

# Rising Water: New signs of rising sea levels cause concern

- Posted by [Mary Kate Leming](#) on October 30, 2013 at 1:30pm
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*Dozens of concerned neighbors meet Oct. 19 along Marine Way in Delray Beach to see the effects of high tides along the Intracoastal Waterway. Jerry Lower/The Coastal Star*

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**By Cheryl Blackerby**

It was a home tour no homeowner wants to be on.

The lovely two-story, 1920s-era homes along Marine Way in Delray Beach could have been the highlights on a holiday tour, but on this sunny Saturday morning in October the houses served as cautionary tales.

During an autumnal high tide, seawater lapped over the edge of the lane on the other side of the houses. Sand bags were stacked next to a house.

C.J. Johnson stood barefoot on his thick green lawn — the grass and dirt as water-saturated as a sponge. “This is salt water. My grass will die,” he said matter-of-factly.

He and his wife, Margery, have lived in their home for 21 years. The house was built by Addison Mizner in 1922 at the Boca Raton Resort and Club for the construction manager and floated to its present site in 1928. The high tides have gotten higher in recent years, often flooding their dining room, which faces the Intracoastal. Last year, the air conditioning compressor was underwater and they had to raise it 2½ feet.

When asked about the future of the house, Margery Johnson laughed uneasily. “We’re not too worried about selling it. We’re going to die here.” Meanwhile, their flood insurance has risen to \$4,000 a year and is sure to go higher.

Next-door neighbor Genie DePonte’s gracious home, which has a veranda overlooking the Intracoastal, is higher off the ground than the Johnsons’ house, but she also had to replace her air-conditioning unit, and she had car damage from flooding. “It shows you how the situation could get really bad,” she said.



*Genie DePonte gestures across the high tide-flooded street during a neighborhood tour of the Marina Historic District in Delray Beach on Oct. 19.*

About 40 Delray Beach residents took this unusual home tour on Oct. 19 and walked down the narrow lane, one of the prettiest in the county, to see firsthand how high the water was rising.

Speaker for the event, Dr. Ana Puszkin-Chevlin, a Delray Beach resident and consultant on environmental land use planning and coastal hazard resiliency, told the residents the community needs to be making plans for the next 20 years — “retrofitting pumping stations, acquiring coastal land, creating berms, raising roads, raising houses and moving houses.”

And septic tanks, which are common on the barrier islands? “Septic tanks are a disaster,” she said.



*Delray Beach residents wade through floodwaters after Hurricane Sandy. 2012 file photo/Jerry Lower/The Coastal Star*

### **Sea rise is hot topic**

The concern about sea level rise, particularly since Hurricane Sandy, has led coastal residents to form organizations like the South Florida Action Partners. Long-standing groups such as the League of Women Voters of Palm Beach County are getting behind the sea-rise issues. Both groups were sponsors of the event, along with Organizing for Action and MoveOn.

Floridians are suddenly talking about a subject they didn't want to contemplate even a few years ago.

In July, it was standing-room-only at a one-day sea level rise symposium held at Oxbridge Academy in West Palm Beach. In October, Florida Atlantic University hosted the "Sea Level Rise Summit: Resilience in the Face of Change," with expert speakers and panel discussions.

On Nov. 7 and 8, the Southeast Florida Regional Climate Change Compact, formed in 2009 by Palm Beach, Broward, Miami-Dade and Monroe counties, will host speakers and meetings on sea rise at the Broward County Convention Center in Fort Lauderdale. The partnership, they said, was created "to tackle one of, if not the, most important issue facing our generation."

The group developed an action plan to protect a vulnerable water supply and coastal infrastructure, among other sea rise and climate issues; but while Broward, Miami-Dade and Monroe counties embraced the plan, the Palm Beach County Commission has yet to sign it.





*Seasonal high tides were amplified by the effects of Hurricane Sandy in October 2012, flooding many streets along the Intracoastal including these in Briny Breezes. Photos by Jerry Lower/The Coastal Star*

Meanwhile, sea rise is causing problems now.

On Oct. 11, the National Weather Service announced that the dry season had officially started. Six days later, after a week of sunny days, there was a foot of seawater in the streets and low elevations of Fort Lauderdale. In Miami Beach, salt water pushed up through the drains on Alton Road, standing 2 feet deep.

In Palm Beach County, the Intracoastal sent water over several roads in Briny Breezes. In Lantana, rising water washed up to the edge of A1A, and the parking lot on the west side of the Lantana Bridge was toe-dipping distance from the water. All along the Intracoastal boats seemed to float on an even level with docks and parking lots.

### **What scientists say**

No matter what people might think of global warming or climate change — a topic more seriously discussed in public forums since Hurricane Sandy — sea level rise is a certainty, and one that can be measured.

Since about 1930, the global average of sea level has risen about 9 or 10 inches, according to the National Oceanic and Atmospheric Administration.

“It’s running at about 3.2 millimeters per year, but that is accelerating every year,” said Dr. Harold Wanless, chairman of the Department of Geological Sciences at the University of Miami. That’s one-eighth inch — an inch of sea level rise every eight years — and a low-ball estimate for the future, he said.

The U.S. Army Corps of Engineers, NOAA, and the Southeast Florida Regional Climate Change Compact all agree on sea level rise time frames: from 3 to 7 inches by 2030; 9 to 24 inches by 2060; and 3 to 5 feet by 2100.

But Wanless says there are newer NOAA projections: “The higher projection is 2 feet by 2048; 3 feet by 2063; and 4.1 to 6.6 feet by 2100. We’re running ahead of lower projections so it would be silly to only look at lower projections.”

The major cause of sea level rise, say scientists, is global warming, which contributes in two ways: thermal expansion — when seawater warms, its volume increases — and melting ice on land, primarily glaciers and ice sheets, which adds more water.

What does that mean for South Florida in the next 20 years?

- Lower elevations on barrier islands, particular on the Intracoastal side, will flood. But beach houses at higher elevations will get higher ocean surges.
- It will be very difficult to keep sand on beaches.

- The water table will rise, and is rising, in western communities from Hialeah up to Wellington, which will be prone to flooding.

- It will be difficult to keep saltwater intrusion from freshwater supplies since Florida is built on limestone as porous as Swiss cheese.

- It will be difficult or impossible to get homeowner's insurance in flood zones.

"We have to start planning for this. This is not something that may happen, this is something that is happening now and will happen," Wanless said. "Every citizen needs to understand this problem and the seriousness of it, and once they do they will put in an electorate that will be responsive for the long-term needs of global warming."

Keren Bolter, research assistant and Ph.D. candidate in geosciences at Florida Atlantic University, has researched and created sea-rise vulnerability maps for Palm Beach County communities, which will be used to plan for the future.

"There are two opposing messages when talking about sea level rise — a camp that says it's a hoax and a camp that says we're doomed," Bolter said. "But you can't ignore the problem. It's still going to happen, and we need to prepare for it."

There's good news about climate change and sea level rise: It won't hit Florida suddenly like a hurricane. There's time to research and prepare, and there's time for what Puszkin-Chevlin calls "the real visionary stuff," when teams of academics, real estate experts and local governments get together and plan.

Another good thing for Palm Beach County: Monroe and Miami-Dade counties have relatively lower elevations and will be on the front lines for sea level rise. Palm Beach County can watch and learn.