

Recent seawater pH decline recorded in coral *Porites* from the Maldives

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Boron isotopes and B/Ca ratios of coral *Porites* skeletons are proxies of calcification site fluid carbonate chemistry. Based on calibration studies, the proxy data have successfully been applied to reconstruct seawater pH and dissolve inorganic carbon (DIC) in the past, although the results were mostly from the Pacific region. However, local hydrological condition (e.g., river input, upwelling, downwelling) can impact the boron records in coral skeletons and thus interfere the interpretation of proxy data. Records from different oceans, particularly the sites with minimal terrestrial input are then desired to better constrain the proxy interpretations.

Here we report subannually resolved $d^{11}\text{B}$ and B/Ca ratios of coral *Porites* cores from the southern Maldives, where there is trivial influence of fresh water input and vertical water mass exchange, to reconstruct calcification carbonate chemistry. We calculated the corresponding regional seawater carbonate chemistry from 1979 to 2015. When compared with published data, our results show a relatively smaller seasonal and annual variations. Nevertheless, our data does show a decline in calcification pH through time, at a rate of 0.02-0.04 pH unit per decade. This result is comparable to other coral records and modeling estimations. Due to limited interferences from changes of other environmental factors, our results can provide a baseline for future studies on the potential physiological and environmental controls on $d^{11}\text{B}$ and B/Ca ratios in *Porites*.