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Tropical Storm Isidore and Hurricane Lili: Louisiana Barrier Shoreline Response, Preliminary Results

In a cooperative effort between U.S. Geological Survey, National Aeronautics and Space Administration, University of New Orleans, and Louisiana's Department of Natural Resources, Louisiana's barrier islands were surveyed with airborne topographic lidar and oblique aerial photography both before and after the impacts of 2002's Tropical Storm Isidore and Hurricane Lili. The surveys were compared to quantify the magnitudes and patterns of erosion and accretion in both natural areas and areas that had been subjected to major restoration. Wave runup exceeded the elevation of the entire Isles Dernieres barrier chain creating overwash deposits that, in places, were driven landward ~300 m. This response was not as severe as observed during Hurricane Andrew in 1992 when the Isles Dernieres were completely and continuously inundated and sand bodies were driven landward on the order of 1 km. Based on a comparison of surveys before and after the combined impacts of Lili and Isidore, the largest shoreline change occurred at the east end of East Island and reached ~130 m of erosion