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GUEST COMMENTARY

Ian reminded us that Florida is a swamp | Commentary

By Bobby Fokidis

Guest Columnist

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FEEDBACK

As we collectively recover from the devastation wrought by Hurricane Ian, I am reminded of how Florida was, and still is, a precarious society engineered out of a wilderness of water with the swamp as our oldest nemesis. But swamps are water meets land making them our ally in the fight against extreme weather.

Like any hurricane reaching U.S. shores, the commentary has now shifted from thoughts and prayers to the portrayal of Florida as a doomed 21st-century Atlantis. A place only made possible by pompous humans believing they can control nature through the brute force of wetland reclamation and civil engineering to allow for big money to be made from the development of private properties, often recklessly sold in high-risk flood zones. The advent of air conditioning, the abundance of in-ground pools, and bug spray helped ensure a steady stream of Northern migrants. This history is all true, and yet development will likely continue as it always has. As we rebuild paradise, now is the time for Floridians to consider the help of Florida's swamps. It did not have to be this way.

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The vulnerability of communities to hurricanes is from water unconstrained. Coastal storm surges and inland flooding from excessive rain generate the most significant proportion of any storm's economic and societal impact. Before the hotels, condos, and the red roofs of Mediterranean revival homes, the coastline was a mangrove swamp ecosystem. Uniquely native to Florida, the salt-tolerant mangrove trees (there are three distinct species) created vast saltwater forests

that served as fish nurseries and vital refuges for endemic wildlife.



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like manatees, cuckoos, and crocodiles. Their vast entangled root structures slowed the speed of winds and storm surges, slowly distributing that energy and water across the floodplain. Estimates say a 300-foot coastal mangrove buffer lowers the height of incoming waves by as much as two-thirds, drastically decreasing inland flooding.

Promoting extensive mangrove barriers beside residential communities can be a significant and sustainable buffer to storm surges.

A study of property damages from storms showed counties with coastal swamps experienced much less damage at an estimated yearly savings of \$1.8 million for every square kilometer of swamp left intact. The same models predicted that the coastal swamps lost between 1996 and 2016 increased property damage from Hurricane Irma by \$430 million. These facts are lost to real estate developers that, since the 1960s, have drained swamps to replace them with open-water canals. Dirt from dredging operations created mazes of waterfront properties in places where neither waterfront nor property existed before, in places like Cape Coral. In turn, regulators contest established science on flood risks and sea level rise to advance pro-growth land use policies.

This natural infrastructure of mangroves is part of flood risk assessment by only a few Florida insurance companies. The economic devastation of

only a few Florida insurance companies. The economic devastation of Hurricane Ian will likely put more pressure on Florida's already fragile insurance system, which has seen multiple firms go insolvent over the past two years. Considering surge and wind speed mitigation by mangroves could incentivize their conservation by developers and lower premiums. One can draw a direct line from how the historic loss of mangrove swamps to land developers has given rise to the current woes for insurance companies in Florida.

Inland Central Florida succumbed to what Gov. Ron DeSantis called a "500-year flood event" (i.e., one in 500 chance of such flooding in a given year) as the slow-moving storm dumped rain on an already near-saturated water table. Cities control surface runoff through a complex and integrated system of canals, drainage, retention ponds, and other flood control devices, but this infrastructure is easily overwhelmed during flash floods. Central Florida's swamps are natural sponges that trap and slowly release waters lowering flood heights and reducing erosion. Simply put, swamps take the "flash" out of flash flooding, and in cities, like Orlando, they can counteract water runoff from impenetrable pavement and buildings by absorption.

Swamps solve many of Florida's weather problems, yet Floridians and out-of-towners view swamps as useless wastelands that harbor dangerous animals, stinging insects, and stagnant water. All agree swamps have a place, just "*not near my property*," preferring open-water shorelines instead. We continue to drain and fill swamps and then name the streets Cypress Road and Mangrove Lane. It doesn't have to be this way.

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