

The Promise of Our Water

The problem with the releases from Lake Okeechobee damaging the St. Lucie River and the Indian River Lagoon is old news. Instead of rehashing the past, we look at five inventive solutions that show how we, as a community and as individuals, can protect our precious waterways.

By Ike Crumpler | Photography by Jason Nuttle



(left) An aerial view from 2013 captures the encroachment of polluted water.

(below) Tom Kenny, left, and Ronnie Hataway, at a Caulkins Water Farm. The 415-acre former orange grove draws water from the C-44 canal for containment before it filters through 40 feet of sandy soil and back into the aquifer.



Courtesy of Thurlow/Lippisch SLR/IRL Archives

IT'S NOWHERE NEAR the hundreds of billions of gallons of untreated water discharged from Lake Okeechobee, but it's safe to say that a lot of gallons of ink have been spilled writing about water issues in Martin and St. Lucie counties.

Although many people disagree on the best solution, everyone agrees that the releases from Lake Okeechobee that flow into the St. Lucie River and the Indian River Lagoon are a big problem. It's an environmental problem. It's an economic problem. It's a health problem. It's a drinking-water problem. It's an agricultural problem. It's a tourism problem. It's a property-values problem. It's a quality-of-life problem. It's a political problem.

Fortunately, it's a problem that's not without a solution—or several. We consulted a broad slate of experts and decision-makers on what's been tried, what's being done, what needs to be done and what's working to fix these problems. In examining five proposed solutions—reflowing the water south, finishing the Comprehensive Everglades Restoration Projects, funding new projects like the Caulkins Water Farm, converting communities to sewer systems, and approving local legislation to control nutrients and runoff—we looked at it like a word problem.

Every few years—and particularly during heavy rainy seasons or following major storm events—a community on the Treasure Coast suffers significant environmental consequences when hundreds of billions of gallons of water is discharged from a large lake through a series of man-made canals. If it's not released through the canals, people fear that it could breach the lake's dike, flooding nearby communities as well as privately owned farmland used for generations by a leading agriculture industry.

However, when the water is released, the volume is too great to be cleansed naturally of the nitrogen and other nutrients picked up from the lake itself, as well as from the runoff of nearby rural and residential properties. The mass of water hits the community's river and travels into its estuary and lagoon, upsetting the balance of fresh water and saltwater. As one of the most biologically diverse lagoons in the continent, its rich marine life suffers. Worse, many people who make contact with the discharged water report injuries and illnesses. As the condition of the waterways deteriorates, marine businesses suffer, tourism falters and property values plummet. This results in activists mobilizing and protesting, the news making headlines, councils and commissions passing resolutions, and politicians demanding answers and relief.

Later, a landmark study concludes that as damaging as the discharges are, they're even worse when intermingled in areas with high

concentrations of residential septic tank outflows, causing destructive, toxic algae blooms. So, what should the community do?

Solution A: Purchase or partner on using property south of the lake, known as the Everglades Agricultural Area, to reflow water away from community's waterways.

Jupiter Island resident Nathaniel Reed, who is the former assistant secretary of the U.S. Department of the Interior, has described recent decisions regarding the water issue as “a significant setback.” He's referring to Gov. Rick Scott's and the Florida Legislature's decision to let the deadline lapse on the deal crafted under former Gov. Charlie Crist to purchase 46,800 acres of U.S. Sugar land.

Reed, who serves on multiple boards including the Everglades Foundation, Natural Resources Defense Council and National Geographic Society, says the consequences of not buying the land to move the water south exceed even Martin County's water quality concerns.

“The excess polluted water from Lake Okeechobee must go south,” Reed says. Urgency is vital, he adds.

“Why waste time?” he asks. “The 8 million Floridians, plus 12 million visitors to South Florida rely on drinking water from the Biscayne aquifer. The aquifer is recharged presently by cleansed runoff from the storm-water treatment areas, which is basically



Martin County Commissioner John Haddox talks with Nathaniel Reed of the Everglades Foundation at the Stuart Jet Center following a plane ride to survey the system.



An aerial look at the C-44 canal, where the discharges travel through when released from Lake Okeechobee.



(above) An aerial view of farm land north of Port Mayaca captures smoke from an agricultural farm mixed with dark storm clouds.



(left) Five-term former Martin County Commissioner Maggy Hurchalla is a leading activist on environmental issues.

the U.S. Army Corps' \$600 million C-44 Reservoir and Stormwater Treatment Area, which recently celebrated entering its final phase en route to a 2020 finish, aims to store and treat farm runoff of its nutrients before reaching the St. Lucie River.

Kevin Powers, son of the late Timer Powers (one of Martin County's most widely respected local leaders), is a partner in Indiantown Realty Group and Florida Commerce Park in Indiantown and founding principal of Florida LNG Groups. He's also Martin County's representative on the governing board of the South Florida Water Management District (SFWMD).

River activists criticized the governing board for not approving the U.S. Sugar deal. While the board rejected the deal, Powers says the ultimate authority resided with the Florida Legislature.

Still, several aspects of the deal concerned him, including U.S. Sugar's requirements that it be "made whole" for the loss of two rail lines. "That's a pause-and-let-it-sink-in statement," he says.

There were other hesitations, Powers says. Of the 41,000 acres under contract, only 26,000 acres were actually in the EAA. In addition, another requirement stated that the state couldn't reflow water on more than 1,000 acres per year over the first 20 years. This would free U.S. Sugar to continue farming much of the acreage, he says, dashing public expectations that this "end all, be all" would produce rapid results.

"I told the *Stuart News* editorial board that I couldn't come back here in 10 years and say, 'Here's your 10-year report,'" he says. "I could come back in 10 years and say, 'Let me see if I can get you some land.'"

Although activist Hurchalla called it "a misunderstanding" that U.S. Sugar could continue farming the land after the buy, she acknowledges that every acre wouldn't be ready for conversion to a flow-way.

polluted irrigation water coming off the sugar plantations, and rainfall. Without a connection to Lake Okeechobee, the Biscayne aquifer will be sorely pressed to furnish adequate drinking water during periods of drought."

Maggy Hurchalla, a former five-term Martin County commissioner with a history of advocating for environmental issues, agrees. She grew up in Miami and maintains a home there.

"Last spring, Miami was in an extreme drought," she says. "We're dumping water from the [St. Lucie] Locks. If you had all the pumps and connections in the world, you could send the water south. [The Sugar land buy] is the only way so far where you can send an appreciable amount of water south."

Solution B: Finish the nearly 68 Comprehensive Everglades Restoration Projects, funded to the tune of \$248 million and approved around Lake Okeechobee. One of those projects,

"All of [the land] wouldn't be [ready] for 20 years, but a substantial amount would have been," she says. "Every acre you don't farm reduces your problem."

A supporter of moving water south, Martin County Commissioner Sarah Heard says the U.S. Sugar buy is now irrelevant.

"The issue is moot," she says. "The Sugar purchase is not going to happen. It's dead. We need to buy land and we need to figure out what kind of land we're going to buy."

There's no reason, Powers says, why water-quality solutions can't incorporate land to the south and north of the lake.

"Nothing is not in play," Powers says, "including additional storage south of the lake. Why don't we spend as much energy to try and store water north of the lake as well? Any acquisition we make should be targeted and specific to derive real results—rather than just buying land for the sake of land."

Solution C: Dedicate additional revenue to unique undertakings like the Caulkins Water Farm.

Unlike stormwater treatment projects, which contain excess water from Lake Okeechobee and agricultural runoff and hold the water until it cleanses of nutrients naturally through wetland vegetation, Caulkins Farm—thanks to its unique position by the C-44—draws water from the canal and holds it. The 415-acre abandoned orange grove allows the water to evaporate into the air or percolate into the groundwater aquifer.

"Eighty-two percent goes down and 18 percent goes up," says Tom Kenny, a principal on the project, citing a SFWMD study. "We're on system to take in 327,000 gallons of water in an acre foot. We're online to take water and keep it from going into the locks. It was estimated we could do 6,700 acre feet per year."

The project presents practicalities that stormwater treatment areas can't emulate, Kenny says, due to standards in place by the Environmental Protection Agency. A lawsuit between the state and the federal government requires farm runoff to reach a purity level that Kenny says "is almost unattainable." It must be 10 parts per billion phosphorus before it can go south. Were it 16 parts per billion, "you could move three times as much water south," he says. Environmentalists want 20 parts per billion.

"If you get water that's too pure, it doesn't have any nutrients to feed the Everglades plants system," he says.

The water farm faces an uncertain future. The pilot project aims to expand up 3,200 acres—taking in up to 80,000 acre feet of water per year. But its state funding is only slated until Feb. 1.



Mapping the Everglades

Happy Young put the Everglades on the map—literally.

"I was trudging through that Sawgrass pulling a 200-foot tape to measure an Everglades parcel boundary back in 1965," says the owner of GCY Surveyors and Mappers. "I've seen in many instances things come full circle."

GCY was selected by U.S. Sugar and South Florida Water Management District in 2008 to survey U.S. Sugar land for the proposed purchase.

Young—widely recognized as owning and archiving the largest number of historical records on surveys and deeds in the Everglades—explains how land ownership and use was originally determined.

"The original 13 colonies did not have any public domain," he says. "They had no federal government overseeing the land. The lands were either colony-owned or private. There was no public domain land."

Later, federally acquired territories became public domain. Debate ensued over how best to use them. The conclusion? Sell them to private owners. Surveyors set the boundaries. Just one problem: "They did not know how to create a legal description in a deed given to a landowner because (the federal government)

didn't know how much land they had," Young says.

Surveyors organized the land by sections, townships and ranges. Throughout the state, land offices sold property based on the surveys, transferring land from public to private domain. The feds deemed any land unfit for cultivation to the state.

"Federal surveying stopped at the margins of the large areas of swamp," Young says. "That became wasteland in the eyes of the perspective of the time. We had a lot of swamp and overflow land. The largest of which, was the Everglades."

At statehood in 1845, Florida acquired a half-million acres of swamplands. The Swamp and Overflowed Lands Act of 1850 obligated improving such lands for value. Further complicating that value potential, the federal government—land rich but cash poor—gave more than 2 million acres to the railroads for laying track. Its remaining land rose in value. The state's use of swamplands was limited. Farming it, the preference, first commanded ditching, draining and digging canals—the precursor of the latticework system that redirects the flow of water today.

"Here we are today," Young says, "blaming the farmer for turning the Everglades into farms."



Photo by Thomas Winter Photography

Solution D: Convert communities—especially those near the waterways—from septic tanks to sewer systems.

For years, four-term Martin County Commissioner Doug Smith emphasized the need to move the county away from septic systems and onto centralized sewer.

“The first thing I said, policy-wise, back in 2002, was we need to come up with a long-range plan on the elimination of septic tanks in Martin County,” Smith says. “There are three- to four-year periods of time where we hardly discharge anything. But those septic systems, the discharges never stop.”

Resistance to making the sewer conversion isn’t just cost, Smith says. “Some people use them as growth-managements tools,” he says.

Martin County commissioners recently heard the results of its study on septic tank impacts by Brian Lapointe, a research professor at Florida Atlantic University’s Harbor Branch Oceanographic Institute. Lapointe studied areas around Old Palm City and Golden Gate and found that damaging algae blooms spawn once Lake Okeechobee discharges combine with the county’s 18,000 septic systems.

The commission recently approved transitioning Old Palm City, Golden Gate and part of North Rivers Shores off septic tanks. It’s a targeted plan Heard supports, in opposition to Smith’s call for a countywide approach.

“It’s not the septics,” she says. “We just don’t have the number of septics that would be causing the gigantic problems that we have.”

The effort could cost homeowners up to \$20,000 apiece.

“The body of evidence has finally piled up to a point where people just can’t walk away from it anymore,” Smith says. “I feel it’s my responsibility to put us in a competitive position for grant dollars, Amendment One money—anything that’s applicable for reducing the burden on residents to get us there.”



(top) Brian Lapointe, left, a research professor with Harbor Branch Oceanographic Institute and current four-term Martin County Commissioner Doug Smith in the Indian Riverside Park Lagoon.

(above) A pipe that pumps water from the C-44 canal onto Caulkins Water Farm.

(left) The St. Lucie Lock and Dam, built in 1941 by the U.S. Army Corps of Engineers for navigation and flood-control purposes, helps drain excess water—discharges—from Lake Okeechobee during periods of heavy rainfall.

Solution E: Local governments adopt as many measures as possible to control nutrients and runoff going into the St. Lucie River and Indian River Lagoon—even if such efforts occur downstream of the massive discharges.

The City of Stuart, whose total budget is \$20 million, dedicated more than \$20 million on water-quality projects, says City Commissioner Troy McDonald. It was among the earliest municipalities in the region to adopt a fertilizer ordinance and later, a stronger ordinance limiting nutrients near the river. In addition to remediating the Haney Creek watershed, the city expanded its sewer program, incorporating alternative technologies and financing agreements that made voluntary hookups more affordable.

“This gives us credibility to go to the state and the federal agencies and say, ‘We need you. We’ve done all this and it’s just barely

scratching the surface, so we need your help,” McDonald says.

There’s an emotional power to such personal involvement and investment, Reed says. It gives a grassroots empowerment to the citizens.

“They’re stewards of the extraordinary place in which we live,” he says.

From securing enough land to move massive amounts of water south, to completing current stormwater treatment area projects, to supporting water farms, to converting over septic tanks to adopting local initiatives that reduce the effects of runoff—to all of the above—the citizen-steward is the common denominator.

The execution and completion of any of the solutions will continue to command citizen-stewards—informed, engaged, unified and persistent. ■