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TITLE: Habitat-forming cold-water corals show affinity for seamounts in the New Zealand region

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ABSTRACT:

MEPS Marine Ecology Progress Series Contact the journal Facebook Twitter RSS Mailing List Subscribe to our mailing list via Mailchimp HomeLatest VolumeAbout the JournalEditorsTheme Sections MEPS 430:1-22 (2011) - DOI: https://doi.org/10.3354/meps09164 FEATURE ARTICLE Habitat-forming cold-water corals show affinity for seamounts in the New Zealand region Dianne M. Tracey1,*, Ashley A. Rowden1, Kevin A. Mackay1, Tanya Compton2 1National Institute of Water and Atmospheric Research, Wellington, New Zealand 2National Institute of Water and Atmospheric Research, Hamilton, New Zealand *Email: d.tracey@niwa.co.nz ABSTRACT: Determining the distribution of habitat-forming scleractinian corals in the New Zealand region is necessary in order to understand the ecological -significance of these taxa and the likely impact of anthropogenic activities on their persistence. Historical records from early publications, research trawl surveys, commercial fishing bycatch and recent biodiversity surveys were compiled for the habitat-forming coral species Madrepora oculata, Solenosmilia variabilis, Goniocorella dumosa, Enallopsammia rostrata and Oculina virgosa. These data were used to describe the observed depth, geographic distribution and geomorphic habitat associations of the study corals in the region. A boosted regression trees analysis was also used to identify which of 11 environmental variables best describe the distribution of the 5 species across the New Zealand -region, and to predict their spatial distribution. The contribution of the environmental variables differed greatly between species, but consistently identified depth and seamount occurrence as important factors de-scribing observed coral species distribution. The models identified that M. oculata, S. variabilis and E. rostrata occurred in deep waters (>1000 m) where seabed slopes were steep, tidal current and orbital velocities were slow, sea surface primary productivity was low, and where seamounts were generally present. By contrast, G. dumosa and O. virgosa were found in relatively shallower waters, where sea surface primary productivity was high and tidal -current speeds were generally fast. Spatial predictions were consistent with the recorded observations and identified that all species, apart from O. virgosa, were distributed throughout the region and were found -primarily between ~200 and 2000 m. KEY WORDS: Deep sea · Scleractinia · Stony corals · Cold-water corals · Distribution · Habitat · Predictive modelling · New Zealand Full text in pdf format Information about this Feature Article Supplementary material NextCite this article as: Tracey DM, Rowden AA, Mackay KA, Compton T (2011) Habitat-forming cold-water corals show affinity for seamounts in the New Zealand region. Mar Ecol Prog Ser 430:1-22. https://doi.org/10.3354/meps09164Export citation RSS - Facebook - Tweet - linkedIn Cited by Published in MEPS Vol. 430. Online publication date: May 26, 2011 Print ISSN: 0171-8630; Online ISSN: 1616-1599 

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