

OCEAN TO EVERGLADES

THE NATURE OF FRESH AND SALT WATER IN FLORIDA



STORIES

LAKE OKEECHOBEE

FLORIDA BAY

BISCAYNE BAY

SEA LEVEL RISE

Water is the beating heart of Florida.

Yet, as we tackle the many environmental threats facing this state, one thing has become clear: Florida's water environments are deeply interconnected.

There is no separating the ocean from the Everglades; no separating the fresh water from the salt water. They are all part of the same system, and their health is intertwined. To address the harmful algal blooms and sea grass die-offs plaguing Florida's bays and coasts, we must restore the Everglades. And to restore the Everglades, we must consider the current and future impacts of sea level rise, climate change and changing ocean conditions. From the ocean to the Everglades: we're all in this together.

That's why Ocean Conservancy, with generous support from VoLo Foundation, produced this report and accompanying online story platform at www.ocean2everglades.org. We believe that we need to tell this story. We need to find solutions. And we need to build a better future.

The solutions to Florida's water issues require bold and decisive action. *We can* reduce nutrient pollution from fertilizer and runoff. *We can* address carbon emissions. *We can* restore our wetlands and waterways. And *we can* use creativity and innovation to solve all of these pressing challenges. Conserving and restoring the natural wonders of Florida's ocean and Everglades depend on it.

This is our vision. Now let's get to work.

Janis Searles Jones
Chief Executive Officer
Ocean Conservancy

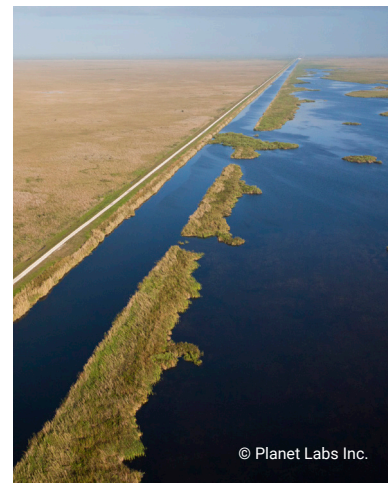


LAKE OKEECHOBEE

To understand the natural wonders of Florida, and the ills that plague it... you have to follow the water and learn its story.



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But all of that changed.

People decided to drain and reengineer South Florida's wetlands and waterways for land development, agriculture, and water supply.

A massive dike was built along Lake Okeechobee's southern rim, stopping water from flowing south. Canals were dug connecting Lake Okeechobee to existing rivers so water could be diverted to the Atlantic Ocean and Gulf of Mexico.

The journey a drop of water takes today is radically different than it was with a pristine Everglades—and the natural areas that depend on that water are suffering as a result.

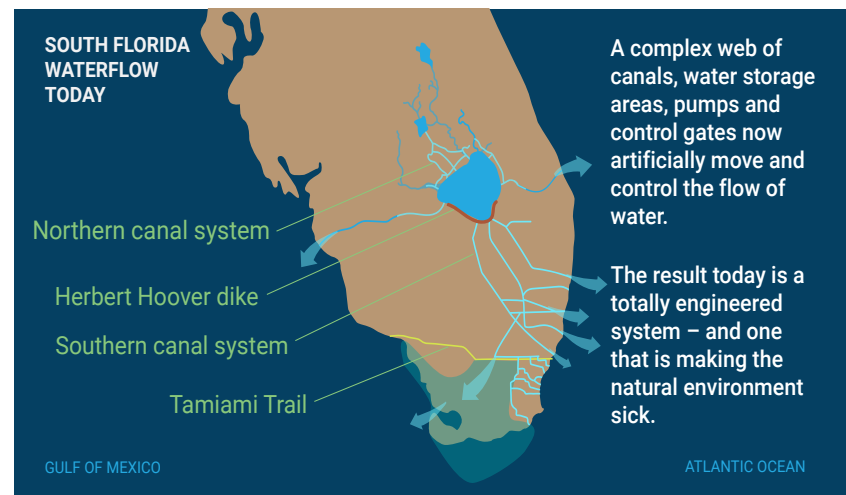
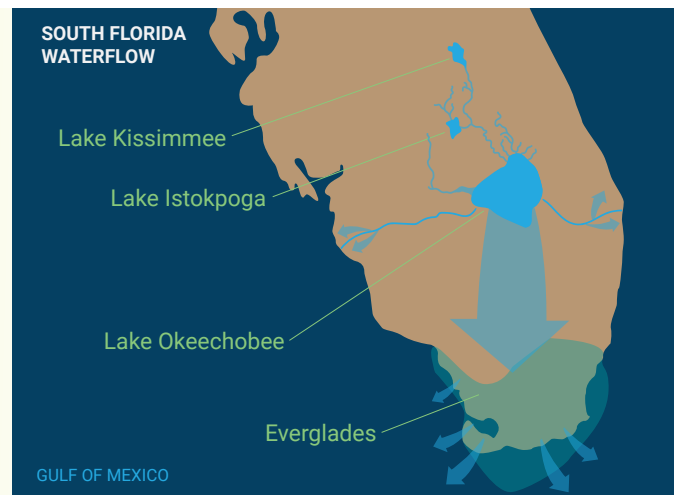
Not nearly enough clean water is sent south to feed the Everglades, Florida Bay, Biscayne Bay and the Gulf of Mexico. Starved for clean, fresh water, these environments are in serious jeopardy.

Historically, rain that fell in central Florida worked its way through the winding rivers and lakes of the Kissimmee River system, eventually arriving in Lake Okeechobee.

These shallow waters moved slowly across the flat terrain of South Florida, flowing less than a foot per minute on average – barely perceptible to the human eye.

The waters of Lake Okeechobee would then overflow its southern rim, spilling into the Everglades. Water in the Everglades flowed in a vast “sheet” of water across the landscape.

It was a river of grass; a natural wonder unlike any other.



A complex web of canals, water storage areas, pumps and control gates now artificially move and control the flow of water.

The result today is a totally engineered system – and one that is making the natural environment sick.

WE NEED TO CLEAN THE WATER AND SEND IT SOUTH.

FLORIDA BAY

At the very southern edge of Florida, the Everglades empties into a spectacular natural playground: Florida Bay and the surrounding Florida Keys.

Where the Everglades meets Florida Bay's salt water, vast mangrove forests thrive. Mangrove forests can be among the most productive environments in the world.

The Florida Reef Tract extends over 300 miles from St. Lucie Inlet to the Dry Tortugas and across the Florida Keys, making it one of the largest coral reef tracts on the planet.

Coral reef tourism supports 70,000 jobs and billions of dollars in economic activity in Florida.

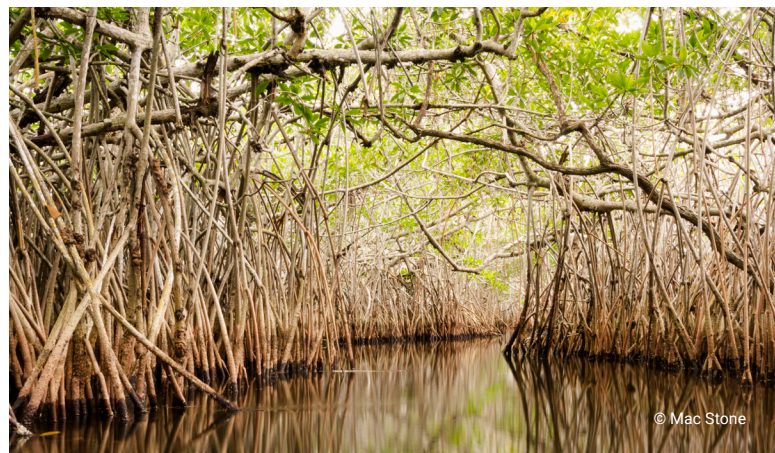
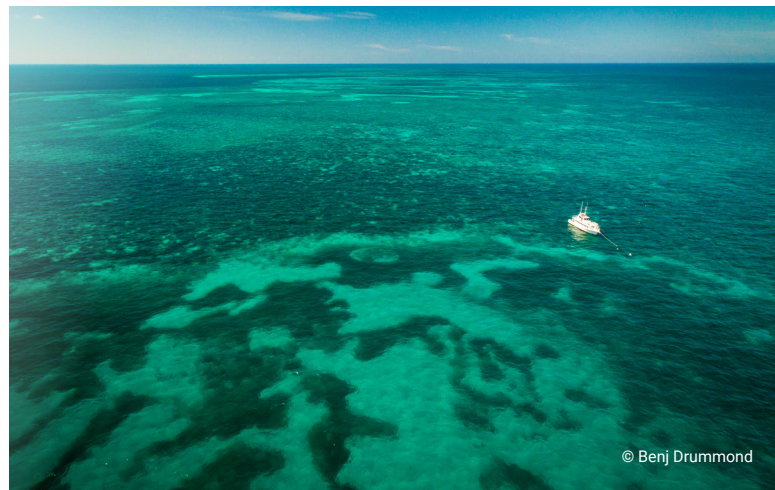
Immense seagrass beds provide food for manatees and sea turtles, nursery habitat for fish and shrimp, and rich feeding grounds for wading birds.



Not all is well, though, with this natural paradise. As the flows of clean, fresh water have been stifled and the health of the Everglades has declined, so has the health of Florida Bay and the Florida coral reef tract.

Starved of clean fresh water, Florida Bay began experiencing a dramatic decline in the 1970s. Seagrass die-offs and dead zones have become a common occurrence.

Nutrient pollution also flows into the bay and beyond, destroying water quality, contributing to harmful algal blooms, and harming corals offshore.



An army of passionate Floridians from all walks of life refuse to accept a Florida Bay and reef tract that's in decline.

They are fighting to restore the Everglades and save the place they love.

A declining Florida Bay reflects all of the damage we've done to the Everglades in decades past. But as we work to restore the Everglades, Florida Bay will be a beneficiary of that recovery.

**FLORIDA BAY'S
FUTURE IS WORTH
FIGHTING FOR.**

40,000

Acres of Florida Bay seagrass habitat that perished in 2015 from water quality degradation

6

percent coral cover in areas of sea floor that used to have **50 percent** coral cover

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BISCAYNE BAY

Biscayne Bay is the great marine “front yard” of Miami. But the bay’s health is in decline and needs restored freshwater flows from the Everglades to recover.



Historically, Biscayne Bay was a unique, clear-water tidal estuary fringed by extensive mangroves that received massive amounts of pure fresh water filtered through the Everglades.

Water slowly percolated through springs, tidal creeks and mangrove forests that surrounded the Bay.

Fresh groundwater from the underground Biscayne aquifer bubbled up directly through the bay’s seafloor.

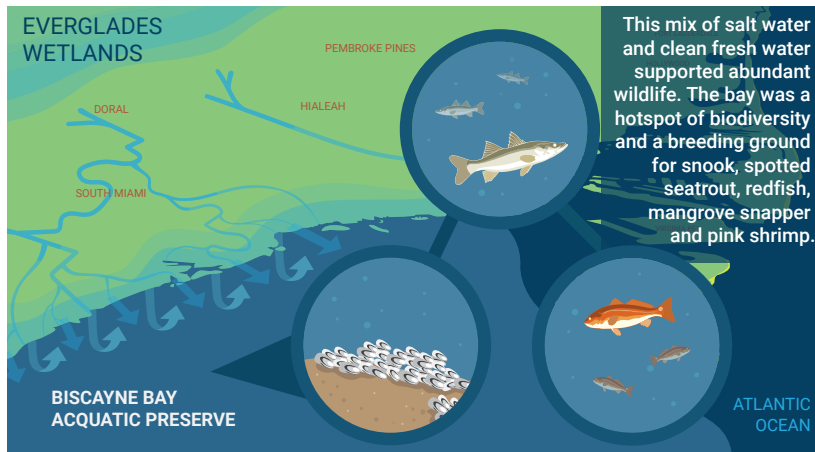
But when people started destroying and draining large parts of the Everglades, all of that changed.

Biscayne Bay was transformed.

Now, not nearly enough fresh water makes its way south through the Everglades and into Biscayne Bay. Biscayne Bay’s waters are now sometimes even saltier than the open ocean. Today, much of the fresh water that does reach the bay flows through 13 human-made canals.

The fresh water from the canals isn’t clear or clean. This water is no longer naturally filtered through wetlands. Instead, the canals let bursts of dirty, unfiltered fresh water flow straight into the bay.

Oyster beds have entirely disappeared in the bay. Seagrass beds struggle to survive, and large areas of the bay’s floor near canals are barren. Redfish, which were historically abundant in Biscayne Bay, all but vanished by the late 1950s.



We can heal Biscayne Bay if we restore the Everglades and the natural freshwater flows the bay depends on.

Everglades restoration includes the “Biscayne Bay Coastal Wetlands Project,” an effort to

redirect fresh water out of canals and back into coastal wetlands around the bay.

When fresh water returns to these wetlands, the flows into the bay become steady and

diffuse, and the water is filtered.

In the bigger picture, we need to move far more water from Lake Okeechobee southward.

ONE THING IS CLEAR:

HELPING BISCAYNE BAY MEANS RESTORING THE EVERGLADES.

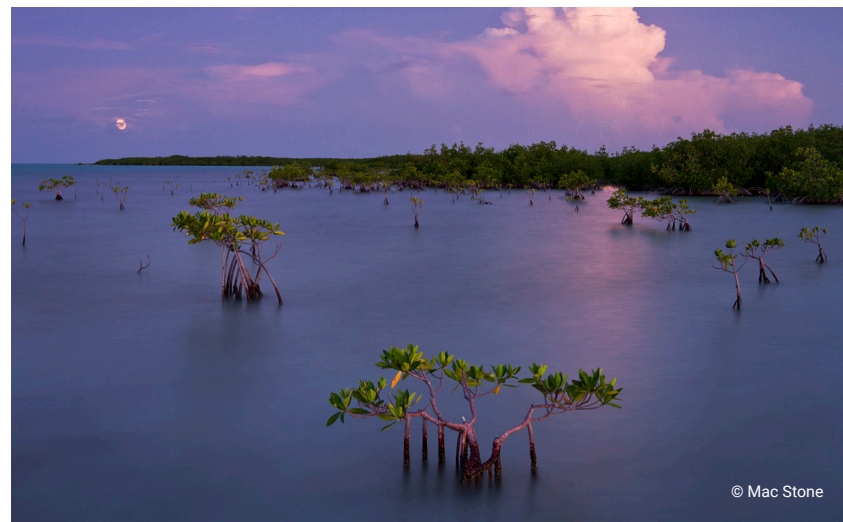
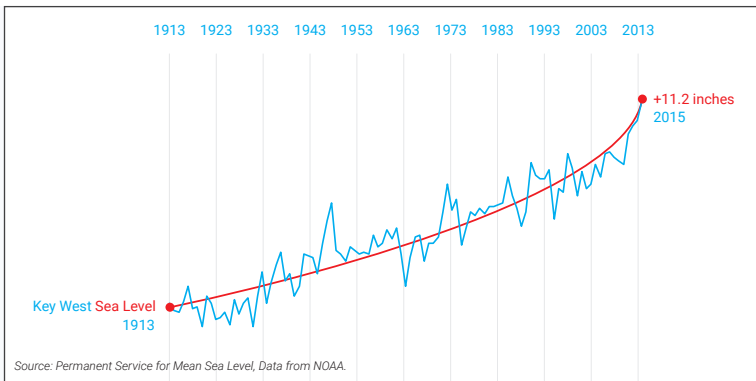
SEA LEVEL RISE

Sea level rise is happening today. Seawater is being seen and felt all over the Everglades. Rising seas regularly flood south Florida's cities and towns.

South Florida's extremely low elevations make the Everglades ground zero as sea levels rise.

As saltwater from rising seas encroach into coastal freshwater wetlands, peat collapses, brackish-water pools appear, and mangroves move inland.

This upends the entire wetland ecosystem, including plants and wildlife. Some Everglades species are abandoning their historic ranges due to sea level rise. Even slightly deeper water interferes with Roseate spoonbills' ability to feed in the shallow waters of Florida Bay.



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South Florida's balance between fresh water and saltwater is in constant flux. The lines between ocean and Everglades are sometimes blurry.

But the harsh consequences of sea level rise are becoming more apparent each year.

We can change our course and protect South Florida and the Everglades.

Sea level rise makes life difficult for the people of South Florida, too.

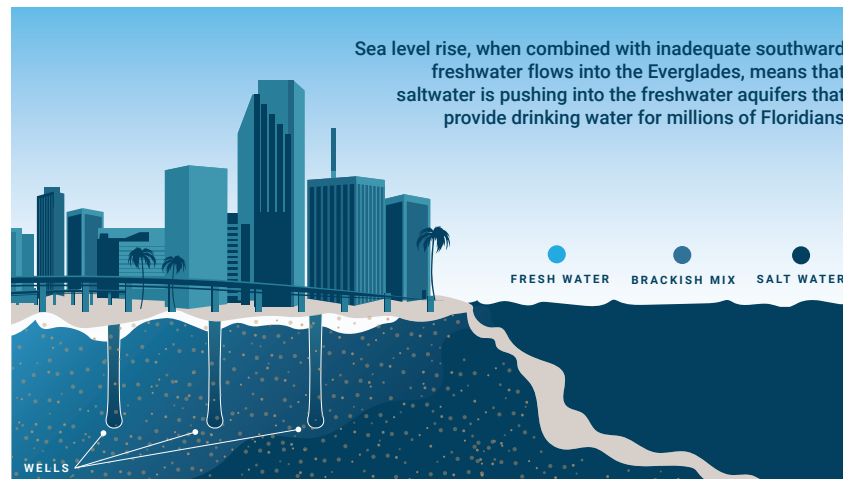
During "king tides," the streets in Miami and other communities flood with saltwater, even on perfectly sunny days with no rain. In the aftermath of king tide events, pollutants flush from the streets into coastal waters, closing beaches and causing a health risk.

The "sunny day" flooding caused by sea level rise will become more extreme every year, requiring major building renovations and billions of dollars spent on new infrastructure.

Even when areas aren't yet flooded aboveground, sea level rise can have huge, unseen impacts underground.



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THIS IS OUR CHALLENGE.

THIS IS OUR OPPORTUNITY.



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ABOUT US

OCEAN TO EVERGLADES

Ocean Conservancy, with generous financial support from VoLo Foundation, created this report and accompanying online story platform at www.ocean2everglades.org, to tell an urgent and compelling story – the story of the connections between Florida’s ocean and Everglades environments. The fates and futures of these environments are deeply intertwined, and we cannot save one without saving the other. We aim to bring Floridians together to help conserve and restore Florida’s water environments, and we invite you to join us in this effort.

TO LEARN MORE,
PLEASE VISIT US ONLINE:
WWW.OCEAN2EVERGLADES.ORG
WWW.OCEANCONSERVANCY.ORG
WWW.VOLOFOUNDATION.ORG





OCEAN CONSERVANCY IS WORKING WITH YOU TO PROTECT THE OCEAN FROM TODAY'S GREATEST GLOBAL CHALLENGES. TOGETHER, WE
CREATE SCIENCE-BASED SOLUTIONS FOR A HEALTHY OCEAN AND THE WILDLIFE AND COMMUNITIES THAT DEPEND ON IT.