

## Impacts of extreme climate events on coastal environment: A case study from Southwest Sea in Vietnam

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Climate change related to emission of greenhouse gas from human activities is the most important environmental problem of twenty-first century. Such climate change maybe influence to marine ecosystems through extreme weather events like El Nino Southern Oscillation (ENSO), or monsoon causing damage on both fishery and aquaculture. Therefore, the relationship between climate events (such as Monsoon, ENSO) and the variation of marine environment can be used as a proxy to access the damage of climate change on marine ecosystems. However, the mechanisms linking climate events and ecosystem change depend on geographical features, and are difficult to identify due to the synergistic effects of multiple climates and stressors. To understand the response of marine ecosystem to the variation of climate events, satellite remote-sensing data, in-situ observations, and climate indices data in Southwest Sea of Vietnam are combined to examine the spatio-temporal distribution of environment factors for a long period (2002-2012). Beside that, statistical analysis was also implemented to test whether the relationship between paired factors. By combining the results with meteorological knowledge, mechanisms driving the variation of marine ecosystem in this region were explored and discussed.

Keywords: Climate Change, Remote Sensing, El Nino Southern Oscillation, Monsoon, Coastal environment