

Canadian Contributions to NEREIDA 2009-2010

NAFO PotEntial VulneRable Marine Ecosystems-Impacts of Deep-seA Fisheries



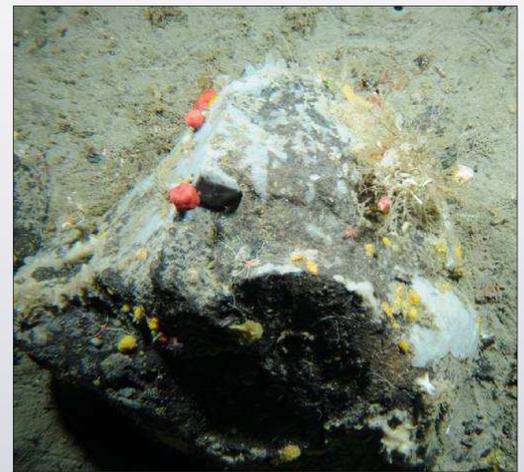
Benthic Surveys Using Underwater Cameras

Comparing Research Vessel Catches of Corals and Sponges with *In situ* Abundance in the Fished Area of the NRA

NAFO has identified areas of significant concentrations of corals and sponges in the fished area of the NRA through analysis of research vessel bycatch data from both Canada and the EU. However trawls are not the optimal sampler of corals and sponge and little is known about the catchability and indirect damage of the different gear types on the different species on different bottom types. The CCGS Hudson, using the NRCan 4K Camera and CAMPOD conducted video surveys on Orphan Knoll, Flemish Pass and Beothuk Knoll in areas where research vessel bycatch data are available. These data will be used to address questions of catchability and indirect effects of fishing. In some cases where trawl marks can be linked to a specific survey, it may be possible to examine recoverability.

Beothuk Knoll

Two habitat types were found on the top of Beothuk Knoll. The upper photo indicates the flat featureless bottom which was most prevalent. The lower photo shows rock patches that were scattered throughout. These rocks were colonized by a wide variety of species and the rock habitat appeared to have higher species diversity. In the video there are many images of trawl door marks over the surfaces. Trawl damage was evident as overturned rocks and boulders and as dead gorgonian stalks. In some areas rocks seemed to be piled up together. The NAFO fishing footprint indicates fishing over the top of the knoll.



The left photo shows a rock turned on its side exposing the undersurface with a gouging mark in the sediment adjacent to it, presumably caused by the trawl gear. The right photo shows the normal orientation of rocks with the upper surfaces colonized by sponge, soft coral and hydrozoans.

First Description of Corals and Sponges Outside of the Fished Area of the NRA

There are little data on the corals, sponges and other benthic organisms that live in unfished areas of the NRA. In 2010 CCGS Hudson and ROPOS targeted the steep southern and eastern slopes of Flemish Cap, and the closed area of Orphan Knoll to collect video imagery and live specimens of the benthic fauna to depths of 3,000 m. Included amongst the live specimens were a number of new records to the area and some which we believe are new species to science.

In 2008 the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) adopted the scientific criteria (Decision IX/20) for identifying ecologically or biologically significant marine areas (EBSAs) in need of protection (Annex I). The criteria for identification of EBSAs are based on seven attributes:

1. Uniqueness or rarity
2. Special importance for life history of species
3. Importance for threatened, endangered or declining species and/or habitats
4. Vulnerability, fragility, sensitivity, slow recovery
5. Biological productivity
6. Biological diversity
7. Naturalness

Data collected on this mission includes a number of species that meet these criteria and will allow for future consideration of EBSAs.

New Discoveries



Crateromorpha sp.



Chrysogorgia sp. nov. (?)



Ellisellidae sp. nov. (?)



Farrea sp. nov. (?)

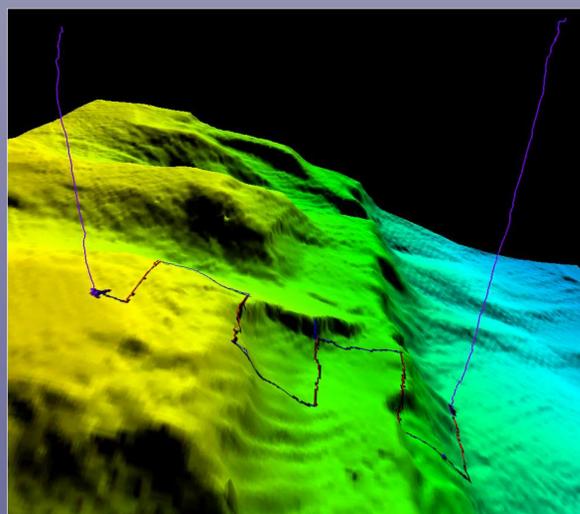
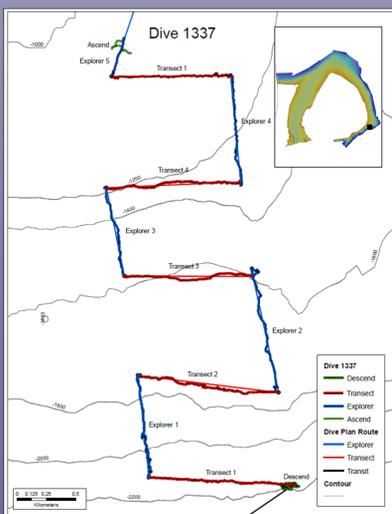


Isididae sp. nov. (?)



Narella laxa

2010 Hudson Cruise – ROPOS Dive Track 1337



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