

Lake Okeechobee discharges: Will damage to St. Lucie River be worse now or later?

Max Chesnes Treasure Coast Newspapers

Published 6:01 a.m. ET Apr. 9, 2021 | Updated 10:31 a.m. ET Apr. 9, 2021

Is lowering Lake Okeechobee's level by 4 inches worth releasing more freshwater into Florida's fragile coastal estuaries over the next few weeks?

That's the question lawmakers and clean-water advocates are asking as the floodgates remain open to the St. Lucie and Caloosahatchee rivers, with traces of toxic algae in the water and oysters nearing the point when they typically die from too much freshwater.

Continuing discharges at the current rate would help reduce Lake O's level by about $\frac{1}{3}$ of a foot — for a total drop from 14 feet, 3 inches Thursday to 12 feet, 6 inches June 1, according to TCPalm's calculations, which don't factor in unknown variables such as rain, evaporation and farmers siphoning lake water for irrigation.

Some environmentalists say continued damage to the St. Lucie River now may outweigh the hope of curbing discharges this summer, when algae blooms typically are bigger and more toxic.



Water moving through the C-44 canal from Lake Okeechobee passes through the St. Lucie Lock and Dam on Tuesday, April 6, 2021, in Martin County. Discharges began March 6 with no clear end-date in sight, according to the Army Corps of Engineers. LEAH VOSS/TCPALM

"It's the duration that hurts," sometimes more than the volume, said Mark Perry, executive director of the [Florida Oceanographic Society](#) in Stuart. Even a small amount of discharges can damage the river if they continue for several months, he said.

"If all things stay the same, we can still move that water south and we're only getting three-tenths of a foot (of water off Lake O). It's not really significant enough perhaps to continue to damage the estuaries with these discharges," Perry said.

The Treasure Coast's congressman has raised similar concerns.

"These releases are already having an impact on the health of the fragile ecosystem in the St. Lucie," U.S. Rep Brian Mast, R-Palm City, wrote Wednesday in a letter to Col. Andrew Kelly, the U.S. Army Corps of Engineers' Florida commander.

"While I understand the Army Corps' goal is to make preventative discharges now in an effort to avoid discharges during the summer," Mast wrote, "continuing these releases indefinitely ... will put lives at risk."

When will discharges end?

Since discharges began March 6, about 10 billion gallons of lake water has poured into the river through the St. Lucie Lock and Dam, about six miles from downtown Stuart.

That amount would cover the city in about 5 feet of water.

Still, that pales in comparison to previous discharges. The record amount was 507 billion gallons during a seven-month discharge event that began in 1969 and ended in 1970. The record duration was 20 months, beginning during the 2004 hurricane season. It dumped 457.2 billion gallons of water into the river.

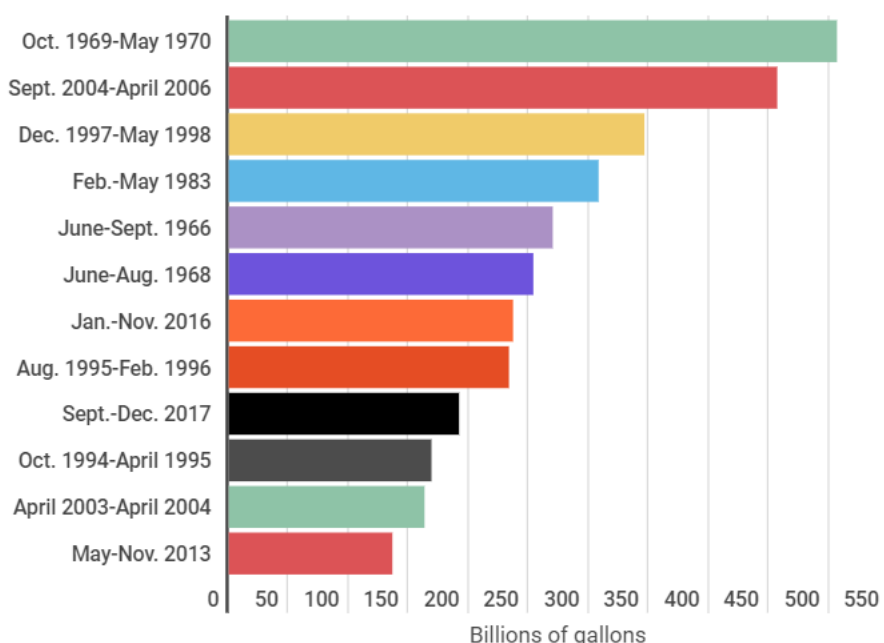
Kelly has said the current discharges are indefinite, but the agency is constantly assessing when they can stop based on changing conditions and weather forecasts.

The agency did not comment on TCPalm's calculations when asked to, and has not answered questions based on them. Spokesperson Jim Yocum only said the "deviation" from the typical discharge schedule "was designed to help protect the estuaries" from toxic algae blooms this summer.

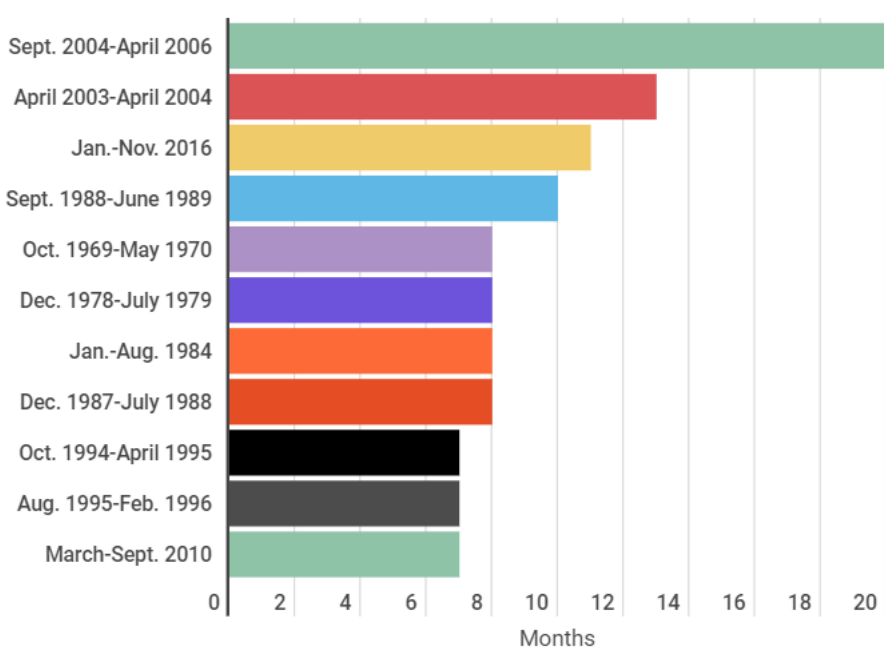
"We monitor the lake and estuary conditions daily, as well as the weather forecasts. We use that information to collaborate with partners and stakeholders to determine when we need to adjust releases," he added. "We have consistently maintained that we will be flexible in our approach and adjust our releases when conditions call for us to do so."

THE DIRTY DOZEN

This graph shows the years that tallied the highest volume of Lake Okeechobee water discharged to the St. Lucie River.



This graph shows the longest discharge events recorded. Note: There was a four-way tie for the 12th event.



Lake Okeechobee discharges event

The link below shows all the discharge data ranked by duration and volume from 1965 to 2016.

https://docs.google.com/spreadsheets/d/1Wd_dfo4jjBzNt6UOr_Wm61oQakfS8oDeRSFt4XSLuVw/pubhtml?gid=594136778

Why were discharges reduced if the lake's still too high?

Yocum cited the April 3 reduction in discharges as an example of that flexibility, even though current models show the lake level could be 13½ feet by June 1. That's still nearly a foot higher than the agency wants it to be by that date.

The agency reduced the weekly average rate of discharges to the St. Lucie from 323 million gallons per day to 193 million gallons per day, and to the Caloosahatchee to 775 million gallons per day from 969 million gallons per day.

The reason was two-fold, Yocum said.

The lake level had dropped over 10 inches in the past 30 days, helped along by evaporation, the lack of rainfall and farmers using lake water for irrigation. The average rainfall in March was 1.6 inches less than usual, according to John Mitnik, the South Florida Water Management District's chief engineer.

The agency doesn't want to reduce the lake level more than a half-foot a month to avoid harming nesting birds such as snail kites that thrive in aquatic habitats.

How long will it take for oysters to die?

One of the best measures of the St. Lucie estuary's health is oysters, whose spawning season is peaking from now through May, according to Perry, the scientist who heads the Florida Oceanographic Society.

The animals thrive in brackish water, but can die after being inundated by the lake's freshwater for too long — typically 28 days for adults and 14 days for juveniles, Perry said. Discharges began 33 days ago.

The SFWMD is closely monitoring oysters, spokesperson Randy Smith said.

Salinity levels are declining slowly, but at the current 15 parts per thousand, they remained in the "good" range for oyster health Thursday, according to Lawrence Glenn, director of the SFWMD's water resources division.

"They're in a safe range at this point," Smith said. "But that does not by any means lessen the amount of observation and surveys that district scientists are continuing to do. ... When we see that (oysters) seem to be adversely affected by the releases, then our recommendations are immediately that the releases are harmful and should be discontinued."

Mast ramps up pressure on Corps

The Treasure Coast's congressman also cited oysters in his letter to the Army Corps.

Lake O water is "impacting the estuary's salinity and damaging oyster beds, which as you know, is a key indicator that the health of the estuary is declining," Mast wrote.

He also cited the traces of toxic microcystin found in the cyanobacteria, more commonly called "blue-green algae," near the Port Mayaca Lock & Dam, which releases lake water east and west, and the St. Lucie Lock & Dam, which releases lake water into the river.

Eventually, toxic algae blooms can reach the [Indian River Lagoon](#) and Atlantic Ocean, as they did in 2016, closing Martin County beaches during the July 4th holiday weekend.

The algae seen March 29 contained 0.79 parts per billion of microcystin at the Port Mayaca Lock, according to Martin County officials. The level was 0.34 parts per billion at the St. Lucie Lock, according to the Florida Department of Environmental Protection.

Mast last month filed the Stop Poisoning Florida Act, a bill that would prohibit discharges to the St. Lucie River whenever the algae contains 8 parts per billion or more. His letter asks the Army Corps whether it will stop discharges if the toxicity hits that threshold.

The Army Corps has not responded to TCPalm's request for an answer.

"The Army Corps has proven that if left to their own devices, they will continue to poison our communities," Mast wrote in a prepared news statement. "No Floridian should tolerate being poisoned by their government. The moment that water turns toxic, the Army Corps must stop the discharges immediately."



U.S. Rep. Brian Mast announces three new bills in an effort to prioritize human health and protect the St. Lucie River from Lake Okeechobee discharges on Monday, March 22, 2021, outside of his office in Stuart. Florida Oceanographic Society Executive Director Mark Perry and South Florida Water Management District Governing Board Member Jacqui Thurlow-Lippisch joined Mast at the news conference on World Water Day. LEAH VOSS/TCPALM

Mast also wrote the agency a letter Monday, cosigned by Florida Sen. Gayle Harrell and Florida Rep. Toby Overdorf, both of Stuart. They urged the Army Corps to prohibit discharges to the St. Lucie River and make it a policy to send excess lake water elsewhere. It's a move the agency's own modeling shows is possible.

The Lake Okeechobee System Operating Manual, which the Army Corps is currently in the process of rewriting for the first time since 2008, is nicknamed LOSOM.

"We write to urge you to seize the once-in-a-decade opportunity provided by the drafting of (LOSOM) to stop poisoning our community," the letter reads.

How we did the calculations:

- The weekly average discharge rate is 1,500 cubic feet per second (cfs): 300 cfs to the St. Lucie River and 1,200 cfs to the Caloosahatchee River.
- One cfs is equal to 1.983 acre-feet per day, a figure the Army Corps uses to measure flow. So there are 2,970 acre-feet being released each day.
- There are 54 days between Thursday and June 1. Assuming a constant average weekly rate of releases, 160,380 acre-feet of water would be released.
- To remove 1 foot of water off Lake O, 467,000 acre-feet must be removed. So discharges to coastal estuaries will account for roughly 4 inches off the lake.

For more news, [follow Max Chesnes on Twitter](#).

Max Chesnes is a TCPalm environment reporter covering issues facing the Indian River Lagoon, St. Lucie River and Lake Okeechobee. You can keep up with Max on Twitter [@MaxChesnes](#), email him at max.chesnes@tcpalm.com and give him a call at 772-978-2224.