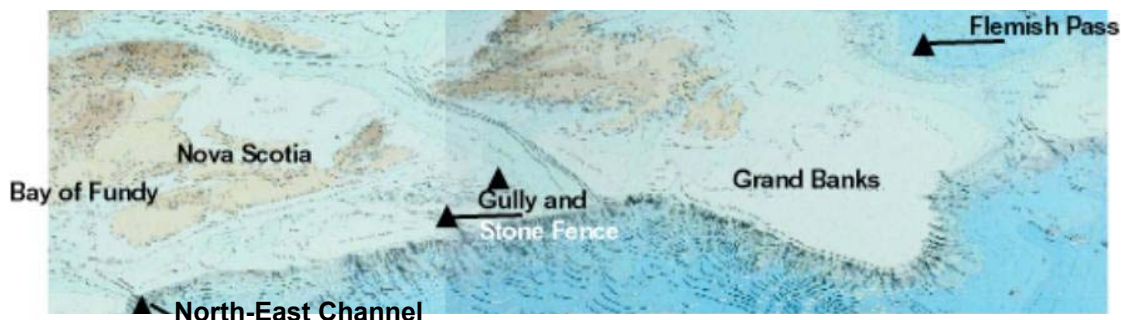


Synopsis: The interface between environmental biology and conservation biodiversity is an exciting and rapidly growing area of interdisciplinary science, which utilizes cross-disciplinary methods to understand complex environmental and conservation biodiversity issues. At Dalhousie University, in association with national and international affiliates, we are developing innovative research strategies that reveal the interconnectedness of science, human activities, and the biosphere as it relates to deep-water habitats.

There is growing realization that deep-water coral reef environments are habitat to a rich collection of flora and fauna that may form an integrated community providing habitats for both vertebrate and invertebrate growth and reproduction. Consequently, there is a need to better understand the reproduction and recruitment of these corals, including their population and community distributions and what if any role these corals contribute to refuge habitats for juvenile fish and associated species as do other reef forming corals.



The shelf edge habitat on the southern Grand Banks and Flemish Pass (located in Canada) are extremely productive areas that are thought to provide critical habitat for species such as redfish. Concerns over deep-water bottom draggers used in the fishing industry devastating these reef habitats has prompted a consortium of European, US, and Canadian researchers to begin studying these ecosystems along the Atlantic Margin.



Map of Canadian Atlantic Margin depicting deep-water coral sites currently studied.

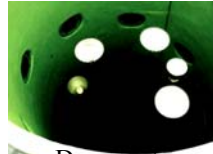


Projects: Four major areas are currently being pursued. These include 1) paleoclimate, 2) chemical and biological studies, 3) benthic ecology and 4) public outreach. In addition, deep-water coral symposiums will be promoted to help describe, disseminate, and conserve the existence of these poorly studied corals, as was held in Halifax in August 2000.

1) High resolution paleo-climate studies using the corals as proxies use the annual layers or rings added by the corals each year as a high resolution record of past oceanographic changes.



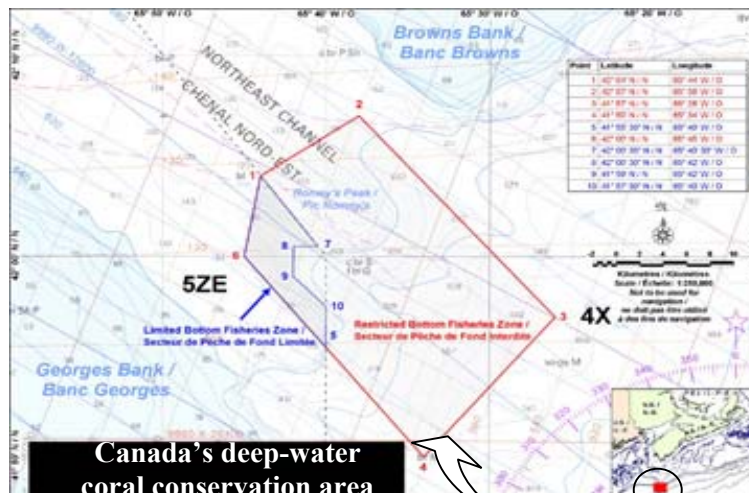
Chiller Systems



Deep-water Tower Tanks

2) Dalhousie University has a seawater facility that is similar to the Monterey Bay Aquarium in California. These facilities enable complex chemical, biological, and behaviour type studies in near “*in-situ*” habitats.

3) Studies of community ecology, recruitment, and survival of deep-water corals with vertebrate and invertebrate interactions with respect to fisheries impacts are currently being monitored. To facilitate this process, Canada has established a coral conservation area within the Northeast Channel (see below). The conservation area is approximately 424 km² and is located approximately 65°40'W/O x 42°00'N/N, an area identified by NAFO divisions 5ZE and 4X.



Canada's deep-water coral conservation area

4) There is requirement for public outreach. We are currently pursuing various options to promote and disseminate coral ecology to local environmental, fishing, and education groups.

Dalhousie University and Affiliates:

- Dalhousie University, McMaster University, University of Quebec (Montreal), Memorial University, Glasgow University, Tubingen University.
- Government organizations: Department of Fish and Oceans (Can), Bedford Institute of Oceanography (Can), Geological Survey (Can), Parks Canada.
- Non-government organizations: Canadian Offshore Habitats (COHPS), Monterey Bay Aquarium (USA), Ecology Action Centre.