

CLIMATEPROGRESS



Shutterstock

How South Florida Is Ignoring The State's Leading Politicians And Taking On Climate Change

BY **KATIE VALENTINE**  MAY 21, 2014 AT 9:18 AM UPDATED: MAY 21, 2014 AT 10:55 AM

Susanne Torriente remembers waking up on Thanksgiving morning in 2012 and discovering that four blocks of Florida's main coastal highway had washed away overnight.

Tropical Storm Sandy, before it turned into a superstorm and traveled up the East Coast, was the immediate culprit, as were the smaller storms that hit South Florida in the following weeks. But none of those storms had been major, not by Florida standards.

Instead, it was high tide combined with sea level rise that had washed significant amounts of sand away from the beach and wiped out State Road A1A alongside it.

For Torriente, Assistant City Manager of Fort Lauderdale, the destruction caused by the combination of storms and high tide was proof that the city needed to do something different.

We can't just replace things the way they were — we have to take into consideration what we know now, and design things for the future.

"This is because of what we know now. We can't just replace things the way they were — we have to take into consideration what we know now, and design things for the future," Torriente said.

State Road A1A was repaired to better withstand increased flooding, an attention to the impacts of sea level rise that Torriente wants to incorporate into development and other city planning decisions. In order to do so, she's banded together with county and city planners from three other Florida counties to form the Southeast Florida Regional Climate Compact. But the rising tide isn't the only thing the group is fighting against.

The impacts of climate change, particularly sea level rise, can no longer be ignored in Florida. Longtime Florida Sen. Bill Nelson (D) called the state "ground zero" for sea level rise in April. Some predictions have South Florida's coastal communities and barrier islands underwater in 100 years. But as a whole, the state government has been slow to act.

Florida's other Senator, Marco Rubio (R), recently reaffirmed his denial of human-caused climate change, saying (during the same interview in which he declared he was ready to be president) that climate "is always changing," and that scientists have taken a "handful of decades of research" and turned it into evidence of a long-term warming trend.

Florida's up-for-reelection Gov. Rick Scott (R) has also denied climate change, saying in 2010 that he hasn't "been convinced" that it was happening.

But 2010 was also the year that the four Florida counties — Monroe, Palm Beach, Miami-Dade and Broward — joined together to take addressing sea level rise into their own hands. The counties are working to get the state to pay attention to sea level rise, but until it does, South Florida is wasting no time in finding solutions.

"What I think people are missing is the story of the compact and what people are actually doing," said Steve Adams, Director of the U.S. Climate Adaptation Program at the Institute for Sustainable Communities and a native Floridian who helped develop the idea for the compact. "Particularly at a moment when we're all watching Congress with great dismay — we feel like we're ungovernable at the federal level — we're seeing this moment a group of local state and federal agency staff able to work together in a remarkably powerful way. The partisan differences in South Florida just don't much matter."

Working to adapt a region to some truly dire sea level rise predictions hasn't been easy, but the compact members are committed to doing what they can to save their region.

"While we do have a daunting threat facing us, we aren't throwing up our hands and running away or sticking our heads in the sand," Nichole Hefty, sustainability director of Miami-Dade county said. "We're doing something about it."

'The Canary In The Coal Mine'

In South Florida, doing something about sea level rise is a matter of survival.

The [National Climate Assessment](#), released this month, singled out Southeast Florida as a region particularly vulnerable to sea level rise, one where "just inches of sea level rise will impair the capacity of stormwater drainage systems to empty into the ocean." Those drainage systems are already experiencing problems in many areas, the report notes, especially during high tides and heavy rains.

In Key West, a [tide gauge](#) that's been measuring change in sea level since 1913 has documented an increase of seven-eighths of an inch every ten years, equaling out to an increase of more than eight inches as of 2013. By 2060, [according to the World Resources Institute](#), sea levels along Florida's coasts could rise another nine inches to two feet.

We're here where the rubber hits the road. We're the canary in the coal mine.

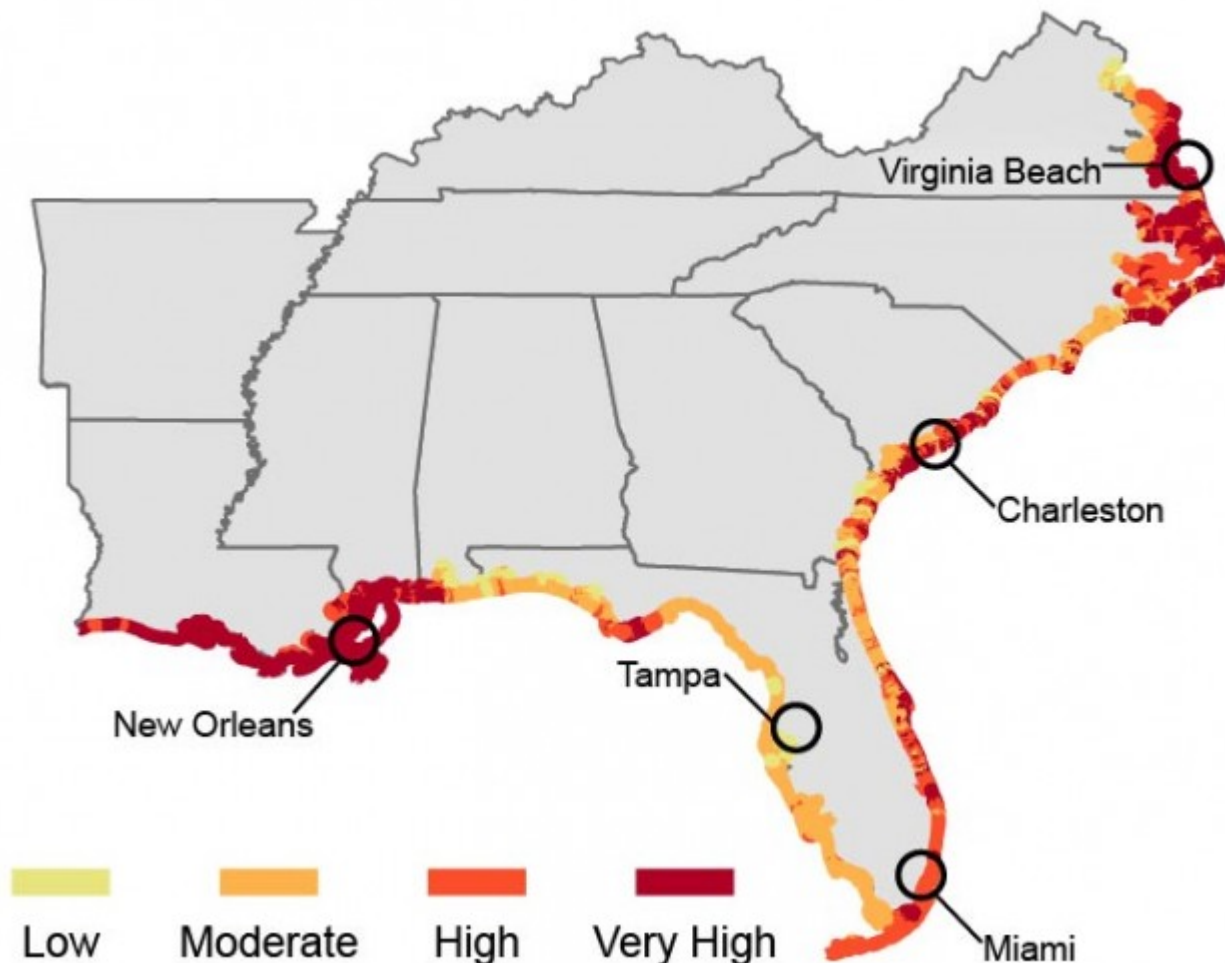
"We're here where the rubber hits the road. We're the canary in the coal mine," said Rhonda Haag, Sustainability Program Manager for Monroe County, which encompasses

the Florida Keys. “We see it. We see it in the extreme high tides when we have water on the road ... We’re already changing the way we do business.”

The rate of sea level rise along the East Coast is accelerating three to four times faster than the global average, according to the [U.S. Geological Survey](#), making Florida’s situation even more dire. But the real reason Floridians have to worry about sea level rise is that so many of them live on the state’s coastlines. About [75 percent](#) of South Florida residents — around 4.12 million people — live along the coast, and 2.4 million of them live within four feet of the tide line. By 2030, the risk of a storm surge at the four foot mark will [more than double](#).

“There’s good reason to believe southern Florida will eventually have to be evacuated,” Ben Strauss, chief operating officer of Climate Central, [said in 2012](#). His warning was echoed a year later by Harold Wanless, chairman of the department of geological sciences at the University of Miami, who [proclaimed famously](#) in a June Rolling Stone article that “Miami, as we know it today, is doomed.”

Vulnerability to Sea Level Rise



CREDIT: NATIONAL CLIMATE ASSESSMENT/(DATA FROM HAMMAR-KLOSE AND THIELER 2001

Those predictions, however, aren't what the leaders of the Climate Compact focus on when they go to work each day.

Hefty has been part of the compact since the four counties joined together in 2010, as has Jennifer Jurado, Director of the Natural Resources Planning and Management Division in Broward County. Jurado said before the counties came together, the way they were addressing these issues wasn't lining up: the maps of sea level rise baselines were different, and the strategies being used to try to quantify the impacts of sea level rise were inconsistent.

Once they came together, however, Jurado said that all changed. With the help of Florida Atlantic University and the U.S. Army Corps of Engineers, the counties developed a unified projection for sea level rise in the region and a Regional Climate Action Plan with sea level rise goals and objectives that could be adapted to each county's needs. Broward adopted the action plan first, followed by Monroe, Miami-Dade and Palm Beach — all within a one-year time frame, which Jurado says is “exceptional” for the region.

The main benefit of the compact, Hefty said, has been the coordination of these efforts among the four counties, which all face similar threats from sea level rise but are different enough to require plans that are adaptable to each county's needs.

“We've really been able to leverage each others' resources and rely on each other and ask each other for assistance and information,” she said. “It's been a really synergistic effect in my opinion, because if it was just me talking about climate change, we wouldn't have the coverage and the broader voice that we do when we're talking from the perspective of four counties that make up 30 percent of the population of the state.”

Finding Solutions To The Biggest Of Problems

The compact has allowed the counties to take action on climate change in ways they may not have before. After Hurricane Sandy washed away State Road A1A, Steve Adams of the Institute for Sustainable Communities said the partnership between the counties and cities allowed them to build back the road in a way that's much more sustainable.

"All of the people who ended up getting involved in the reconstruction effort after the fact were people working together through the Compact process," he said. "So they had relationships, as opposed to you calling up some faceless bureaucrat in the county or city that you don't know."

The Compact's Climate Action Plan has also helped the counties hone in on what impacts of sea level rise are most important to address quickly. One of the most pressing is saltwater intrusion, the movement of ocean water into freshwater aquifers, which can occur as a result of rising seas or strong storm surges. The ground in the region is extremely porous, meaning sea level rise poses a major threat to the region's groundwater. Hefty's Miami-Dade county is working with the U.S. Geological Survey to create a model of how sea level rise and major precipitation events will affect the county's groundwater. And Jon Van Arnem, Assistant County Administrator of Palm Beach County, which last month adopted the Climate Action Plan, said addressing the threat of saltwater intrusion was one of the most important parts of the plan.

Fort Lauderdale faces a different sort of problem. The city is interlaced by a vast network of canals, leading it to be deemed the "Venice of America." Those canals, while alluring to visitors (especially those with boats), have created major problems for city residents as high tides combine with sea level rise. Torriente said that during high tides, Fort Lauderdale's streets are regularly flooded with sea water. To address the flooding in the short-term, the city has installed backflow preventers in some areas in order to stop the water from rising into the roadways — equipment that requires more maintenance but which, according to Torriente, works for now.

Monroe County finished building a new fire station this year that is one-and-a-half feet above the required height, something it wants to start doing for all its new facilities, Haag said. It's also planning on raising a park to help prevent damage from sea level rise. These are things that the collaboration among the counties helped spur in her small county, which, at about 75,000 full-time residents, is about the size of a city in one of Florida's larger counties.

"We're very susceptible to sea level rise and there's no way that we could prepare on our own, with our limited staff here at the counties and our very small cities," Haag said. "We needed the help, including staffing, including knowledge of the members of the other counties, including the elected officials at all four counties working together at the commissioner level."

South Florida is also turning to natural assets to help protect itself from sea level rise and storm surge, something the compact addressed in its Climate Action Plan. Chris Bergh, Director of the Coastal and Marine Resilience program at the Nature Conservancy, is working with a coastal resilience group created by the compact that's researching how Florida can use mangrove forests, dunes and oyster reefs to serve as natural barriers against storm surge. He said as South Florida's sea walls get older, he's looking to see how those areas can be combined with natural infrastructure. Identifying forests or dunes to restore or protect both helps secure Florida's coastlines from storm surge and high waves and helps ensure the state's natural ecosystem is healthy.

"We're in the early stages, but I believe it's going to be a productive area to explore," Bergh said. "The particular opportunity is to do something that can help people but can also be good for nature at the same time."

I think we, in all likelihood, will be able to redesign our communities and our drainage systems ... and continue to live here.

Incorporating ecosystem restoration into sea level rise adaptation is a tactic touted by the sweeping new National Climate Assessment. Leonard Berry, Director of Florida's Center for Environmental Studies, a research center that coordinates environmental research and education among Florida's universities, said this restoration should be prioritized by local governments. Oyster beds, for example, provide good protection against sea level rise in some areas, because the oysters grow upwards as the sea level rises.

"The ideal case is where you can use the natural system to provide protection," Berry said.

The Nature Conservancy's Bergh grew up in Key West and said there's more flooding on low-lying streets today than when he was young. On Big Pine Key, where he now lives, he's experienced a storm surge so strong that it flooded most of the island and washed away his car. When you experience these changes over time, it's nearly impossible to deny their existence — that's why, according to Bergh, the people of South Florida are largely past the stage of debating whether or not sea level rise is occurring.

"We're no longer arguing about whether or not we have a problem. We recognize the fact that the problem is here and is in fact starting to accelerate, and we're in a stage of

identifying what we need to do about it," he said. "Considering that we have the engineering and the will to settle this very low lying, very vulnerable part of the world, I think we, in all likelihood, will be able to redesign our communities and our drainage systems and our coastal defenses and so on, and continue to live here."

But Bergh cautioned that if sea level rise accelerates too quickly, it may become too costly to invest in adaptation, and that's when people will have to start moving away. The National Climate Assessment echoes that sentiment, listing retreat as one of three ways to adapt to sea level rise — in South Florida, it's something regional planners will have to consider in some areas. Right now, though, Bergh and the rest of the compact are focused on the other two options: protecting infrastructure through building levees and sea walls and "accommodating" by raising buildings and exploring natural ways to reduce sea level rise and storm surges' severity.

Looking for Support

No matter how much South Florida does on its own, however, it can't implement all that's needed to adapt to sea level rise without state support. Jurado said there are certain things that need the money and approval of the state government, which historically hasn't shown as much commitment to sea level rise as South Florida officials have.

"If we're elevating sidewalks and door entries, the roads need to be designed for future conditions," Broward County's Jennifer Jurado said. "If cities are willing to make those investments, you need to ensure that all the adjoining and adjacent infrastructure has the same design conditions ... The money's too limited to make poor decisions that aren't funded in the principles of sustainability, and if you have poor state criteria, how are you going to make sure that happens?"

Nichole Hefty with Miami-Dade agreed, saying that South Florida counties need improvements in infrastructure, but some of that infrastructure is managed by the state. Jurado pointed to beach nourishment as one particular area that's been sorely underfunded for years. Right now, she said, the requests for beach nourishment projects are about four times more than the state can fund. She said the state needs more legislators that come from local governments, because those are the ones who are most attuned to the issues that are most important to Florida residents.

Some state lawmakers have taken notice. The late April hearing Sen. Bill Nelson hosted in Miami, for instance, addressed some of the challenges Florida faces in tackling sea level rise.

“You could put up a dike, but it’s not going to do any good because through the substrate, like Swiss cheese, water flows,” Nelson said, adding that the state needed to ignore what the “one percent” of people say about climate change and instead come up with solutions to address the problem. “We need to be listening to the 99 percent of scientists.”



Some homes and roads on the Intercoastal Waterway in Fort Walton Beach, Fla. flooded from the storm surge of Hurricane Ike on Thursday Sept. 11, 2008.

CREDIT: AP PHOTO/MARI DARR-WELCH

And Rep. Joe Garcia, running for reelection in Florida’s 26th District, held a climate change panel a few days after Nelson’s hearing, saying that Florida is “faced with very real economic impacts now” as a result of climate change.

“From the tides of Key West, to the agricultural fields down in the southern portion of my district, inundated with ankle-deep storm water run-off, I’ve seen the effects on our community first hand,” he said.

Garcia said in an emailed statement to ThinkProgress that sea level rise was being “under-addressed” in Florida.

“The dialogue needs to be centered around the impacts sea level rise is having on our local communities and economic interests here in South Florida, and the great threat climate change presents to future generations,” he said. “I believe we have a unique opportunity to be proactive on this issue, placing ourselves ahead of the curve. Whether through legislation, or by other means, it is an opportunity we must seize.”

But that statewide attention to the growing threat posed by sea level rise is all too rare, say some members of the compact. So far, the candidates for Florida’s governorship have been mostly mum on the issue. Earlier this year, Charlie Crist, the democratic front-runner for the candidacy, told InsideClimate News that he “believes we can grow our economy and take on climate change at the same time,” but didn’t address sea level rise specifically.

After the National Climate Assessment was released, Gov. Rick Scott, who’s running for reelection, said there was “absolutely” work being done on the state level to protect Florida from sea level rise. Scott said the state’s Division of Emergency Management has spent \$130 million on flood protection around Florida’s coast.

“Water issues — issues like that are so significant to our state, so we’re going to continue to focus on those issues,” he told WPBF.

Scott’s office reemphasized the Governor’s Governor work with the Division of Emergency Management when asked for further comment by ThinkProgress.

“Scott has worked with the Division of Emergency Management to ensure our communities have the resources they need to protect families from flooding,” press officer John Tupps said in an email. “Over the past three years, Florida has invested more than \$130 million protecting communities along the coast from flood events.”

While state support has been spotty, federal assistance has helped the compact accomplish some of its objectives. Hefty highlighted funding from NOAA that helped Fort Lauderdale complete an Adaptation Action Area pilot project, which helped the city identify regions that were most at risk from sea level rise and create a plan on how to help these areas adapt. She also said the Department of Economic Opportunity created a statewide working group in Florida to look at how the state can build resilience to climate change and sea level rise.

The counties are making the best of that support, and working to gain more support from the state. Last year, Jurado attended a multi-county delegation meeting at the Florida Capitol that focused on sea level rise and infrastructure concerns.

So the conversation's being had, but it's not yet influencing state law or policy in a way that we need...

"So the conversation's being had, but it's not yet influencing state law or policy in a way that we need, in terms of the alignment of resources," she said.

Outside of Florida, the idea of regional collaboration is catching on. Members of the compact met earlier this year with a group of city planners from Durban, South Africa, who are looking to form a similar partnership to address climate impacts among municipalities in their region. The compact has also traveled to the San Francisco Bay area, another major coastal city at risk to sea level rise, to meet with city planners who wanted to learn more about the work the four counties did.

Torriente said it makes sense for other regions to be interested in the compact's work, which serves as a model of what can be done when counties work together.

"If it weren't for the work of the compact, and that kind of technical foundation that they put together, it would be a lot harder for cities to do this on their own," she said.

'You Can't Argue With The Ocean'

Regardless of what state politicians say about the issue, the members of the compact keep coming back to one thing: sea level rise is here, now, and it needs to be addressed.

"You can't argue with the ocean," Chris Bergh of the Nature Conservancy said. "When the tide is high, the ocean comes right up to our shores, and it comes in farther than it ever used to."

It's things like that, plus the flooding streets on a clear, sunny day and the increased damage from storms that's making Florida residents increasingly concerned about sea level rise. In their latest neighborhood survey, Fort Lauderdale residents ranked "prevention of tidal-related flooding" and "preparing for the future of the city" among their "very high" or "high" priorities. In Monroe County, Haag said she's planning meetings for the fall with locals to show them projections of sea level rise for the county,

talk to them about the impact of these change, discuss the costs of adapting vs. the costs of waiting, and get input as to what residents think are the most pressing problems related to sea level rise to address. Using that input, Haag plans to develop yearly objectives for the county to implement sea level rise adaptation measures.

“[Residents are] definitely aware because they live on the islands,” she said. “Everyone who I talked to — I think they’re looking for leadership from the county and from the compact to help prepare.”

Caroline Lewis wants to use Florida residents’ curiosity and concern about sea level rise as an outlet to educate them about climate change. Lewis is the director of CLEO, a Miami-based group that aims to educate residents about how climate change affects so that they can in turn use what they know to do something about the issue, whether it be adopting more sustainable practices in their day-to-day lives or pressuring their local lawmakers to take climate change — and the sea level rise it brings — seriously.



Projections for Florida under 3 feet of sea level rise.

CREDIT: NOAA

“Sea level rise is an incredible, easy access point for everyone, because our king tides decided to show us what the future’s going to be like,” she said. “So we really use sea level rise as an access point for people to understand the basic climate science.”

Lewis said she’s had “tremendous” interest in her Florida training classes, some of which are open to the public, while others are targeted at teachers, lawmakers and other groups. And some of her best successes have been the elected officials who have opted to take her workshops, primarily because they’re able to bring back the “fire in the belly” need for action on sea level rise to their communities.

Still, it’s frustrating for Lewis to hear state and federal politicians dismiss climate change and sea level rise. She thinks that Florida needs a multi-billion dollar investment if it is to fully adapt to climate change — updating its sewer systems, building sea walls and restoring dunes and reefs — but she doesn’t think the political will is there to invest those funds.

“We’re in a difficult state here in Florida,” she said. “I’m a little bit ready for much more action than our state is, and maybe our whole country is.”

But her work, the work of the compact and the attention Sen. Nelson and representatives like Garcia have given the issue in recent weeks gives her hope. Hefty said that’s what keeps her going, as well; the fact that, despite the stark predictions facing Florida, so many Floridians are doing all they can to try to stave off having to retreat from the coasts.

“It is sometimes daunting when you look at the data and look at the science and you think holy smokes, this is really scary,” Hefty said. “But when you look around and see all that we have here — this is just such a tremendous place to live and to be and we have so much here that we have to offer that we’re not willing to give up.”

From the Web

Sponsored Content by Taboola

A Shockingly Simple Solution To Joint Relief

Better By The Minute

Must Have Appliances Being sold For Next To Nothing

QuiBids

14 Social Security Benefits You Haven’t Been Taking

Newsmax

Ditch Your Old CPAP. See What You've Been Missing.

Easy Breathe

Warren Buffett Reveals How Anyone With \$40 Can Become A Millionaire

The Motley Fool

10 Child Celebrities You Wouldn't Recognize Today

Binge Watched

Don't Make This Protein Mistake

RealDose Nutrition

Top 10 Cancer Causing Foods You Eat Every Day

NaturalON