

reconstructed SST variation shows general correlation with El Niño-Southern Oscillation (ENSO) and a sea-surface warming of $\sim 0.7^{\circ}\text{C}$ in the latter half of the 20th century. The Mg/Ca time series exhibits indistinct annual cyclicality, indicating that the previously-reported strong correlation between coral Mg/Ca ratio and SST is disturbed by some factors. The Ba/Ca time series shows annual spikes coincident with annual bright UV-luminescence lines. The Ba/Ca spike and the bright UV-luminescence line occur in September to November (the wet season) when seawater salinity decreases to a minimum value. Since the coral sampling site is only 90 km distant from the mouth of the Mekong River, the Ba/Ca spikes and bright UV-luminescence lines may be related with the discharge from the Mekong River. This study is the first attempt in the southern SCS to reconstruct past ocean environment by multi-element analysis of coral skeletons and has demonstrated its usefulness for understanding the environmental changes in Southeast Asia.

Mangrove reforestation as one of the activities to curtail global warming

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The climate change that leads to global warming is becoming one of the important world issues. Continuing increase in atmospheric temperature has led nations, corporations, and individuals to implement actions to try to curtail global warming. One of important innovations has been the development of green house gas emissions trading through which companies, in conjunction

with government, agree to cap their emission or to purchase credits from those below their allowances. Reforestation is one of the activities that can be used for this kind of carbon trading. A case study of mangrove reforestation in Thailand can be used as a successful example of carbon credit.

Mangrove forest areas increased in Thailand during 1997-2004 after a long decline for at least the past 40 years. This mangrove recovery was amounting to the increase of 85,384 ha of forest area. The rate of mangrove forest increase during 1997-2004 was greater than the greatest recorded loss rates during 1980-1986. Mangrove recovery was a result of several efforts for instance the keen public awareness of mangrove forest values, wide spread use of intensive shrimp farming culture technology that no longer benefits from use of mangrove areas, termination of mangrove forest concession by the government, and mangrove reforestation programs supported by both public and private sectors. The Royal Family also strongly supported mangrove preservation and reforestation. Mangrove forest areas in Thailand are expected to continue increasing on the strength of the momentum created by these efforts. In calculating the mangrove recovery back to carbon deposition, this amount of carbon can be used for trading. This activity complies with the concept of clean development mechanisms (CDM) set by the Kyoto Protocol.

Yangtze river 2006: low water discharge and salt water intrusion of extreme drought event

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The year 2006 is currently considered to be the fifth warmest year on record and it's been marked by warmest Autumn in Europe, severe drought in Australia, extreme drought and heavy Exceptional low water discharge had happened over Yangtze River in 2006. Based on meteorological data, historical current & sediment data and the data collected in October 2006 in Yangtze River basin and in estuary, the analyses of exceptional low water discharge characteristics, effect on suspended sediment and the cause of strong salt water intrusion were carried out. The results showed that: 1) 2006 discharge is characterized by exceptional low