

# 4 ways Florida's climate change struggle informs new UN report

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Florida's experiences helped researchers develop a new United Nations

climate change report that offers a stark view of how global warming threatens the world and what people can do to address it.

The Intergovernmental Panel on Climate Change's more than 3,500-page paper compiles findings from numerous studies that show people have made the earth hotter by burning fossil fuels, and that [climate](#) change threatens to kill off plants and animals; leave people with less food and water; and exacerbate droughts, floods and bouts of extreme heat.

Humans still have some control of their destiny, according to the United Nations panel. The report emphasizes that people can build smarter, more resilient communities to protect themselves from disasters and could evade the most severe damage by cutting greenhouse gas emissions.

Florida—lush, surrounded by water and sweltering—is as vulnerable to global warming and [sea level rise](#) as anywhere in the U.S. Lawmakers are spending hundreds of millions of dollars to build defenses to flooding, but the state has not adopted targets or sweeping policies to reduce fossil fuel emissions.

Here are several ways that studies from Florida helped inform the report:

## **Flood risk and adaptation**

The panel describes how sea level rise and flooding could force residents to move from certain coastal communities, citing Florida as an example. It relies on research that already suggests some lost real estate value around Miami.

While the state is at natural risk because of its geography, the report spotlights how vulnerability is also a product of development, including along the Gulf of Mexico. The threat comes not only from people

choosing to build in risky places, but also from weak construction standards. Hurricane Andrew, which hit Florida in 1992 and caused widespread wind damage, is mentioned as an example. That storm encouraged state leaders to strengthen Florida's building code.

Tampa Bay is not specifically referenced like Miami. But the area is intensely vulnerable to storm surge flooding, a danger that swells with sea level rise. The United Nations panel noted sea level rise, surge and heavy rains are expected to cause bigger floods in the future.

One more local mention: Tropical systems can force people to move, shifting populations across the world, like how Puerto Ricans left the island and moved to Florida following Hurricane Maria in 2017.

## **Harmful algal blooms**

Florida's coastline is already beset by toxic algae blooms. Red Tide is the perennial threat facing the Tampa Bay region.

Climate change could encourage Red Tide growth by altering the salinity of water or increasing the level of nutrients dumped to bays through rain runoff. Blue-green algae, a problem in Southeast Florida, could benefit from warmer water, too.

Florida's Harmful Algal Bloom Task Force last year wrote: "Without hard work and careful planning, the challenges created by (Harmful Algal Blooms) are likely to worsen due to the influences of other environmental stressors associated with climate change and Florida's growing population."

The United Nations report touches on problems that are at least partially the result of climate change, and how they cause disruptions that hurt local businesses. It cites research from Florida showing tourists spent

less money during past blooms.

But it also uses the state's example to spotlight a response. Forecasting blooms and their impacts—an effort underway in Florida—helps people to avoid the toxins from algae, according to the panel, limiting sickness.

## **Coral reefs**

The effects of climate change, like warmer oceans that can spur coral bleaching, add to existing problems and pose a major threat to [coral reefs](#), such as those off Florida. The state has already been devastated by stony coral tissue loss disease.

The United Nations panel notes research that suggested Florida could lose significant economic activity because of damage to its reef tract—popular among anglers and divers and a crucial habitat for sea life.

But efforts to save corals also get a nod in the report.

The Florida Aquarium in Tampa has been part of the response, breeding corals in a lab and outplanting them to replace lost sections of the reef.

## **Groundwater**

There are still plenty of subjects on which science is unsettled about the effects of climate change. For Florida, groundwater is a big one.

The latest United Nations paper explains that improved monitoring is needed to fully understand how climate change will affect stores of groundwater across the world. It notes that the groundwater supply has dropped in many places because of pumping for irrigation. The authors

reference a study that showed reduced spring flows in Florida.

Aquifers in tropical zones, the paper said, could respond to climate change differently than in drier areas.

The consequences of climate change's effect on freshwater supplies are enormous. The paper explains that use agreements and water laws were written for past conditions. Scarcity has already led to court battles, including the Florida v. Georgia case (which Florida lost) over flows from Georgia to Apalachicola Bay.

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