



Stable isotope and trace element geochemistry of *Ostrea angasi* and *Mytilus galloprovincialis*

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Many studies have shown that useful records of palaeoclimate and environmental change can be interpreted from the geochemical records of bivalve shells. However, as the studies progress, it is becoming apparent that the shell geochemistry can be influenced by a complex system of both environmental and biological factors, all of which must be taken into account when using the shells' chemical signatures as environmental proxies.

This work examines the feasibility of using the stable isotope ($\delta^{18}\text{O}$ and $\delta^{13}\text{C}$) and trace element ratios (Mg/Ca, Sr/Ca, Ba/Ca) of the shells of two different species of estuarine bivalves as records of the temperature and salinity of their ambient aquatic environment. The species analysed were the oyster *Ostrea angasi*, and the mussel *Mytilus galloprovincialis*. The shells were taken from monitoring experiments conducted over a period of 12 months at two different field sites.

Preliminary results suggest that seasonal variations are reflected in both the stable isotope and trace element profiles. However, inconsistencies in the Mg/Ca and Ba/Ca clearly indicate that the trace element ratios are influenced by additional factors and environmental variability does not entirely account for the fluctuations in these records.