

# **Impact of Tsunami on the Andhra Coast of India: A Geological Perspective**

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It was on the fine morning after Christmas Day in 2004, the massive Tsunami caused a wide spread damage in Asia , with human loss of over 3,00,000 across 11 nations and estimated economic loss of US \$ 13 billons. The tsunami also caused damage to the fragile Andhra coastal setting too. This coast line contains series of shallow bays and coastal dunes. The east coast of India is more prone to natural hazards like cyclones ,storm surges and now the new hazard in the form of tsunami, in comparison to the west coast of India. For the past ten years, the coast line population and industries along the Bay of Bengal has significantly increased warranting the possible forecasting of Tsunami. The coast line was surveyed on foot and data collected from February 15 to March 30, 2005. The Bay surface waves are strongly forced by high wind conditions associated with Tsunami force. The inundation caused by the Tsunami waves have, however affected the coastal Bay of depositing huge quantities of black clay and silt. The thickness of the clay cover may be up to 3m, indicating the height of the waves would be more than 3 m. A cursory examination shows that the impact was maximum in the shallow Bay and minimum in deeper zones. The study shows that the variations in the wave fields is mainly caused by the variability of wind forcing. Tsunami effect was significant on the near shores when mean water depth decreases sharply from a few hundreds of meters to less than 10 m along the East Coast of India. A few fresh water bodies were swamped by the tsunami and turned saline. As sea-water incursion was patchy, most coastal fresh water bodies were unaffected. Fauna and flora along the coast of the affected part is badly damaged. This paper attempts to bring the impact of the tsunami along Andhra coast.. These observations may prove valuable in future numerical modeling of Tsunami impact from sources around the Pacific Rim, the results of which will benefit many nations and island nations of the Indo-South Pacific as well as India.