ENVIRONMENT

Oyster reefs endangered by increasing use of non-concrete vinyl seawalls, researchers say

Scientists have observed oysters that are not attaching correctly to vinyl seawalls compared to concrete ones.

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SARASOTA, Fla. — There's growing concern among Tampa Bay area researchers about the impact of non-concrete seawalls on sea life habitats.

Aside from protecting waterfront property and shorelines from things like high tide and erosion, seawalls are also among some of the important artificial habitats for oysters. However, researchers say the increase in the use of vinyl sea walls, instead of concrete, is impacting oyster growth and replenishment.

According to Sarasota Bay Sanctuary program researchers, vinyl seawalls are fast replacing concrete because of cost and durability. This, they say, is preventing oyster reefs from forming and could, in turn, affect water quality.

"One of our largest oyster reef habitats are these concrete seawalls and they are being replaced with the type that doesn't grow oysters very well," Dave Tomasko with the Sarasota Bay Sanctuary program said.

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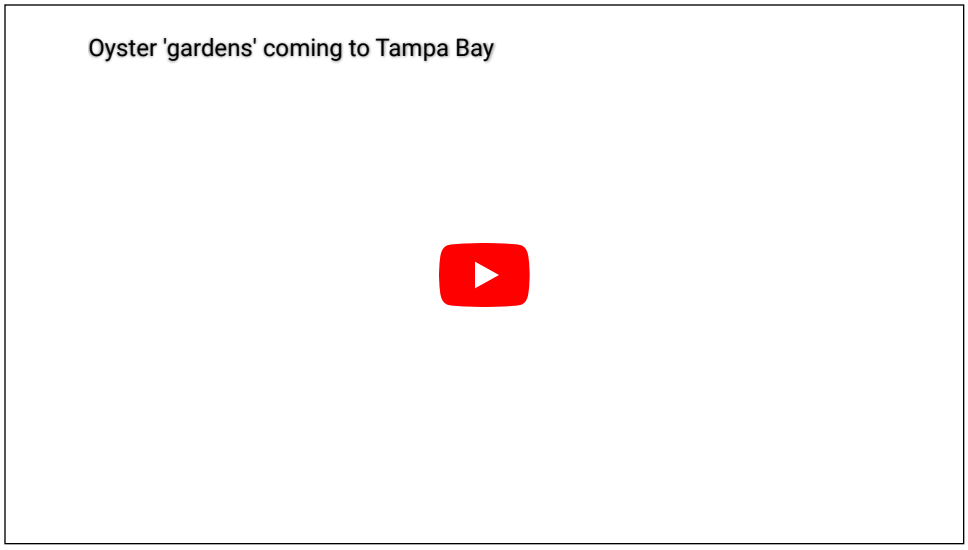
Tomasko and his team studied several seawalls in the area and their findings raised troubling concerns.

Of 32 seawalls studied, 16 of which were made of plastic-vinyl material and 16 made of concrete, scientists observed oysters that were not attaching correctly to the vinyl ones compared to the concrete ones.

"That's an issue in terms of our water quality because oysters filter thousands of gallons of water a day and so, we spent a lot of money putting oyster reefs into the Tampa Bay and Sarasota Bay. This is losing a lot of oysters by doing this replacement," Tomasko said.

The researchers have come up with what they say could be a potential solution. SBEP is now working on a shoreline project in partnership with the town of Long Boat Key to help show other waterfront communities how to solve this problem. Under the pilot project, they plan to install concrete mangrove-like panels over the vinyl seawalls. The stem-like grids would help the oysters attach properly.

Before Longboat Key's seawalls became a target for the project, researchers had already set up an example in Englewood as far back as 2016. That sample panel has already shown positive signs in helping restore artificial oyster reefs on seawalls.



Researchers hope property owners who have existing vinyl seawalls or those who intend to install them to save money and see the benefits of adding the mangrove concrete panels.

"Since you live on the water, you're the person that has the best benefit from improving our water quality. Maybe you can find a way to do a concrete sea wall but if you can't, maybe this is a way to lessen some of the impact of losing these oysters by replacing concrete with plastic," Tomasko said.

The panels will be placed all along the shoreline of the Bayfront Park in Long Boat Key. The project costs around $500,000 and is funded under the Bipartisan Infrastructure Law.

ENVIRONMENT

'It's inevitable': Florida scientists expect coral reef bleaching amid high ocean temperatures, climate change

Florida's coral reefs not only house over 40 species of reef-building corals, but they also provide protection for people.

Credit: the Ocean Agency - stock.adobe.c

Author: **BriShon Mitchell**
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ST. PETERSBURG, Fla. — Scientists are closely monitoring the only coral reef system in the U.S. as a sudden marine heatwave sends ocean temperatures soaring to unprecedented highs along Florida's gulf coast.

Waters surrounding all of Florida are currently 4 to 5 degrees warmer than normal this time of year, the National Weather Service said. Ocean temperatures are currently clocking 90 to 93 degrees Fahrenheit around much of Florida, which is extremely warm.

Scientists say in a combination of climate change and a new El Nino, which typically brings warmer oceans, may have disastrous effects on Florida's coral reef, like coral bleaching.

The Florida Department of Environmental Protection said coral bleaching happens when corals are stressed by changes in their conditions and they "expel colorful algae living in their translucent tissues," which ends up showing their white skeleton.

"It's inevitable in Florida," The Florida Aquarium Scientist Rachel Morgan said in part. "Bleaching has become fairly regular. There have been some major bleaching events.

"It gets warm every summer. There is bleaching every summer and there are corals out there, today, who have made it through those events."

Although a bleaching event doesn't mean certain death for the coral, Morgan said coral can only sustain for so long before eventually dying off due to lack of nutrients.

"What we worry about [is] having a heat event so early in the summer, it's relatively early, it's July. It's warm already. We still have August and September to get through and if this is what July looks like then it makes us hesitant, again, about August and September," Morgan said. "Will these corals be able to sustain themselves through all of this or will this bleaching event be followed by a mortality event?"

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Morgan said scientists hope the corals will be able to recover from the inevitable bleaching event, and even if they do, there is still concern about other factors that are "beating them down" like increased major weather events to human pollution.

Florida's coral reefs not only house over 40 species of reef-building corals, but they also provide protection for people.

The New York Times reported that coral reefs take on the first impact from storms. In the United States, reefs generate economic benefits to the tune of $3.4 billion annually for fisheries, tourism and coastal protection, according to NOAA.

To fight against the decline of some coral species, threatened coral has been grown in-house at The Florida Aquarium to eventually be placed back into the ocean.

But Morgan says it's only so much scientists can do.

"We are talking about a large-scale area. And there is only so much we can do and there are so many things we are battling," Morgan said.

Morgan did give a glimmer of hope by listing off what Floridians can do to help protect the coral reefs. She said for some it is to watch their marine debris while out on the water, for others it's wearing non-toxic sunscreen and being mindful of one's carbon footprint.

Here's a full list of tips on how to protect coral reefs.