

Why Do Some Water-Related Projects Take So Long?

Not long after the 2018 outbreaks of blue-green algae and red tide subsided, a newly elected Governor DeSantis issued [an executive order](#) that promised rapid improvement in the quality and quantity of Florida's water. Soon thereafter, Governor DeSantis began overhauling the board of the South Florida Water Management District (SFWMD) with the goal of making the board more responsive to south Florida's water-related challenges. Given the urgency of eliminating future algae outbreaks combined with all the public statements that help is on the way, many members of the "Ding" Darling Wildlife Society have questioned why the projects to address our water-related issues are taking so long to implement.

This report will provide insight into that question by discussing two such projects: controlling Florida red tide and building the C-43 reservoir.

Controlling Florida Red Tide

Because red tide is a worldwide phenomenon, it's reasonable to think that Florida can leverage the red tide research being done elsewhere to significantly shorten the time it takes to develop techniques to control red tide in Florida.

Unfortunately, only in Florida is red tide caused by the species of phytoplankton called [Karenia brevis](#), and because of that uniqueness, our version of red tide is often referred to as Florida red tide. Because Florida red tide has a unique cause, techniques that effectively control red tide somewhere else may not be effective here. As a result, we are not likely to be able to take any significant short cuts on the research that must be done to find solutions to control Florida red tide.

[A previous newsletter](#) mentioned that in 1957, Florida tried to mitigate a red tide outbreak by using crop-dusting planes to drop copper sulfate on the bloom. That action did kill some of the red tide, but it also led to the release of toxins that killed marine life. The likely path forward for scientists is that once a solution is shown to work in a lab environment, it gets tried in a small body of water such as a pond. If that trial is successful, it gets repeated in increasingly larger bodies of water until the state feels comfortable that it can safely and effectively use the solution in the Gulf of Mexico.

Unfortunately, to avoid implementing a solution whose unintended consequences are more harmful than the Florida red tide it is intended to control, this path is inherently lengthy.

Building the C-43 Reservoir

The C-43 reservoir is being built on 10,700 acres of former farmland in Hendry County, Florida, slightly west of Labelle and just south of Route 80. The SFWMD has identified the following as the [goals and benefits](#) of the reservoir:

- Capture and store stormwater runoff from the Caloosahatchee River basin, reducing excess water flow to the Caloosahatchee Estuary.
- Capture and store water that is released from Lake Okeechobee, reducing the discharges to the coastal estuaries.
- Improve the salinity balance for the Caloosahatchee estuary by controlling peak flows during the wet season and providing essential flows during the dry season.

The reservoir was first envisioned in the early 2000s, but its construction was delayed in part by the economic downturn that occurred in the late 2000s. The South Florida Water Management District (SFWMD) began construction in 2015, and the expected completion date is December 2023. To get a sense of the scale of the reservoir, assume that a person in good physical health goes for a two-hour walk without stopping. That person would have walked one side of the C-43 reservoir which when completed will measure 6x3 miles. The water level will range from 15 feet to 25 feet and, as a result, the reservoir will hold approximately 170,000 acre-feet, or 55 billion gallons of water.

In addition to storing water, the previously mentioned executive order signed by Governor DeSantis directed the Florida Department of Environmental Protection (FDEP) to work with the SFWMD to add a stormwater treatment component to the C-43 reservoir. The goal of this component is to provide additional treatment and improve the quality of water leaving the reservoir. This initiative is being implemented through the C-43 reservoir [Water Quality Feasibility Study](#).

One of the reasons that building the C-43 reservoir will take years is the massive scale of the reservoir and hence the huge amount of work that must be coordinated. Insight into the scale of the reservoir is provided by the two graphics shown below. Both the graphics were recently taken at the C-43 construction site. One graphic shows the authors standing next to

a small pump station that was recently completed. The other graphic shows the ongoing construction of one of the larger pump stations. Further insight into the massive scale of the C-43 reservoir is provided by this [video](#).



However, the scale of the reservoir is not the only reason causing a lengthy construction process. To both ensure that they settle properly and to minimize the seepage of water out of the reservoir, as part of the construction process the dirt berms that surround the reservoir must sit in place for 16 to 18 months and nothing can be done to shorten that time frame.

Not Every Project is Inherently Lengthy

As discussed in this report, many water-related projects are inherently lengthy. However, that is not true of all such projects. In the [recommendations that they made to the Governor and to the Florida legislature](#), the Blue Green Algae task force stated that agricultural operations are one of the primary causes of increased nutrients flowing into Florida's water bodies. The runoff from agricultural operations is supposed to be minimized by the use of [Best Management Practices \(BMPs\)](#). However, the effectiveness of these BMPs is often criticized because compliance with the BMPs is largely voluntary.

Strengthening the BMPs to the point that they achieve the stated goal of reducing the nutrients that flow into Florida's water bodies would have a significant impact on the quality of those water bodies. In contrast to projects such as controlling Florida red tide and building the C-43 reservoir, strengthening BMPs can happen in a relatively short period of time. Several organizations, including the SFWMD, have indicated their desire to move in that direction.

In Case You Missed It: A [recent article](#) in *Field & Stream* documents some of the progress that has been made in the battle to improve water quality in Florida.