

## The series of precious coral samples collected from off the southwest coast of Kochi Prefecture: one potential thousand-scale proxy for understanding subsurface ocean conditions.

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Radiocarbon dating was performed for various types of precious coral colony fragments collected from the Ashizuri fishing field, around 100 to 200 m deep, off the southwest coast of Kochi Prefecture as a first step for understanding the historical background of one of the largest precious coral fishing fields in Japan. The  $^{14}\text{C}$  ages of the 55 specimens range from cal BC 5617–5411 to the modern and are broadly distributed over the past ~7500 years<sup>[1]</sup>. Most of the measured samples were older than 1871, when fishing activities of precious corals began in Kochi Prefecture. These results suggest that most of the deaths of the precious coral colonies were due to natural causes, such as natural mortality, predation, or various forms of environmental degradation, and not strictly related to destructive fishing practices. Additionally, precious corals started inhabiting the study area at least ~7500 years ago, when the marine condition became similar to that of today after the Last Glacial Period. The series of the measured samples have the potential to provide thousand-scale records of environmental conditions at deep waters. Preliminary measurements of Mg, Sr, S, Ba,  $\delta^{13}\text{C}$ , and  $\delta^{18}\text{O}$  are underway by following previous studies<sup>[2, 3, 4, 5]</sup>.

<sup>[1]</sup> Okumura et al. (2020) Radiocarbon, DOI:10.1017/RDC.2020.114

<sup>[2]</sup> Suzuki et al. (2010) In: A Biohistory of Precious corals –Scientific, Cultural and Historical Perspective, pp. 61-82.

<sup>[3]</sup> Tamenori et al. (2014) Journal of Structural Biology, 186 (2), 214-223.

<sup>[4]</sup> Yoshimura et al. (2015) Biogeoscience Discussions, 12, 413-444.

<sup>[5]</sup> Vielzeuf et al. (2013) Chemical Geology, 335, 13-27.

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