



## **A multi-axial growth analysis of stable isotopes in modern *Saxidomus gigantea*: sclerochronological implications**

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Stable-isotope ratios of two modern *Saxidomus gigantea* specimens from Namu, British Columbia are presented to show intra- and inter-specimen isotopic variation. Isotopic profiles ( $\delta^{13}\text{C}_{shell}$ ,  $\delta^{18}\text{O}_{shell}$ ) were generated along the axis of maximum growth. The profiles show that analogous seasonal variation is recorded in  $\delta^{18}\text{O}_{shell}$  however, significant variability is recorded in  $\delta^{13}\text{C}_{shell}$ . We suggest this is caused by differences in metabolic activity between individuals. Intra-shell variability along a growth horizon shows good reproducibility in  $\delta^{13}\text{C}_{shell}$ , but significant variability in  $\delta^{18}\text{O}_{shell}$ , especially at the sinistral margin. A multi-axial growth analysis generated several profiles from a single valve. Similar seasonal variations are recorded in  $\delta^{18}\text{O}_{shell}$  along all axes.  $\delta^{13}\text{C}_{shell}$  show significantly less co-variation, possibly related to internal metabolic activity. This study highlights that  $\delta^{18}\text{O}_{shell}$  profiles generated from any portion of the shell can be used to evaluate seasonal fluctuations, and may be excellent to evaluate types and rates of shell growth.