

Climate change and cold-water corals

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Cold-water corals are diverse and abundant in the Newfoundland and Labrador region, where more than 30 species have already been recorded, and this number is likely to increase with further research. Some of them can be hundreds or thousands years old, and might have slow growth rates. They can form habitat for other species, but are vulnerable to several anthropogenic activities including fisheries, mining, and oil and gas activities. They are also threatened by climate change, although it is not clear yet at which extent it will affect them. Increasing water temperature and ocean acidification are the two factors most likely to affect these organisms.

Cold-water coral species are usually restricted to narrow temperature ranges, being sensitive to changes in water temperature. For instance, recent studies have shown that increased water temperature can lead to an increased body metabolism and a change in food requirements. Similarly, the other factor expected to have an effect on cold-water corals is ocean acidification, which is predicted to change the carbonate chemistry of the oceans. Most cold-water corals have a calcareous skeleton entirely or partially composed of calcium carbonate (calcite or aragonite). Therefore, a decrease in the water pH is one of the main concerns regarding organisms bearing calcareous structures.

The high diversity and abundance of cold-water corals in the Newfoundland and Labrador region make these organisms an important component in the ecosystem. Therefore, the impact of climate change on cold-water coral communities can have broader consequences. More laboratory and in situ studies on the influence of environmental factors on these organisms are necessary in order to better understand how environmental changes might affect them in the Newfoundland and Labrador region.