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PII: S0967-0637(17)30299-6

DOI: https://doi.org/10.1016/j.dsr.2018.06.008

Reference: **DSRI2925**

To appear in: Deep-Sea Research Part I

Received date: 26 September 2017

Revised date: 11 June 2018 Accepted date: 18 June 2018

Cite this article as: Neus Campanyà-Llovet and Paul V.R. Snelgrove, Effects of temporal variation in food sources on infaunal community structure of chemosynthetic and non-chemosynthetic environments in Barkley Hydrates, Columbia. Canada, Deep-Sea **British** Research Part I. https://doi.org/10.1016/j.dsr.2018.06.008

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ACCEPTED MANUSCRIPT

Effects of temporal variation in food sources on infaunal community structure of chemosynthetic and non-chemosynthetic environments in Barkley Hydrates, British Columbia, Canada

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Abstract

Increasing evidence points to greater temporal variation in deep-sea ecosystems than previously thought. In cold seeps, most available evidence focuses on successional stages of megafauna, with few studies on temporal variability in infaunal communities. We present a temporal study of infaunal communities and sedimentary organic matter characteristics from Barkley Hydrates outcrop, a chemosynthetic environment that receives organic matter from chemosynthetic and photosynthetic (phytodetritus) origins. In order to help interpret results from the outcrop, we contrast temporal variability in outcrop communities during two sampling periods with corresponding variation in an adjacent background sedimentary habitat (both habitats at ~900 m depth, offshore of British Columbia, Canada), that receives food input only from a photosynthetic source (phytodetritus). Comparisons with

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