

High-resolution satellite Remote Sensing for monitoring coastal mangroves forests in prevention of potential hurricane and tsunami, Le Wang, Assistant Professor, Department of Geography, University at Buffalo, the State University of New York 105 Wilkeson Quad., Buffalo, NY 14261, Email: lewang@buffalo.edu, Phone: (716)645-2722 ext. 24

Mangroves, once occupied 75% of the world's tropical and subtropical coastlines, are a unique forest type that provide critical "ecosystem services", one of which was recently evidenced in the 2004 Indian Ocean Tsunami, i.e. areas with intact seaward mangrove forests suffered much less human death and property destruction than otherwise. However, anthropogenic alteration of global climate will exert significant direct and indirect negative impacts on mangrove ecosystems. On the Caribbean coast of Panama, the region of our past and proposed research on mangrove forest dynamics, water temperature increased by two degrees and sea level has been rising at the rate of 1.3 mm/year in the past twenty years. There are rigorous model predictions and growing empirical evidence that rapid sea-level rise, accelerated by global warming, will submerge and erode away seaward mangrove stands. Protecting and managing these endangered habitats is an important international conservation objective. Achieving this will require the development of techniques for accurately mapping and monitoring the distribution and health of mangrove forests, especially in an era of accelerated climate change. In this talk, I will introduce our recent NSF-funded project to map and monitor the spatial distribution, species composition, and health of coastal mangrove forests in a study site in Panama with high spatial resolution satellite imagery (IKONOS

and QuickBird) and *in situ* hyperspectral spectrometer.