OPINION | Guest Column

William Felice

To fight Red Tide in Tampa Bay and the Gulf, does agro-ecology provide a path forward? | Column

As dead zones grow in the Gulf and around the world, Floridians and farmers need to change their ways.

Brothers John Fantini, 59, of Owensboro, Ky., Christopher Fantini, 57 of Rockport, Ind., and Danny Taylor, 52, of Sarasota, enjoy their vacation despite the fish kill from Red Tide at Indian Rocks Beach, on July 22, 2021. [ARIELLE BADER | Times]

In June, NOAA scientists estimated this summer's Gulf of Mexico "dead zone" — an area of low- to no-oxygen that kills fish and other marine life — to be approximately 4,880 square miles.

This month, the Pinellas County Public Works Department reported that Red Tide had so far led to the removal of more than 3.65 million pounds of dead fish from Tampa Bay this summer. The harmful Red Tide toxins have in addition contributed to a record number of manatee deaths this year in Florida.

William Felice [File photo]

The connection between "dead zones" and Red Tide is "eutrophication," which is excess nutrient loading caused by human activities. Some of the primary drivers of eutrophication are fertilizer run-off, livestock waste and sewage discharge. Coastal eutrophication is associated with harmful algal blooms, hypoxia, fish kills, seagrass die-offs, a loss of coral reefs and health hazards to swimmers and fishers. According to the United Nations, the number of dead zones worldwide — areas of water that lack sufficient oxygen to support marine life — increased from around 400 in 2008 to approximately 700 in 2019.

Agricultural run-off of fertilizers and other pollutants containing nutrients are a primary cause of algae to bloom and the reduction of water quality, leading to the creation of "dead zones." Such nutrient loading in Tampa Bay also contributes to Red Tide.

While Red Tide is often viewed as a natural occurrence, human activity can exacerbate the problem. For example, it is likely that the Red Tide bloom this year was made more severe as a result of the former Piney Point fertilizer plant releasing 215 million gallons of contaminated discharge into Tampa Bay. The Florida Department of Environmental Protection fears that significant rainfall during the current hurricane season could again cause Piney Point's reservoirs to overflow, leading to even more wastewater released into Tampa Bay.

Yet, the Red Tide crisis this summer can't be understood as simply the result of this one-time event. Scientists note, for example, that two-thirds of all U.S. rivers drain into the Gulf of Mexico, bringing huge annual nitrogen and phosphorous nutrient dumps from urban and agricultural run-off. This has created the enormous dead zone near the mouth of the Mississippi River. In addition, much of the runoff in Florida comes from the agriculture around Lake Okeechobee.

Is there a solution? Agro-ecology is an umbrella term that covers a lot of agricultural practices that minimize the use of toxic fertilizers and instead promote sustainable farming that works with nature. Agro-ecological farmers improve soil and plant quality with existing natural resources rather than using chemical inputs. Agro-ecology is based on respecting natural ecosystems to grow a diversity of crops that protect the long-term sustainability of farming. Such farming methods would eliminate the annual nitrogen and phosphorous nutrient dumps into our water. This approach to farming, which would require fundamental changes in U.S. agribusiness, may be our best approach forward.

Yet, is agro-ecology productive enough to feed the U.S. and the world's population? Yes. As discussed in our book Human Rights and Public Goods, 208 agro-ecology projects from 52 countries, involving nine million farmers, resulted in stunning yield increases of 50 to 100 percent! The U.N. Special Rapporteur on the Right to Food, Olivier De Schutter, concluded his study on agro-ecology by stating that such an approach could double food production within 10 years while reducing and eliminating the dangerous chemical nutrient run-offs.

For weeks this summer it became impossible to breathe the air, swim in the water or enjoy any outdoor activity in vicinity of Tampa Bay due to the Red Tide crisis. The long-term consequences on the human health and economic well-being of Florida's citizens are still being calculated. People with asthma or lung conditions remain particularly in danger. Eliminating the agricultural run-off of harmful toxins into our waters is a beginning step to address this crisis.

William F. Felice is professor emeritus of political science at Eckerd College. He is the author of six books on human rights and international relations and was named the 2006 Florida Professor of the Year by the Carnegie Foundation for the Advancement of Teaching. This article draws on material from his book (with co-author economics professor Diana Fuguitt) "Human Rights and Public Goods" (2021). He can be reached via his website: williamfelice.com.