

Announcement iAtlantic Online Event

Date: 19 February 2021

Time: 15:00-16:00 SAST

Are cold-water coral reefs canaries in the coal mine of climate change, and what can we do about ? by Prof J Murray Roberts (University of Edinburgh, United Kingdom)

Over the last 20 years we've seen an exponential increase in our understanding of cold-water coral habitats and just how important they are to a whole range of ecosystem functions from habitat provision through to nutrient recycling. Over the same period it's become clear that ocean conditions are changing at rates faster than at any point in geological history. The few species of cold-water coral that form deep-water reef frameworks build their skeletons from aragonite, a mineral form of calcium carbonate particularly vulnerable to ocean acidification. Since cold-water coral reefs grow in seawater already close to the point aragonite dissolves these coral skeletons are very vulnerable to the rapid changes in carbonate chemistry we see spreading across the oceans of the world. Quite a few studies have now explored the effects of ocean acidification on cold-water corals but fewer have looked at the combined effects of other global changes – notably temperature increase or deoxygenation, and very few have looked at the implications of these changes on the dead coral frameworks that are the foundations of cold-water coral reefs. Our research has shown that the dead coral foundations of cold-water corals fundamentally altered by ocean acidification. The skeletons become porous, brittle with symptoms much like osteoporosis in humans. Given the very long time periods any CO₂ emission reduction targets will take to reach, it's vital we do all we can to manage other pressures and look to ensure cold-water corals in climate refugia are fully protected.

Joining instructions:

Zoom webinar link: <https://us02web.zoom.us/j/82272118509>

Webinar ID: 822 7211 8509

International dial-in numbers available: <https://us02web.zoom.us/u/kbiTQFpilc>

About the presenter: Murray Roberts is Professor of Marine Biology at the University of Edinburgh's School of GeoSciences. He leads the Changing Oceans research group and co-ordinates the European ATLAS and iAtlantic projects. His previous roles include Reader and then Professor of Marine Biology and Director of the Centre for Marine Biodiversity & Biotechnology at Heriot-Watt University in Edinburgh (2009-16) where he co-ordinated the development of the Lyell Centre (2012-15). Before working in Edinburgh, Murray was based at the Scottish Association for Marine Science (1997-2009) with a period as a Marie Curie Fellow at the Center for Marine Science, University North Carolina Wilmington in the USA (2007-09). Murray studied Biology at the University of York before completing a PhD at the University of Glasgow examining nitrogen cycling in the *Anemonia viridis* symbiosis. Since 1997 his work on cold-water corals and deep-sea biology has taken him to sites off the UK, Norway, Ireland and the SE United States. Murray is senior author of 'Cold-water Corals', the first book covering the biology and geology of these important deep-sea habitats, a contributing author to the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report and co-lead editor of a 2014 United Nations Convention on Biological Diversity report on ocean acidification. He is a Fellow of the Royal Society of Biology and holds an honorary position at the University of North Carolina Wilmington, USA. He has led or participated in 23 offshore research cruises. For a list of his publications, see [Edinburgh Research Explorer](#)

The iAtlantic Project is a multidisciplinary research programme seeking to assess the health of deep-sea and open-ocean ecosystems across the full span of the Atlantic Ocean. For more on the iAtlantic Project, please visit <http://www.iatlantic.eu/>