

Interactive comment on “Oxygen isotope ratios in the shell of *Mytilus edulis*: archives of glacier meltwater in Greenland?” by E. A. A. Versteegh et al.

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This study on the blue mussel from Godthabsfjord (W. Greenland) investigates the potential of the oxygen isotope composition of the shell as a proxy for oxygen isotope composition of water – which in these fjords are predominantly a function of mixing between marine and glacial water. They confirm that *M. edulis* precipitates its shell in equilibrium with ambient water, that the full range of seasonal water isotope composition is reflected in the shells except for very close to the glacier or during the coldest and warmest months. Overall it is a nice study confirming other similar type studies, but done with thought and care. I have only a few comments for clarification:

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In section 2.6 I wasn't sure how seasonal values were actually compared, unless it was a wiggle matched relationship? In section 4.3, has the seasonal range in temperature been taken into account? Further work on midden shells should take care that the shells are collected from similar parts of the fjord so as not to add in geographical uncertainties between signals from different parts of the fjords.

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