

Interactive comment on “Growth increment periodicity in the shell of the razor clam *Ensis directus* using stable isotopes as a method to validate age” by J. F. M. F. Cardoso et al.

D. Goodwin (Referee)

goodwind@denison.edu

Received and published: 9 May 2013

This manuscript reports on age determination of the razor clam *Ensis directus* using periodic growth lines that were validated using oxygen isotope variation. The study was carefully designed and the methods were appropriate. Both the results and their interpretation are reasonable. The authors draw several interesting conclusions regarding the timing of intra- and inter-annual growth that will of interest to a broad range of scientists. I recommend this manuscript be published pending minor revisions. Most of my comments below are minor and can easily be addressed.

4305-15: What is meant by "role"? Please clarify.

C1738

4307-23: This sounds like shell height to me.

4309-11: Is there any literature that discussed equilibrium in this taxon? If so, cite it here.

4310-4: "Nearby" is not specific enough. Please include a map showing the collection sites.

Can the authors speculate on the degree that temperature and salinity vary over the distance between the three shell collecting localities?

4311-5: Why is the linear version used here while Dettman's alpha version is used earlier? It seems to me this explanation could be a bit clearer. Perhaps present it all at once.

I really liked the discussion of the timing of shell deposition with respect to reproduction. Similarly, the relationship of oxygen and carbon isotopes is certainly worth of additional study.

Given that age can apparently be reliably determined from external growth lines, would it be possible to collect more specimens from the on-shore/off-shore transect and construct a larger number of growth curves? Having a larger data set would strengthen that argument regarding inter-annual growth rate differences perpendicular to shore.

Interactive comment on Biogeosciences Discuss., 10, 4303, 2013.

C1739