



A study on the seasonal profile of the South China Sea and the possible detrimental effects of ocean acidification on coral reef

N. a/p Nilamoni, Z. Yasin, and A. Tan Shau-Hwai

Marine Science Laboratory, School of Biological Science, Universiti Sains Malaysia, 11800 Penang, Malaysia
(n.nitthiyaa@gmail.com)

Southeast Asia region is known for its high biodiversity in species, habitat and ecosystem. Threats to these rich ecosystems are mounting; the effects of ocean acidification with global warming could be even more devastating. Here, we analyzed the effects of potential biological and physical aspects that lead to coral mortality risk in South China Sea region. Seasonal profile of salinity, sea surface temperature (SST), cyclone frequency, wind speed, Chl-a, and growth rate of coral are suggested to be the detrimental effects of ocean acidification on coral reefs. As the expected high temperatures increases the mortality rate of corals. Acidification, where high CO₂ with high SST suggested to lower the thermal bleaching thresholds.

As cyclone frequency increases, wind speed increases which lead to decline in SST. This condition has lead to harmful algal bloom. Seasonal profile of salinity is very much influenced by rainfall. Thus, acidification is likely to coincide with these changes to affect the whole coral ecosystem. However little new information has become available on this issue among the countries. This paper investigates the biological profiles of South China Sea and how this would relate to the possible degree of mortality or decline of the reefs or corals here. It also points to the areas where a more detailed understanding through lab experimentation, in situ experimentation, and monitoring efforts is essential to quantify the effects of ocean acidification on coral ecosystems in South China Sea.