



ENVIRONMENT

Lots of sun, and brown slimy seaweed, in the forecast for South Florida beaches

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From the Gulf of Mexico up past the Keys and now to Miami, sargassum is coming to your beach.

If you've been to a South Florida beach lately, you've certainly encountered it. Usually, it's little more than an annoyance — slimy brown stuff to avoid in the surf. But at some times and some places over the last month, piles of it have lined the shore, where it stinks as it dries in the sun.

Sargassum is better known as seaweed, macroalgae that originates in the Gulf of Mexico and floats along the water as far out as the Amazon River and the western coast of Africa.

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The amount of sargassum that make it to the Florida coast depend on the tide and the wind, and are highest during the summer months.

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"It fluctuates throughout the seasons," said Margarita Wells, Miami Beach's assistant director of environment and sustainability. "The same way there's a corn crop."

Sargassum has been around forever, but it's been showing up in large quantities since 2011, after an unusual pattern of winds and ocean-surface circulation arose over the Sargasso Sea, said Lew Gramer, a scientist at the University of Miami Rosentiel School Cooperative Institute for Marine and Atmospheric Studies. Since then, mass accumulations have been frequent. Sargassum has taken over beaches in 2011, 2012, 2014, 2015 and now 2018.

And while it's hit the Caribbean the hardest, mass amounts of the seaweed could come to South Florida, said Brian LaPointe, a research professor with Florida Atlantic University-Harbor Branch Oceanographic Institute. Last month, the South Florida Sun-Sentinel reported carpets of the stuff blanketing Delray Beach and Hollywood.

"I think the potential exists that the situation could worsen in parts of Florida," LaPointe said. "We've seen problems in the Florida Keys in the past couple years. ... It's gotten to the point in places where people will avoid swimming. It's not something you'd really want to swim through or in."



Mindy Borkson of Hollywood walks through a bed of seaweed washed up in Dania Beach at Dr. Von D Mizell-Eula Johnson State Park in May after a Memorial Day weekend storm.

Joe Cavaretta - Sun-Sentinel

In the Caribbean, sargassum has pushed tourists off the beaches, washing up on shores and leaving behind thousands of pounds of algal carnage. To remove the algae, some authorities have resorted to using dump trucks. Many beaches have had to close down, un-walkable and un-swimmable.

But sargassum is only a problem for people when it shows up in large amounts. Normally, it is actually a key part of the marine ecosystem. City of Miami Beach official Melissa Berthier said sargassum provides nutrients for Miami shores and migratory birds. It's also a host to a host of marine animals including crabs, shrimp, and small fish who serve as prey for larger fish like mahi-mahi. Juvenile fish also hide from predators within the weeds. LaPointe called sargassum a "fish factory."

"It really is a unique community and we're lucky to have it," LaPointe said.

On Miami beaches, the main gripe against sargassum is that it's a bit inconvenient. In the morning, Miami-Dade County's Department of Parks and Open Spaces uses a machine that mixes the sand and sargassum, Wells said. She is part of a team that monitors the amount of sargassum on the beach, which varies by the day. She said that the sargassum plays an important role in feeding Miami dunes, which serve as the first line of defense against hurricanes.

“I think it's good for people to remember that as they're wading through it, even if it's not pleasant, is that it's actually a really really valuable thing not just for our community but for our beaches,” Wells said.

Sargassum is a world traveler. Unlike most marine plants, it is not to tethered to the ocean floor. It's covered in air bladders and floats along the ocean surface, carrying with it small fish and other small marine animals. These small air pockets, which slightly resemble tiny grapes, actually gave sargassum its name, derived from the Portuguese word for a breed of grapes. Christopher Columbus is sometimes credited as the originator of the name.



Seaweed lines the shore at Dania Beach. Thick rafts of seaweed have washed up on South Florida beaches, providing food for wildlife and an icky, sea-lice infested barrier between the beach and the ocean. Although seaweed is normal, seaweed blobs this thick are not.

Mike Stocker - Sun-Sentinel

Most sargassum grows off the shore of the Gulf of Mexico. Like all plants, it needs nitrogen, phosphorous, and sunlight to survive. In recent years, the sargassum has had more than its fair share of nitrogen, thriving on the fertilizer, livestock manure, human waste and sewage that seeps into the Gulf from the Mississippi River. With plenty of nitrogen and sunlight, the only limitation for sargassum growth is the element

phosphorous, which it gets mostly through dust and mineral deposits. Humans have pushed the nitrogen to phosphorus ratio to much higher levels than existed in the 1980s, LaPointe said, making way for massive algae growth.

As the sargassum grows, it starts moving along ocean currents, which transport it from the Gulf to the Florida Current via the Loop Current, and then on to the Sargasso Sea, Tropical Atlantic and Caribbean. The traveling sargassum is often accompanied by mountains of plastic trash. If winds are strong, it can end up near the Sahara desert, the Amazon River, or here on the Florida coast, bringing problems when it arrives en masse.

While sargassum isn't going to hurt anyone by itself, beachgoers should be mindful, LaPointe warned. Jellyfish and other small, stinging animals often live in the algae. Washed up sargassum can also entrap sea turtles or attract sea lice, LaPointe said. Too much sargassum can also cause "Dead Zones" in the water, where there is not enough oxygen for other organisms to survive, or produce hydrogen sulfide gas, which gives the beach a "rotten egg" smell.

On a weekday afternoon on South Beach, the sound of reggae and the smell of marijuana were in the air. Sargassum, scattered across the beach, wasn't causing much of a stir. But when asked, several beachgoers expressed qualms with its presence.

"It's coming up pretty crazy," said Nico Thompson, 21. "I gotta carry my girlfriend into the water because she doesn't want to touch the seaweed."

Malorie Garrett, a visitor from Knoxville, Tennessee, came out stronger, saying that she would probably go home early because of all the seaweed.

Despite the sargassum, the green "low hazard flag" waved on the beach. People just took the extra seaweed in stride. Others were big fans.

"Seaweed is probably one of the best things on earth," said Miami resident Jamal Adams. "Just a gift from god. basically."

The End