



*Supplement of*

**Shell chemistry of the boreal Campanian bivalve *Rastellum diluvianum* (Linnaeus, 1767) reveals temperature seasonality, growth rates and life cycle of an extinct Cretaceous oyster**

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## Supplement files

All supplementary files are stored in the open access online database Zenodo and can be accessed using the following link: <https://doi.org/10.5281/zenodo.3699542>

**S1:** High resolution (6400 dpi) scans of cross sections through the 12 shells of *Rastellum diluvianum* used in this study.

**S2:** Compilation of  $\mu$ XRF maps of cross sections through the 12 shells of *Rastellum diluvianum* used in this study.

**S3:** Compilation of XRF line scans measured through the foliated calcite of *Rastellum diluvianum* shells.

**S4:** Compilation of LA-ICP-MS data collected within the context of this study.

**S5:** Compilation of IRMS data used in this study.

**S6:** Composite figures of XRF linescan data through the shells of *Rastellum diluvianum*.

**S7:** Source code of the bivalve growth model adapted from Judd et al. (2018) including temperature equations for calcite.

**S8:** Compilation of strontium isotope data and ages used in this study.

**S9:** Compilation of the results from growth modelling on 5 *Rastellum diluvianum* shells.

**S10:** Compilation figures of proxy record data plotted on time axis for all 5 shells for which modelling was carried out.

**S11:** Plot of ontogenetic trends in  $\delta^{13}\text{C}$  and Li/Ca proxies including statistics on the spread of the slopes of these trends.

**S12:** Data on trends in  $\delta^{13}\text{C}$  and Li/Ca.

**S13:** Data used to create seasonality crossplots shown in **Fig. 7**.

**S14:** Data on statistics of the growth rates, seasonality and spawning season of all 5 bivalves for which modelling was done.