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PII: S0967-0637(16)30460-5
DOI: https://doi.org/10.1016/j.dsr.2018.03.008
Reference: DSRI2890

To appear in: *Deep-Sea Research Part I*

Received date: 28 December 2016
Revised date: 6 February 2018
Accepted date: 15 March 2018

Cite this article as: Leissing Frederick, Ruben Escribano, Carmen E. Morales, Samuel Hormazabal and Johanna Medellín-Mora, Mesozooplankton respiration and community structure in a seamount region of the eastern South Pacific, *Deep-Sea Research Part I,* https://doi.org/10.1016/j.dsr.2018.03.008

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Abstract

Seamounts in the Juan Fernandez Ridge, as well as in other seamount regions in the eastern South Pacific and in the world oceans, remain poorly studied ecosystems in terms of structure and functioning. Here, community respiration by epipelagic mesozooplankton in three seamounts of the Juan Fernandez Ridge, including the O`Higgins Seamount close to the coastal upwelling zone and two oceanic seamounts near the Juan Fernandez Archipelago (~33°S-78°W), was assessed. Oxygen consumption by mixed assemblages was estimated using continuous measurements of dissolved oxygen concentration under controlled temperature during onboard, short-term incubations (2-4 h). Mesozooplankton composition was analyzed with a ZooScan device and expressed in terms of community normalized size spectra, and taxa and size diversity (Shannon-Wiener index). Carbon-specific community respiration rates in the upper 100 m layer were in the range of 0.3-1.9 mg O_2 m^{-2} d^{-1}, indicating that up to 3.1% of the mesozooplankton biomass can be respired on a daily basis. The mesozooplankton community was dominated by small-size copepods but the proportions