

New study shows increased flooding, accelerated sea-level rise in Miami over last decade

April 4 2016



High-tide (Sunny-sky) flooding in Miami Beach. Credit: Shimon Wdowinski, Ph.D.

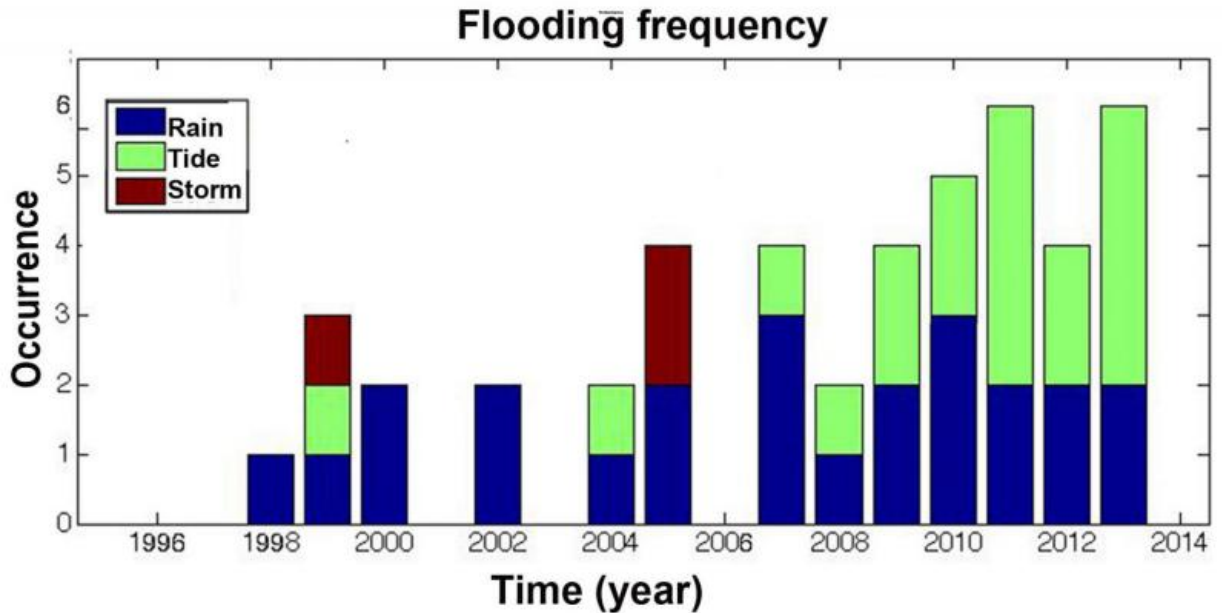
A new University of Miami (UM) Rosenstiel School of Marine and

Atmospheric Science-led study found that Miami Beach flood events have significantly increased over the last decade due to an acceleration of sea-level rise in South Florida. The researchers suggest that regional sea-level projections should be used in place of global projections to better prepare for future flood hazards in the region.

To quantify the flood hazard in Miami Beach, the UM Rosenstiel School researchers analyzed tide and rain-gauge records, media reports, insurance claims, and photos of flooding events on Miami Beach and in Miami since 2006. The insurance claims and media reports helped the researchers pinpoint the date and type of [flood](#) events.

"Our results show that the effect of [sea-level rise](#) is real and affecting the daily life of people living in low-lying coastal communities, such as Miami Beach," said Shimon Wdowinski, UM Rosenstiel School research professor of marine geosciences, and lead author of the study.

The results showed that the flooding frequency in Miami Beach has significantly increased after 2006 mainly due to increasing number of high-tide flooding events. The increased flooding frequency coincides with acceleration in the rate of sea level rise in South Florida. The average rate of sea-level rise increased by 6 millimeters per year over the last decade - from 3 millimeters per year before 2006 to 9 millimeters per year after 2006.



Annual flooding occurrence in Miami Beach between 1998-2013 indicating a significant increase in tide flooding events (green) since 2006. Credit: Shimon Wdowinski, Ph.D.

The study also provides new evidence that connects the weakening of the Gulf Stream with sea-level rise along the US Atlantic coast.

Florida is one of the most vulnerable areas to sea-level rise due to its low elevation, large population concentrations, and economic importance. Accelerated rates of [sea-level rise](#) have caused a significant increase in flooding frequency in several coastal communities in Florida.

Provided by University of Miami

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