

Florida's oysters in Apalachicola, Cedar Key face climate threats to survival

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Climate change isn't a primary suspect in the stunning extermination of Apalachicola Bay oysters, a calamity pegged to a variety of atrocities.

But rising sea levels, warming waters and more intense storms could conspire to ensure the bay remains a graveyard for oysters despite costly efforts to resurrect it and put the delicacies back on restaurant tables.

That prospect troubles scientists at Apalachicola Bay in Florida's Panhandle and is a worry for one of the state's last, though struggling, strongholds of oysters—an area of Gulf of Mexico waters surrounding the island community of Cedar Key.

"We've got layers of things that are going on here," said Sandra Brooke, scientific director at the Florida State Coastal and Marine Laboratory, of previous injuries inflicted on Apalachicola Bay.

At more than 200 square miles, the biologically supercharged bay blends the fecund waters of the Apalachicola River and the intensely productive Gulf of Mexico, all along coastline shielded from

Florida's development pressure by national forest, wildlife refuge and Tate's Hell State Forest.

What ushered fisheries collapse there—whether badly regulated seafood harvesting, withdrawals of river water by cities as far as Atlanta or changes in nature—remains debated and unresolved.

The added stress of [climate change](#), potentially rendering waters too salty, warm or otherwise inhospitable for oysters, may doom the bay beyond recovery.

"If we continue to hammer it, then it will not be able to cope," Brooke said.

In much of Florida, climate changes threaten to finish off environments already beaten down by development, dredging, pollution, water usage and other human-inflicted harm. The way to fight climate change, say many scientists, is to restore environments to be healthy and resilient—to better cope.

Just north of Cedar Key, University of Florida scientists recently reconstructed the 3,000-year-old Lone Cabbage Oyster Reef at a cost of more than \$8 million. The money was from a compensation fund of the 2010 BP oil spill in the Gulf of Mexico.

Cedar Key is within another of Florida's stunningly productive estuaries in a region called the "Big Bend." While not a bay, the waters there are shallow far out into the Gulf of Mexico, lush with seagrasses and enriched by the tannic waters of several creeks and rivers.

Nearly 90% of the Lone Cabbage reef had disintegrated in recent decades. Researchers suspect the cause was a declining volume of fresh water flowing down the nearby Suwannee River to the area, resulting in deadly high salinity.

The restoration work installed limestone boulders

and other material along 3 miles and 8 acres of reef, acting as a "leaky dam" to hold back the Suwannee's fresh water and to reduce salinity to levels healthy for oysters. They have since attached themselves to the rebuilt reef and are showing signs of thriving.

"But the Lone Cabbage reef is applying a Band-Aid," said Peter Frederick, a lead, UF investigator in the project.

Frederick said the reef had survived devastating droughts in past centuries. The more recent tipping point was agricultural and municipal water withdrawals that have shriveled flows in the river.

Without water conservation that ultimately restores the amount of freshwater in the Suwannee, climate change could readily undo that Band-Aid, Frederick said.

"Any changes in climate is going to affect salinity even more," he said. Without restoring the Suwannee's flows, "we're pretty sure we are going to lose those coastal oyster systems."

Possible climate changes already are being noticed already at Cedar Key, and not just by scientists.

A longtime oyster family, Cedar Key native Jerry Beckham and his partner, Laura Adams, have worked local waters, harvesting clams and oysters, nearly in all times of the year in all conditions. But their coastal world has gotten unpredictable and different.

"The high tides are higher and low tides are lower," Adams said. "Our water is changing."

The epic collapse of Apalachicola and the peril faced at Cedar Key have underscored the larger role of oysters beyond being served on the half shell as slightly salty appetizers.

Oyster reefs, and their eco-cousins of coral, mangroves, seagrass and salt marsh, make food, shelter and overall habitat for entire communities of aquatic life. When the oyster reefs are gone, so are fish, crabs and other creatures.

When healthy and growing, oyster reefs also provide shoreline defense against storms.

Those "ecosystem services," as well as the jobs and economic boost provided in rural areas, make the task of restoring and protecting oysters even more pressing.

Expectations are particularly high for the FSU laboratory in the community of St. Teresa at Apalachicola Bay's east end. Earlier this year, the lab received \$8 million, a sum also coming from the BP oil spill compensation.

The grant is to finance an investigation into the collapse of oysters and prescribe a path for recovery. It's no small challenge.

"This is not something that's corrected in five years," said the lab director, Felicia Coleman. "You're talking about 10 or 20 years."

As a reminder of FSU's challenge, a road sign at the outskirts of Apalachicola still boasts of the city's and bay's lost fame: "Oyster Capital of the World."

"When I was a teenager there was no limit," said Shannon Hartsfield, an Apalachicola native. He was taught by his father the backbreaking skill of standing on the deck of a small boat while wielding tongs that could clutch onto shells deep under water.

During its prime, the bay was speckled with hundreds of the iconic oyster boats.

Hurricanes Kate and Elena in 1985 walloped the bay and its oyster fishery, a blow that took several years to recover from.

Also unfolding then was a rancorous legal war between Florida and Georgia over the amount of water taken by the Atlanta metro area from the river system flowing to the Apalachicola River and to the bay.

Georgia leaders rebuffed Florida's allegations that too much water was being removed, driving up salinity and killing oysters in Apalachicola Bay. The fight has gone to the U.S. Supreme Court and

continues today.

Still, by the end of the last decade, the bay supplied about 10% of the nation's oysters and about 90% of Florida's production.

Then came the BP oil spill, spewing more than 200 million gallons of crude.

Months later, Florida authorities, fearing the spill would—but never did—enter Apalachicola Bay, opened its water to unprecedented harvesting as an act of salvaging seafood.

Within a year, the oyster fishery was collapsing, and then-Gov. Rick Scott asked the administration of former President Obama to declare a disaster, which did so in late 2013.

Unlike after Kate and Elena, there has been no sign of any rebound.

This past spring, Hartsfield looked out across the bay from a park in Apalachicola and pointed to a distant silhouette in the afternoon glare.

"You have one boat out there working right now," Hartsfield said.

"I was told he scrapes up two bags a day, which is \$120, which is pretty slim pickings because he's going to have at least \$25 to \$30 in fuel and snacks and gloves. I don't know how he's doing it."

For Steve Rash, owner and president of Water Street Seafood in Apalachicola, the most urgently needed step is to close the bay to any oyster harvesting, a move that is widely supported.

Ducking in and out of a series of walk-in coolers, he pointed out grouper from Mexico, mahi-mahi from Ecuador, farm-raised salmon from Chile and tuna from all over the world.

"We don't buy Apalachicola oysters anymore," said Rash, who while still a student sold seafood from a roadside stand.

"We quit buying them a year ago," he said. "I can't be saying the bay needs to be closed to harvesting

and then turn around and buy them."

He brings in and distributes oysters from Texas producers and from Cedar Key, meaning that Panhandle restaurants, including those in Apalachicola, are serving imports.

Rash also has been active in local talks and efforts toward restoring Apalachicola Bay. He and others think the next step is clear and needed immediately.

Replace the countless tons of shell removed from the bay, ideally using fossilized shell readily available not far away, to give young oysters a base to grow on, Rash said.

It must be done with precision, he said, in location and size. Until that happens, there isn't much hope for the bay at large, he said.

"The bay is failing; the bay is dying; the fish, the shrimp and the crabs are disappearing," Rash said.

Some of the consequence of Apalachicola Bay's collapse has rippled to Cedar Key, 125 miles southeast across the Gulf along Florida's Big Bend coast.

Cedar Key is one of several communities in the U.S. that claim the title as clam capital. The shallow [water](#) surrounding the city and island has the right kind of mud and the farming of clams there has been a celebrated success for decades.

Those waters also host a small, stressed and still-functioning oyster fishery, something not overlooked in Apalachicola.

Skilled, idle and needing a paycheck, Apalachicola oystermen have been hauling their boats to Cedar Key to harvest oysters there.

It's legal but has provoked hard feelings among the island's residents. There have been reports of boats and trucks from Apalachicola being vandalized and a spreading reputation that the invaders will take every oyster they can find.

Jeanine Beckham said she understands the

distress for Apalachicola harvesters but doesn't want the pressure they are putting on local oysters.

"I won't buy from them, and I won't have anything to do with them," said Beckham, owner of Cedar Key Oyster & Clam Co., a seafood processor, packer and store at the edge of the city. "I would rather they would be able to [oyster](#) in their own zones because our zones are pretty small compared to theirs."

Beckham and one of her workers shucked shells in a small operation smelling faintly of bleach and scrubbed floors, filling 16-ounce tubs with about 30 oysters worth \$20 on a cooler shelf.

She said the business is difficult and getting more so with mounting regulations and an uncertain supply of oysters.

Beckham, however, has options: a handsome boat, tongs and wet suit for diving down to hand-gather oysters.

"I'm a seafood harvester as well," she said. "And the prices are really good right now."

The prices are good because of what's happened in Apalachicola Bay.

Leslie Sturmer, an extension agent in Cedar Key with the University of Florida Sea Grant program, said state harvest statistics show an upward spike in Apalachicola oysters just after the BP spill and an inexorable plunge since then.

Meanwhile, harvests at Cedar Key and to the north near the smaller community of Horseshoe Beach have trended steadily upward.

As of last year, Cedar Key was the Florida capital of oysters.

"People want their livelihood to continue," Sturmer said. "It's not a large fishery but it's been very important to the families that have relied upon it as a primary source of income."

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