

Gulf Coast sea level rise in overdrive, study says

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The rate of sea level rise along the U.S. Gulf Coast has increased dramatically this past century compared to that of the preindustrial millennium (600-1600 A.D.). This sobering news for residents from the Florida panhandle to east Texas is just one part of the findings by Tulane University researchers in a study published March 30 in the journal *Earth and Planetary Science Letters*.



Professor Torbjörn Törnqvist, with a graduate student and a postdoctoral researcher, is studying the rate of sea level rise along the Gulf Coast. (Photo by Paula Burch-Celentano)

“Specifically, we have determined that the rate of sea level rise in the 20th century has been five times higher as a result of human-induced climate change,” said co-author [Torbjörn Törnqvist](#), professor and chair of the Department of Earth and Environmental Sciences. Sea level has risen more than 8 inches during this time.

The study, co-authored by postdoctoral research associate Shi-Yong Yu and graduate student Ping Hu, also reveals some good news — relatively speaking — for residents of the New Orleans area. Though sea levels are rising at alarming rates, the ground 60 to 80 feet below is fairly stable.

“Our study shows that the basement underneath key portions of the Mississippi Delta, including the New Orleans area, has subsided less than one inch per century faster during the past 7,000 years than the more stable area of southwest Louisiana,” says Törnqvist. “This difference is much lower than previously believed; most studies have assumed that a large portion of the Earth's crust underneath the Mississippi Delta subsided much faster due to the weight of rapidly accumulating sediments in the delta.”

In other words, while the delta basement is in fact sinking, it's sinking at very slow rates over vast geologic timescales.

“Looking forward 100 years, our main concern is the continued acceleration of sea-level rise due to global warming, which is almost certain to happen and may amount to as much as three to five feet under the more pessimistic scenarios,” says Törnqvist.