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Shamberger, K.E.F, Cohen, A.L., Golbuu, y., McCorkle, D.C., Lentz, S.J., Barkley, H.C. (2014) Diverse coral communities in naturally acidified waters of a Western Pacific reef. *Geophysical Research Letters*, Volume 41, Issue 2: 1-6. 

White, M.M., Mullineaux, L.S., McCorkle, D.C., Cohen, A.L. (2014) Elevated pCO₂ exposure during fertilization of the bay scallop *Argopecten irradians* reduces larval survival but not subsequent shell size. *Marine Ecology Progress, Series 498*: 173–186. 

*Derse-Crook, E., Cohen, A.L., Rebolledo-Vieyra, M., Hernandez, L., Paytan., A. (2013) Reduced calcification and lack of acclimatization by coral colonies growing in areas of persistent natural acidification. *PNAS*, 110(27), 11044-11049. doi/10.1073/pnas.1301589110. 

Wang Zhengrong, Glenn Gaetani, Chao Liu, Anne Cohen. (2013) Oxygen isotope fractionation between aragonite and seawater: Developing a novel kinetic oxygen isotope fractionation model, *Geochimica et Cosmochimica Acta*, Volume 117, 15 September 2013, Pages 232-251, ISSN 0016-7037, 10.1016/j.gca.2013.04.025. (<http://www.sciencedirect.com/science/article/pii/S0016703713002603>) 

*Kaplan MB, Mooney TA, McCorkle DC, Cohen AL (2013) Adverse Effects of Ocean Acidification on Early Development of Squid (*Doryteuthis pealeii*). *PLoS ONE* 8(5): e63714. doi:10.1371/journal.pone.0063714 

*Drenkard, E., Cohen, A.L., McCorkle D.C., de Putron S.J., Zicht, A., Starczak, V. (2013) The Impact of Heterotrophic Feeding on the Coral Calcification Response to Ocean Acidification. *Coral Reefs*, DOI 10.1007/s00338-013-1021-5 

Wang, Z; Hu, P; Gaetani, G; Liu, C; Saenger, C; Cohen, A; Hart, S. (2013) Experimental calibration of Mg isotope fractionation between aragonite and seawater. *Geochimica et Cosmochimica Acta* vol. 102 p. 113-123



*White MM, McCorkle DC, Mullineaux LS, Cohen AL (2013) Early Exposure of Bay Scallops (*Argopecten irradians*) to High CO₂ Causes a Decrease in Larval Shell Growth. PLoS ONE 8(4): e61065.

doi:10.1371/journal.pone.0061065

*Holcomb, M., Cohen, A.L., McCorkle, D.C. (2013) An evaluation of staining techniques for marking daily growth in scleractinian corals. *Journal of Experimental Marine Biology and Ecology*, 440(126 – 131)

*Vásquez-Bedoya, L. F., A. L. Cohen, D. W. Oppo, and P. Blanchon (2012), Corals record persistent multidecadal SST variability in the Atlantic Warm Pool since 1775AD, *Paleoceanography*, doi:10.1029/2012PA002313.

Karnauskas, K.B. and Cohen, A.L. (2012), Equatorial refuge amid tropical warming. *Nature Climate Change*, 2012; DOI: [10.1038/nclimate1499](https://doi.org/10.1038/nclimate1499)

*Holcomb, M., Cohen, A. L., McCorkle, D. C. (2012) An investigation of the calcification response of the scleractinian coral *Astrangia poculata* to elevated pCO₂ and the effects of nutrients, zooxanthellae and gender, *Biogeosciences*, 9, 29-39, doi:10.5194/bg-9-29-2012

John M. Pandolfi, Sean R. Connolly, Dustin J. Marshall, Anne L. Cohen (2011). Projecting Coral Reef Futures Under Global Warming and Ocean Acidification. *Science*, 333, 418 (2011)

Glenn A. Gaetani, Anne L. Cohen, Zhengrong Wang, John Crusius (2011). Rayleigh-based, multi-element coral thermometry: A biomineralization approach to developing climate proxies. *Geochimica et Cosmochimica Acta* 75 (2011) 1920-1932

S. J. de Putron, D. C. McCorkle, A. L. Cohen, A. B. Dillon. (2011) The impact of seawater saturation state and bicarbonate ion concentration on calcification by new recruits of two Atlantic corals. *Coral Reefs*. DOI 10.1007/s00338-010-0697-z

Cohen A.L. and Gaetani G.A. (2010) Ion Partitioning and the Geochemistry of Coral Skeletons: Solving the Mystery of the “Vital Effect”. IN: European Mineralogical Union, Notes in Mineralogy: “On partitioning in low temperature aqueous systems: from fundamentals to applications in climate proxies and environmental geochemistry” Editors: Manolo Prieto and Heather Stoll

















J. B. Ries, A. L. Cohen, D. C. McCorkle. (2010) A nonlinear calcification response to CO₂-induced ocean acidification by the coral *Oculina arbuscula*. *Coral Reefs*. DOI 10.1007/s00338-010-0632-3


Holcomb M.C., McCorkle D.C., Cohen A.L.(2010) Long-term effects of nutrient and CO₂ enrichment on the temperate coral *Astrangia poculata* (Ellis and Solander 1786), *Journal of Experimental Marine Biology and Ecology*, 386 (2010) 27–33

Cohen A.L., and Holcomb M. (2009). Why Corals Care About Ocean Acidification: Uncovering the Mechanism. *Oceanography*. Vol. 22, No. 4, 118-127.

Cohen A.L., McCorkle D.C. and de Putron S. (2009). Compositional and morphological changes in the skeletons of juvenile corals reared in acidified seawater: insights into the biomineralization response to ocean acidification, *Geochemistry Geophysics Geosystems*, Vol. 10, No. 7, Q07005, DOI:10.1029/2009GC002411.


Holcomb M, Cohen A, Gabitov R, and Hutter J. (2009). Compositional and morphological features of aragonite precipitated experimentally from seawater and biogenically by corals. *Geochimica et Cosmochimica Acta*, DOI:10.1016/j.gca.2009.04.015, 4166–4179.

- Ries J.B., Cohen A.L. and McCorkle D.C. Marine calcifiers exhibit mixed responses to CO₂-induced ocean acidification. *Geology*, Vol. 37; no. 12; p. 1131–1134; DOI: 10.1130/G30210A. 
- Saenger C.S., Cohen A.L., Oppo D.W., Halley R.B., and Carilli J.E. (2009). Surface-temperature trends and variability in the low-latitude North Atlantic since 1552. *Nature Geoscience*, Vol. 2, DOI: 10.1038/NNGEO552. 
- Casey Saenger, Anne L. Cohen, Delia W. Oppo, and Dennis Hubbard (2008), Interpreting sea surface temperature from strontium/calcium ratios in *Montastrea* corals: Link with growth rate and implications for proxy reconstructions, *Paleoceanography*, Vol. 23, PA3102, doi:10.1029/2007PA001572. 
- R.I. Gabbitov, G.A. Gaetani, E.B. Watson, A.L. Cohen, H.L. Ehrlich (2008), Experimental determination of growth rate effect on U⁶⁺ and Mg²⁺ partitioning between aragonite and fluid at elevated U⁶⁺ concentration, *Geochemica et Cosmochimica Acta*, v. 70, p. 4617-4634. 
- Cohen, A. L., and S. R. Thorrold (2007), Recovery of temperature records from slow-growing corals by fine scale sampling of skeletons, *Geophys. Res. Lett.*, 34, L17706, doi:10.1029/2007GL030967. 
- Goodkin, N. F., K. A. Huguen, and A. L. Cohen (2007), A multicoral calibration method to approximate a universal equation relating Sr/Ca and growth rate to sea surface temperature, *Paleoceanography*, 22, PA1214, doi:10.1029/2006PA001312. 
- Cohen AL, Gaetani GA, Lundälv T, Corliss BH and George RY (2006), Compositional variability in a cold-water scleractinian, *Lophelia pertusa*: New insights into “vital effects”, *Geochem. Geophys. Geosyst.*, 7, Q12004, doi:10.1029/2006GC001354 
- Gaetani GA, Cohen AL. (2006) Element partitioning during precipitation of aragonite from seawater: a framework for understanding paleoproxies. *Geochemica et Cosmochimica Acta*, 70 4617-4634. 
- Goodkin, N. F., K. A. Huguen, A. L. Cohen, and S. R. Smith (2005), Record of Little Ice Age sea surface temperatures at Bermuda using a growth-dependent calibration of coral Sr/Ca, *Paleoceanography*, 20, PA4016, doi:10.1029/2005PA001140 
- Z.A. Bond, A.L. Cohen, S.R. Smith, W.J. Jenkins (2005) Growth and composition of high-Mg calcite in the skeleton of a Bermudian gorgonian (*Plexaurella dichotoma*): Potential for paleothermometry. *Geochem. Geophys. Geosys.* Vo. 6, No. 8, Q08010 
- Cohen AL, Hart SR, (2004) Deglacial sea surface temperatures of the western tropical Pacific: A new look at old coral. *Paleoceanography*, 19: 1-6 
- Cohen AL, Reves-Sohn RA (2004) Tidal Modulation of Sr/Ca in a Pacific Reef Coral. *Geophysical Research Letters*. Vol. 31, No. 16, L16310 
- Cohen AL, McCartney MS, Smith SR, van Etten J (2004) How Brain Corals Record Climate: An Integration of Skeletal Structure, Growth and Chemistry in *Diploria labyrinthiformis* on Bermuda. *Marine Ecology Progress Series*. 271:147-158. 
- Cleveland RA, Cohen AL, Roy R, Singh H, Szabo T (2004) Imaging Coral II: Using Ultrasound to Image Coral Skeleton. *Journal of Subsurface Sensing Technologies and Applications* 5(1): 43-61 
- Cohen AL, McConnaughey TA (2003) A Geochemical Perspective on Coral Mineralization. In: *Biom mineralization*. Dove PM, Weiner S, deYoreo JJ (Eds) *Reviews in Mineralogy and Geochemistry* 
- Vol. 54. Cohen AL, Owens KE, Layne GD, Shimizu N (2002). The Effect of Algal Symbiosis on the Accuracy of Sr/Ca paleotemperatures from Coral. *Science* April 12th 296 (5566):331-333 


Cohen AL, Layne GD, Hart SR, Lobel PS (2001) Kinetic control of skeletal Sr/Ca in a symbiotic coral: implications for the paleotemperature proxy. *Paleoceanography*, 16(1): 20-26 

Cohen AL, McCartney MS (1999) Seasonally-Resolved records of Oceanic Surface Conditions in Brain Corals from Bermuda. In: *Papers on Atlantic Climate Variability*, Atlantic Climate Change Program, Office of Global Programs, NOAA

Cohen AL, Hart SR (1997) The Effect of Colony Topography on Climate Signals in Coral Skeleton. *Geochemica et Cosmochimica Acta*, 61(18):3905-3912 

Hart SR, Cohen AL, Ramsay PB (1997) Microscale analysis of Sr/Ca and Ba/Ca in Porites. IN: Lessios, H. A., Macintyre, I.G. (eds). *Proceedings of the 8th International Coral Reef Symposium 2*:1707-1712 

Cohen AL, Lobel PS, Tomasky GL (1997) A Coral Bleaching Event on Johnston Atoll, north-central Pacific. *Biological Bulletin*, 193:276-279 


Hart SR, Cohen AL (1996) Sr/Ca in Corals: An Ionprobe Study of Annual Cycles and Microscale Coherence with Other Trace Elements. *Geochemica et Cosmochimica Acta*, 60:3075-3084. 

Schumann E.H., Cohen A.L., Jury M.R. (1995), Coastal sea surface temperature variability along the south coast of Africa and the relation to regional climate, *Journal of Marine Research*, 53:231-248

Cohen A.L. and Tyson P.D. (1995), Holocene Sea Surface Temperatures on the South Coast of Africa: Implications for Terrestrial Climate and Rainfall. *The Holocene*, 5(3):304-312

Cohen A.L. (1993), Oceanic Records of Climate Change. News and Views from the Fourth International Conference on Paleoceanography. *South African Journal of Science*, 89:258-259

Cohen A.L., Parkington J.E., Brundrit G.B., van der Merwe N.J. (1992), A Holocene marine climate record in mollusc shells from the southwest African coast. *Quaternary Research* 38:379-85

Cohen A.L. and Branch G.M. (1992), Geographic changes in the structure and mineralogy of the shell of *Patella granularis* along the coast of South Africa: implications for palaeotemperature assessments. *Paleoecology, Palaeogeography and Palaeoclimatology*. 

Cohen A.L. (1988), Isotopic and mineralogical variation in the shells of recent marine molluscs from the western Cape coast of South Africa. *South African Journal of Science*, 84 (11):917-918

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