Rafiau, W. B., K. L. Jackson, D. Billy, M. Bonte-Grapentin, J. Kruger, B. G. McAdoo, A. L. Moore and B. Tiano. 2007. Geologic Survey of the 2 April 2007 Solomon Islands Earthquake and Tsunami. Eos Trans. AGU, 88(52), Fall Meet. Suppl. Abstract S13A-1047.

Abstract:
The 2 April 2007 magnitude 8.1 Solomon Islands earthquake and tsunami caused extensive damage to coral reefs, coastal erosion, and in some locations, 3 meters of uplift, subsidence, and numerous landslides in the Western and Choiseul Provinces. Extensive damage to the coral reefs ranged from shattered branching corals to 4 meter head corals snapped off their bases and toppled over. The fringing reef on the east coast of Ranongga sustained the greatest degree of damage as it was uplifted 3 m above sea level and remains completely exposed. Sediment samples were collected along transects extended from offshore to onshore environments for larger islands, such as Ghizo, where the tsunami did not pass over the entire island. Smaller islands, such as Nusa Aghana, a transect was conducted from the outer barrier reefs, through the lagoon, across the island, and offshore on the opposing side of the island. Offshore data was collected using a side-scan sonar system that records bathymetry and images coral reef morphology. This data was coupled with snorkeling and SCUBA diving to ground truth the offshore lagoon and reef environments. Sediment samples were collected offshore every 5 m and were documented by underwater photos and GPS coordinates. Offshore to onshore sediment transects reveal that sediment was eroded from seaward facing shorelines, deposited a thin veneer of sediment on islands, and transported the majority of the sediment on coral reefs on the lagoon side of islands, essentially burying coral and lagoonal sediment. Coral reef damaged by the earthquake and tsunami represents a major concern for an already threatened ecosystem. Recovery of the fishing and dive tourism economies rely on the healthy reestablishment of the reef.