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Stable isotopic compositions of the Antarctic bivalve in Maxwell Bay, King George Island, Antarctica: Implications for meltwater input changes

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An Antarctic clam (*Laternula elliptica*) which was living in shallow marine environment at the water depth of about 25 m, was collected in situ in July, 2002. Oxygen isotopic compositions clearly show six seasonal variations from 1997 to 2002. Oxygen isotopic contents show enriched values of about 3.7 ‰ (PDB) during winter and depleted values up to about 0.8 ‰Ċonsidering the temperature range of 2 to 3 ºC between summer and winter, this isotopic difference between summer and winter cannot be explained by temperature variations. This suggests that oxygen isotopic variations should reflect the salinity changes that were influenced by the changes of meltwater input. Especially from late 2001 to 2003, several abrupt events of low salinity can be detected from depleted oxygen isotopic values up to -2 ‰ which coincides with instrumental measured salinity values nearby. This low salinity should result from the increase in meltwater input. Therefore, this Antarctic bivalve can be used as a good proxy to reconstruct meltwater pulses in the past.