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Coral bleaching as indices for global warming effect to coastal ecosystem

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Coral bleaching is the obvious effect of global warming SST increase on coastal organism and ecosystem at tropical and sub tropical area. In turn, at temperate coast, scallop and oyster were reported to be died last 2010 hot summer in Japan. However, ecosystem change in urbanized temperate coastal area could be caused not only by water temperature rise but also by other environmental factors, thus it is difficult to derive these mass mortality solely to be related to global warming. To evaluate the index appropriateness of coral bleaching as global warming effect on other coastal ecosystem, we used the same in-situ type underwater respirometer at Okianwa and Kochi at Japan main island to evaluate metabolic response to high water temperature, both in coral being sensitive to high SST and blue mussel being extinction because of not tolerant to high water temperature, The result suggested that energy balances of both species turned to be minus at high water temperature, indicating correlation of both species extinction in each coastal ecosystems, within especially large scale warming trends. However, reef ecosystem degradation and topical local high temperature may prevent to one to one event correlation between coral bleaching and blue mussel mass mortality.

Keywords: Coral, Bleaching, Mussel, Global warming, Coastal ecosystem