The Lost Pearl

by JANISSE RAY

Photographs by
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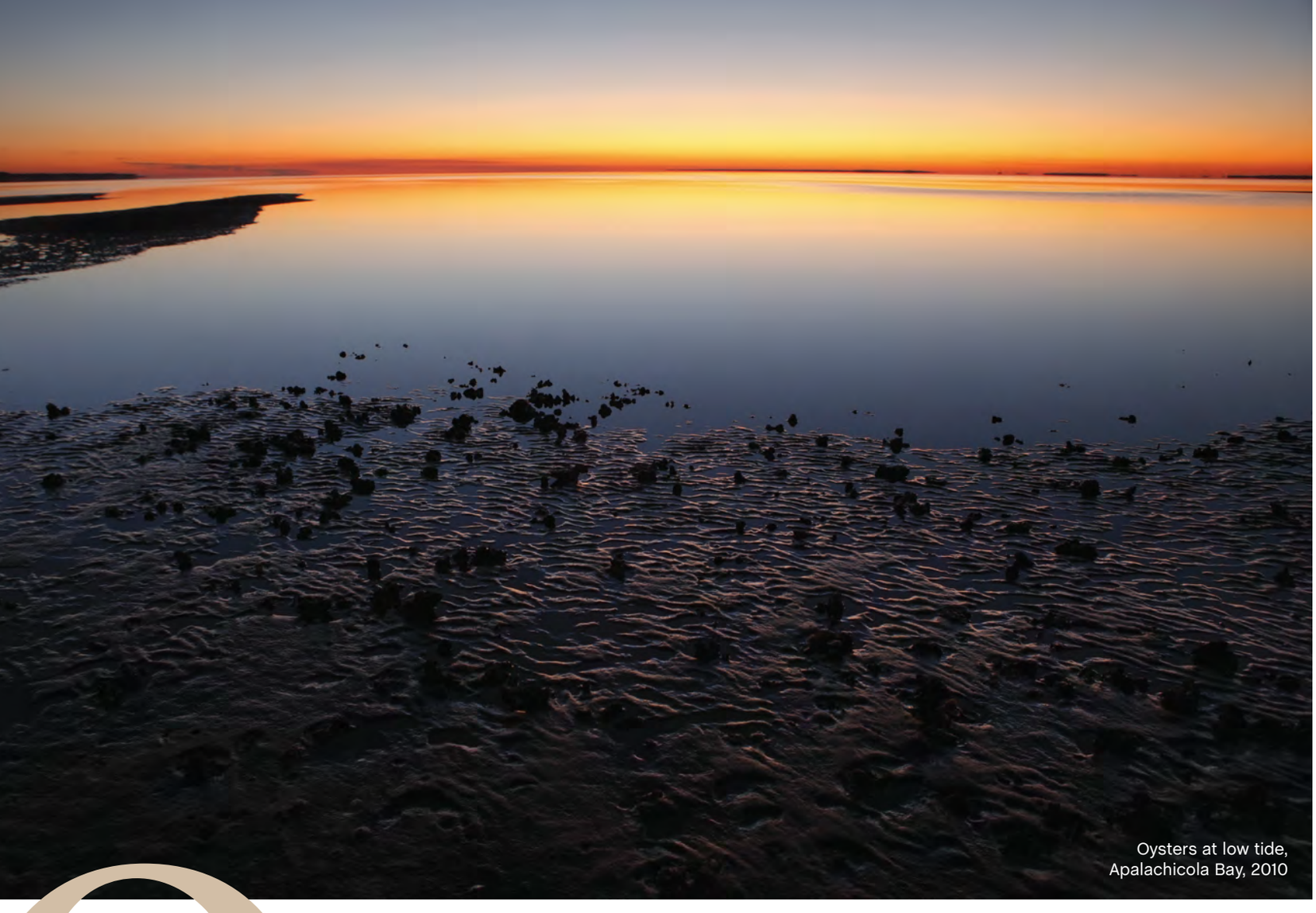
What happened to the Apalachicola oyster?



Oysters at low tide, Apalachicola Bay, 2010

On the Panhandle coast

of Florida, the so-called "Forgotten Coast"

because it's the least developed in the state, an enormous sedimentary river meets the ocean. This watershed starts in the Blue Ridge foothills as the Chattahoochee and flows south, dividing Georgia and Alabama. It is joined by the Flint at Lake Seminole, pours through the Woodruff Dam, and emerges as the Apalachicola. Wide and full of life, micro and macro, the Apalachicola River gathers the wildness of Apalachicola National Forest and rolls past the seaside village that bears its name to deliver nutrients to the bay.

Apalachicola Bay is legendary. Rich with life, the bay is almost perfectly shielded from the vagaries of the ocean by two barrier islands, St. George and St. Vincent, which form a cupped and protective hand. For millennia this estuary was one of the most productive in the northern hemisphere.

I was twenty when I first saw the place. I had enrolled at Florida State University, hoping to study with a poet whose work I admired. The coast was Tallahassee's playground, and I spent long, blistering days belly-surfing in the waves. The Panhandle coast was famous for its blindingly white beaches, its history of land preservation, and, more than anything, its mother lode of oysters.

I remember a dozen glistening oysters nestled in their half shells, delivered to our table after a day at the beach, while I relaxed with friends in the salty air. I watched gulls circle, listened to fish crows, felt the evening sun on my forearms. The waiter brought lemons and crackers, horseradish and hot sauce. But the best oysters need nothing. The first taste had marshes in it. Then came the earthy, fleshy, volcanic madcap, followed by an aftertaste of the salt sea.

WE FORGET SOMETIMES THAT FOOD comes from places. We forget the places. Wild food, healthy food, comes from functional places, from fertile fields and fertile forests and fertile oceans. Back then, all those years ago, I saw the crazy fecundity of Apalachicola Bay with my own eyes.

One clear Saturday twenty-five years ago, my friend, the oceanographer Jeff Chanton, took his family and mine motorboating out to a long crust of sandbar extending from a barrier island. On the bay side, hundreds of willets, more than I'd ever seen or imagined to see, clustered so tightly that they appeared to be a single flat animal that occasionally stretched one of its thousand wings.

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Across shallows where tidewater flowed, a marbled godwit furiously probed wet sand. Two or three ruddy turnstones scooted about, their shoulders gleaming like polished mahogany. A jury of black skimmers rose from the thicket of willets and flew to an exposure of sand farther east. The white laughing gulls were crowned with onyx, their wings gray stoles edged in black. Brown pelicans, wingspans as wide as dinner tables, banked above the rookery. Every ounce of energy turned to procreation. It was as if the world were pregnant, and this was her womb.

The sandbar was a big nest, and through the binoculars I was lodged inside it. Although I could not see them, I knew that eggs would be tucked here and there across the spit, and those eggs would hold the birds of the next generation.

My friends eased away from the rookery and landed far down the beach. As we walked, treasures lined the strand—purple corals and sunburnt sponges and parts of horseshoe crabs and black rectangular cases of manta eggs. Fresh green seaweed, perfect seashells, a sea turtle carapace.

Apalachicola Bay then was full of life—not just shorebirds and sea turtles but a limitless abundance of flounder, mullet, grouper, blue crab, shrimp, scallop, oyster. We'd buy oysters by the burlap bag and roast them, standing around autumn fires, oyster knives in hand. I thought that as long as the world persisted, as long as humans could hollow a boat, they could cross the flat pan of the bay and feast on life.

I was wrong about that.

IN THE SUMMER OF 2020, THE OYSTER fishery closed in Apalachicola Bay. By December, the Florida Fish and Wildlife Conservation Commission (FWC) had banned all harvesting for at least five years. Something was happening to the oyster—nobody knew exactly what, although lots of people had ideas.

To understand how shattering the announcement was, scrape a kayak into Indian Pass when the bay is peaceful and paddle a quarter mile across to St. Vincent. Step onto the beach, pull your boat out of reach of high tide, and start walking. You'll come to long swales of ancient oyster shells—middens—discarded by native communities as many as four thousand years ago.

These St. Vincent middens "provide some of the oldest evidence of human presence in Florida's coastal zone," wrote Susan Cerulean, an important conservation voice, in her book *Coming to Pass*.

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For thousands of years, the oyster has sated people along the Gulf of Mexico. Apalachicola Bay is impressive not only for the sheer number of oysters it has produced but also for their tremendous sizes. Researchers at the University of South Florida (USF) studying middens have found oyster shells seven inches long. Before the closure of the bay, three to four inches was norm. Stephen Hesterberg, who led the USF study, said that native people enjoyed "a range of oyster sizes that no longer exists today." If we can figure out why oyster size declined, he says, that information might help us understand why oyster populations declined.

Florida began tracking oyster harvests in the 1980s. Harvests varied year to year, but on average oyster fishers sold about 1.8 million pounds of meat annually. The

An oysterman takes a break from tonging in Apalachicola Bay, 2009.

year 2012 busted all records—oyster fishers in Apalachicola Bay raked up and sold over 3 million pounds of oyster meat, valued at almost 9 million dollars.

After that, the numbers plunged, every year lower, all the way to 18,000 pounds, total, in 2020. In eight years, Apalachicola Bay had gone from 3 million to 18,000 pounds of oyster meat.

What in the world could have happened? Was it the Deepwater Horizon oil spill? Was it agricultural pollutants? Was Georgia taking too much of the Apalachicola River's fresh water, skewing a delicate balance?

BROOKS WADE SAW THE RISE AND fall. Wade is a happy guy in his sixties, strong of body and blue of eye. Born in Ocala, Wade moved to the coast as a young man, first working blue crabs, then managing a seafood business, and finally running an oyster house.

Oysters grow from muddy substrate in rough sheets. Their shells are so sharp they will cut feet and hands like razors. To harvest them, oyster fishers ease their boats into shallow waters, then stand on their decks wielding long tongs with metal claws on the ends, using the tongs to break off, rake up, and lift oysters into their boats. As a tonger dumps, a sorter picks out oysters of edible size and throws everything else overboard.

"The oyster industry was *The Industry*," Wade told me. "At one point I had over forty oystermen plus twenty sorters working for me. The boats would come in at 2 or 3 P.M. and we'd work until midnight, washing, sorting, and grading." In the 1990s, Wade was shipping 1,000 pounds a day to markets in New York, San Francisco, Las Vegas, Honolulu.

"I saw the fishery explode," he said. "I remember sitting in the oyster house looking out a big window. You just can't imagine how many oyster boats were out there—fifty boats, three or four tied together in one place."

There were times—new or full moons—when the oyster fishers benefitted from radical negative tides. Instead of 300 bags a day, they would harvest 1,000. "For a few years it was breathtaking," Wade said. Fishers called that Hogging Weather. Those days are gone.

Apalachicola Bay wasn't just "a place filled with oysters from one end to the other," as Wade put it. The place was producing some of the best-loved oysters in the world, oysters with the flavor of clear blue ocean, not mud.

"Why did they taste so good?" I asked.

"Magic," Wade laughed. "No, what makes an oyster tasty is a combination of salinity and fresh water." (To get technical, that's fifteen to twenty-eight parts per thousand of salt.) The salinity in the bay, especially in places like Indian Pass and Cat Point, was perfect, a balance that had lasted thousands of years. "The thing about wild fisheries," said Wade, "if humans are not damaging them, they come and go." But they always bounce back.

Not now.

"So you saw an entire fishery die," I said to him.

"Not only did I see a fishery die, I saw an estuary die," he said. "There is no guarantee that it will ever come back. They can spend millions of dollars and it may not come back."

An estuary dies when it cannot rebound from human assaults, including overfishing. Runoff laden with agricultural pollutants, chemicals, or silt can lower oxygen levels, damage water quality, and

kill marine life, sometimes creating entire "dead zones."

IF APALACHICOLA BAY HAS A CHANCE of recovery, we have to understand what caused the collapse. For that, I turned to Sandra Brooke, lead scientist with the Apalachicola Bay System Initiative. Her job is to understand why a $9-million industry is gone and how we can get it back. Because of the COVID pandemic, I spoke with Brooke by phone, a photograph of her on my screen—she's slim, with sun-lightened hair.

Brooke grew up in England, in a cold house with only one fireplace. She told herself that when she was grown, she was going to live somewhere warm. That's how she became a marine biologist, a profession that plunged her into the failing tropical coral reefs and into deepwater canyons at the bottom of the failing ocean. Now she's on the Gulf Coast of Florida trying to save another beleaguered sea creature. She's serious and a bit stressed, which I find understandable.

As with most big, causal questions, the answer to this one—*What happened?*—is complicated, Brooke explained. All those boats on the bay were part of the problem. "If the system's in trouble and you continue harvesting, it's going to contribute," she said.

Part of the problem, too, was that oyster harvesting removes more than the edible commodity from the system. It also removes substrate. "Oysters are strange creatures. They make their own habitat," said Brooke. "With most things, you can overfish them for a little while and then they will bounce back. But with the oysters, you are removing their habitat as well." Habitat means oyster shells, which often end up in a dumpster out the back door of a restaurant in some far-flung place like Atlanta or Anchorage.

In years past, a line item in the Florida budget stipulated that fish houses return a certain amount of shell to the bay in order to maintain reef height. This replaced some of the oyster home. "Oysters don't live in mud," Brooke said. "They have to reach food in the water column." By the late 1990s, however, lawmakers had struck the reshelling program from the budget.

Then came a significant drought in 2007 and 2008. Freshwater flow into the bay from the river decreased. With higher concentrations of salt, marine predators—most notably the oyster drill, but also queen conchs and marine fishes—moved in. "You're getting to the point now that the population is getting hit hard by a number of different things," said Brooke, "and it's not being allowed to recover."

In 2012, another drought brought more predators, lots of overharvesting, and no reshelling. "At that point, Mother Nature said, 'I can't do this anymore,' and the system crashed," Brooke said.

Brooke returned to the problem of overharvesting. "Given that the fishermen are obeying the laws, and overharvesting happens," she said, "the responsibility must lie with management." FWC, which manages the fishery, traditionally responded to declining numbers by lowering the bag limit—how much a single fisher could take. It did not limit permits, nor did it set an annual quota. It had no statewide management plan for oysters, such as there is for the scallop and for many other seafoods. "The situation we have now is a culmination of management not doing as well as it should and a series of environmental and human-induced impacts," said Brooke.

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what caused the collapse.

Loggerhead hatchlings make their way to the water, St. George Island, 2006.

Still, closure was controversial. At one point, however, Brooke said, oyster fishers were down to one bag a day. "That's not a living," she said. "That's beer money." Brooke has a soft spot in her heart for the people who have earned a livelihood for generations fishing the waters of Apalachicola Bay. "People depend on this resource," she said. "It's a rather traumatic situation at the moment in Franklin County."

I'd been speaking with Brooke for almost an hour and she hadn't mentioned the so-called Water Wars, a conflict in which Florida charged Georgia and Alabama with taking too much of the Apalachicola River's fresh water and choking the famed Apalachicola Oyster. Now, unable to find settlement, the case is pending before the United States Supreme Court. I have been one of the believers in that theory, so I'm curious why Brooke hasn't mentioned it. "Florida hasn't shown that by increasing water flow the oyster population problem would be solved," she said.

I WANTED TO GET CLEAR ON THE Water Wars, so I found an expert. Steve Leitman is a curly-haired and athletic hydrologist at Florida State who has been

A female grackle eats cold-stunned oysters in Apalachicola Bay, 2014.

deeply involved in the three-state conflict for decades. Recently he math-modeled the flow of the river using seventy-five years of climate data.

What's true, Leitman told me, is that the perfect salinity for oysters is determined by freshwater flow. What is not correct is that Atlanta's water needs and south Georgia agriculture (increased use of irrigation) caused the collapse. "Georgia could do better," he said. "But blaming Georgia for what the climate did is nonsense."

Leitman explained that the problem with river flow is not so much a change of volume as of distribution. "We have floodier floods and droughtier droughts," he said. This extremism is the very definition of climate change: more intense, less predictable, less steady weather patterns.

Yes, to fix the oyster problem in Apalachicola Bay, Leitman said, flow will have to be addressed. "But we'll have to address more than flow," Leitman said. "Since the 2012 drought there have been good flow years and the oysters haven't come back. On the flip side, the bay has had worse salinity and did not crash."

Leitman stressed the difference between causation and correlation. "What *pushed the oyster fishery over the edge* is not necessarily what *caused* the collapse," he said, choosing his words carefully to emphasize the distinction. This is correlation: much-needed fresh water from the Chattahoochee River upstream was being siphoned off as a beautiful fishery teetered on the edge. Causation was overharvest, inadequate regulations, and, more than anything, climate change.

COLETTE PICHON BATTLE, EXECUTIVE director of the Gulf Coast Center for Law and Policy, was quick to point this out. "The closing of the Apalachicola Bay to oystering due to drought is yet another impact of climate change on the Gulf South," she wrote me. "Climate change shifts rainfall patterns, causing droughts as well as floods in our region. It's time for all Gulf South elected officials to have the courage to acknowledge and address the impacts the global climate crisis has on our local communities and our local economies."

If I am understanding the scientists correctly, reopening the Apalachicola Bay oystery, even in a diminished form, will require better management and more regulations, and even when those are addressed there will be the enormous, global issue of the climate. Fixing that one is going to take all of us—the quicker, the better.

The specter of climate change, with weather becoming more extreme, swings like a pendulum in a hurricane wind. In Appalachicola Bay, it has, in less than one human lifetime, destroyed a place-based food. Apalachicola oysters turned a meal into a celebration. They fed people for thousands of years. They seemed endless, indestructible.

As I reported this story, I realized I was angry. I still am. What I'm angry about is that the world is changing for the worse and I can do nothing about it, or almost nothing. I'm angry that it's never coming back, not like it was.

I've always hated extinction. Every cog of life we lose depauperizes our planet and disrupts relationships species have with each other and with their environments, interactions that have been evolving for time immemorial. Our wild world is a glorious one. We humans have been lucky to witness it. The more of it we lose, the more of ourselves we lose.

NOW, A CONVERSATION ABOUT Apalachicola oysters takes on a note of nostalgia, even sorrow. "There's a smell of oysters in an oyster sack like no other smell," Wade said. "It's mesmerizing to me and to others who live that life." I've heard other fishers, who are on the water every day, talk of their work in these endearing, even seductive, terms. Hard as the work is, there is something primal and satisfying and irreplaceable about it.

I asked Wade how he prepared oysters when he took some home. He paused. "When all the seafood is in your lap, you're stepping on oysters, every night you're sampling them...I don't know that I ever took oysters home."

In the oyster house, then, how did he eat them?

"It's an insult to put anything on a good oyster," he said. "You cut the muscle and let her slide."

Every winter for the last ten years, Wade has returned to Indian Pass from his home in South Carolina. After he sets up his little pull-behind camper, the first thing he does is buy a bushel sack of local oysters. He stands there awhile in the Florida sunshine, listening to laughing

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gulls and wind in wax myrtle, breathing in smells that touch something deep inside him. Then he grabs a bag of ice and dumps it over the oysters. He will sit in his camp chair, oyster knife in hand, and eat his fill, looking across the restless pass at the fringed outline of St. Vincent Island.

Not this year. Those oysters didn't happen this year. They won't happen next year or the next.

LOOKING TO THE SCIENTISTS FOR a possibility of hope, I asked Sandra Brooke, "Do you think we're going to get this fishery back?"

She hedged. She talked of the need to establish sanctuaries and about farmed oysters, an up-and-coming industry. "When I first arrived, there was no aquaculture. That has exploded."

"But the fishery?"

"I think closure is going to be absolutely invaluable," she said.

"Can we get it back?"

Brooke was quiet for some seconds. I could almost hear her working a tiny scale in her mind, weighing what to say. She wanted desperately to be hopeful. Finally she said, "If we can provide habitat, if we can put it in the right place and the right configuration, and if there are still larvae in the system, and we leave it alone, and enforcement does their job, and we get a management plan in place, yes, I think there will be a fishery in the future."

For the burgeoning, spilling, outpouring of life to be possible, long food chains have to be intact. The best food security for humans is stewardship of wild places and implementation of the transformations we are called to make to slow and reverse the climate crisis.

May it happen.

The oystermen's commute, Apalachicola Bay, 2007

INDIAN PASS IS UNBELIEVABLY calm. I steady my kayak and step in, then wiggle off the sandy boat ramp. I feel some fear. The fear is not of the unpredictable swallowing capacity of the sea, licking its million white tongues in sprays of suffocating mist and foam, pulling my boat west toward the vast paradigm of never. No, the fear is something else, fear of the world *not* changing, of us having buried ourselves too deeply, irreversibly, in a dream that no longer works.

It's a quick scoot over to the wild island of St. Vincent. On the point a terrific garden of birds blooms from the dull sand. Pelicans rest with black skimmers, an occasional willet, the five oystercatchers I saw yesterday from a distance. Ahead, sea oats hold dunes in place. Beyond the dunes, diminished by intense hurricanes during the thirty years I've known this place, the pine forest spreads lacy fans against a strangely clouded sky. I say "strange" because the cirri have piled up for days as if promising rain, but it hasn't come. Two monarchs bob and circle each other, facing the wide, lonesome, steel-blue sea on their long voyage to Mexico.

The day is chilly, so gray the distinctions between sand, sea, and sky are vague. Out in Apalachicola Bay a pod of dolphins feed. Their triangular black fins appear like tiny sails and disappear, cutting through waves. As I walk the empty beach, a sandpiper scurries along in front of me then takes to air, squawking as it banks away.

The place looks plenteous. But I have the perspective of years, and I see poverty—fewer shorebirds, fewer shells on the strand, smaller pods of dolphins. I see a system hit so hard by so many assaults that it staggers under the blows. Something Sandra Brooke said comes to mind. She told me that she has been going out with oyster fishers, and they are finding spat—larvae that have attached to a surface—and also juvenile oysters.

And where there is spat, there is hope.

Janisse Ray writes about nature and culture from an organic farm in the south of Georgia. She has won a Pushcart Prize and the Jordan Prize for Literary Excellence.