

Interactive comment on “Upwellings mitigated Plio–Pleistocene heat stress for reef corals on the Florida platform (USA)” by T. C. Brachert et al.

J. Cortés (Referee)

jorge.cortes@ucr.ac.cr

Received and published: 4 January 2016

Journal: BG Title: Upwellings mitigated Plio-Pleistocene heat stress for reef corals on the Florida platform (USA) Author(s): T.C. Brachert et al. MS No.: bg-2015-474

The paper “Upwellings mitigated Plio-Pleistocene heat stress for reef corals on the Florida platform (USA)” analyzed fossil corals from Florida to reconstruct the environmental conditions during the Plio-Pleistocene. The idea is very good and the analyses were appropriate, but there two flaws in the paper. The first one was the sample size used which was small, especially of the oldest coral, only one colony was analyzed. The second problem was the mixture of species in the analyses, they used species of three different genera. Most of the samples were of the genus *Solenastrea*, which I

C8802

assume are the same species, but it is not specified in the text. The descriptive part of the work is good but the overarching conclusion that upwellings mitigated heat stress is stretching the results a bit too far.

The disconnection between the isotopic chronology and the density banding should be explored more. I personally have not seen that. I suggest that people more experience on the topic be consulted, for example Juan Pablo Carricart of UNAM, México carricart@cmarl.unam.mx and Peter K. Swart of the University of Miami, Florida pswart@rsmas.miami.edu. Dr. Swart also knows the Florida area very well.

The tables are hard to follow. Table 1 orders the specimens by age, but the following tables order them by sample code. I suggest that Table 1 include the genera after each code and that the same order be used all the time.

Figure 2 explains many important observations about the possible diagenesis or not of the samples, but the images are not very good. In some of them it is impossible to distinguish what is being pointed out.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/12/C8802/2016/bgd-12-C8802-2016-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 12, 16553, 2015.

C8803