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TITLE: Megafauna community structure and trophic relationships at the recently discovered Concepción Methane Seep Area, Chile, 36°S

AUTHOR: ['Javier Sellanes', 'Eduardo Quiroga', 'Carlos Neira']

ABSTRACT:

Abstract Sellanes, J., Quiroga, E., and Neira, C. 2008. Megafauna community structure and trophic relationships at the recently discovered Concepción Methane Seep Area, Chile, 36°S. ? ICES Journal of Marine Science, 65: 1102-1111. The fauna, community composition, and trophic support of the newly discovered Concepción Methane Seep Area (CMSA) are compared with those at a nearby non-seep control. The assemblage of chemosymbiotic bivalves is defined by eight species, including the families Lucinidae, Thyasiridae, Solemyidae, and Vesicomidae. Seep polychaetes are represented by *Lamellibrachia* sp. and two commensal species of the vesicomid *Calypotgena gallardoi*. Although taxonomic analysis is still under way, most of the chemosymbiotic species seem to be endemics. The CMSA is a hotspot for non-seep benthic megafauna too; 101 taxa were present, but most of them are colonists or vagrants (i.e. not endemics of methane seeps). Isotope analysis supported the belief that non-symbiont-bearing species utilize photosynthetically fixed carbon, because they were isotopically distinct from the chemosymbiotic bivalve species present. It is our opinion that, at this site, which underlies one of the most productive coastal upwelling regions of the world, spatial heterogeneity and the availability of hard substratum, generated by the presence of authigenic carbonate crusts, are more important factors in attracting non-seep fauna than the availability of locally produced chemosynthetic food.

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