



Preliminary results from seamounts of the proposed Balleny Seamount Chain in the Tasman Sea, offshore Eastern Australia

Joanne Whittaker (1), Rebecca Carey (1), Martin Jutzeler (1), Karin Orth (1), Simon Williams (2), Maria Seton (2), Amanda Thran (2), Sian Tooze (1), Thomas Schaap (1), Lena O'Toole (1), Fionnula Campbell (1), Rebecca Formanek (1), Stephanie Morrish (1), Zali Potts (1), Emily Fewster (1), and Chris Meagher (1)

(1) University of Tasmania, Hobart, Australia, (2) University of Sydney, Sydney, Australia

The Balleny hotspot, currently located offshore Eastern Antarctica beneath the Balleny Islands, has been implicated in the breakup between Tasmania and Cape Adare, Antarctica. The hotspot is also thought to have formed a chain of seamounts in the Tasman Sea offshore Eastern Australia. However, concrete evidence for such an age-progressive seamount chain related to the Balleny hotspot have remained sparse. During voyage IN2018_V08, 27th Dec 2018 to 10th Jan, 2019, on the Australian Marine National Facility Vessel RV Investigator we obtained multibeam bathymetry, gravity profiles, and dredged rock and sediment samples from 13 of the seamounts in the proposed Balleny seamount chain. Here, we present preliminary results of the voyage, including rock interpretations, and a preliminary analysis of the morphology of the seamounts, many of which were flat-topped. We are confident that a program of geochronology and geochemistry, combined with morphological analysis of the seamounts will enable us to address questions around the evolution of the seamounts from the Balleny hotspot or other mechanisms, and also shed light on the subsidence history of the southern Tasman Sea region, with potential implications for understanding the evolution of the Tasman Gateway and onset of Antarctic Circumpolar Current type flow through this gateway.