

Finding Clues Into Mass Animal Die-Off May Play Out Like 'CSI: Indian River Lagoon'

BY [SASCHA CORDNER](#)

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Finding out the source of a mysterious animal die off in the Indian River Lagoon is the goal of many researchers and scientists across the state. They're searching for clues into the massive amount of unusual deaths of manatees, dolphins, and pelicans in what's known as one of the nation's most biologically diverse estuaries.

CSI: Indian River Lagoon

Taking a tour of the Southern part of Indian River Lagoon, Its Riverkeeper Marty Baum points out a small pod of dolphins frolicking in one part of the 156-mile estuary.

"Look, look, I think they're mating! I think he's chasing her down and trying to mate," said Baum. The water, starting to clear up after temporary relief from polluted discharges, is now a blue color—not so about a month ago.

But, it's over on the other side of the lagoon—the northern part—that has scientists truly worried. That area, often times called a hotspot, is the site of massive die off of pelicans, manatees, and dolphins, and right now, no one really knows why. Some even call it "a challenging form of CSI or Crime Scene Investigation."

The phrase is coined by Jan Landsberg, the state's lead investigator into all the mysterious animal deaths. She's also a research scientist for the Florida Fish and Wildlife Conservation Commission. Landsberg says what researchers are trying to work out is the common thread linking the three species' deaths.

"I suppose it is like a murder mystery. Someone was running from the scene. Well, they're obviously the culprit, when they're not, but it might be easy to assume that. So, in a way, perhaps in the beginning, the macro algae was the obvious thing, but maybe it's not because there are other things that start to become obvious," said Landsberg.



Credit Hubbs-SeaWorld Research Institute

A couple of dolphins that died in the mysterious die-off in the Indian River Lagoon.



Credit Sascha Cordner / WFSU-FM

Indian Riverkeeper Marty Baum in his boat, providing a tour of the Indian River Lagoon. The 156-mile estuary has been plagued by massive animal die-offs and the loss of thousands of acres of sea grass.

Landsberg is referring to algae blooms that have been plaguing the lagoon and have destroyed thousands of acres of seagrass—which all three species depend on in their own way.

Dolphin Die-Off

"That thing [seagrass] is really the thing that holds everything together and keeps everything sort of normal. And, because the seagrass died—we don't know what the indirect effects are—but, it seemed like everything happened after that, so we have to naturally assume that it's directly affected somehow," said Megan Stolen with the Hubbs-SeaWorld Research Institute in Melbourne Beach.

Stolen's expertise as a research biologist is dolphins and whales, and she and her fellow researchers have been looking into the more than 50 dolphin deaths in the Indian River Lagoon earlier this year, which she says have been particularly bad...

"You shouldn't see a dolphin with a neck. You know, they should be torpedo shaped. They should just be plump and around like a torpedo. And, anything, less than that, means their skinny or emaciated," she added.

The only bright spot was one bottlenose dolphin, who's since been released, that survived, and is still under monitoring by her Institute.

Manatee Die-Off

As for manatees, this year became the deadliest year ever for Florida's endangered sea cows. Close to 800 have died, surpassing the 2010 record by about 20. 111 of those were from the Indian River Lagoon alone. And, Dr. Brian Lapointe of the Harbor Branch Oceanographic Institute in Fort Pierce, says from examining the digestive tracts of manatees—who normally eat seagrass—the offender appears to be a red drift seaweed called Gracilaria.

"This plant here is Gracilaria," said Lapointe, as he uncovered a tank full of the seaweed. "It can double its biomass in as little as two and a half days under conditions of favorable temperatures, light, and high nutrients. It grows naturally in the Indian River Lagoon. But, because of all the nutrients, from septic tanks, fertilizer run-off, and the various human sources on the water shed, this plant has formed massive algae blooms, overgrows seagrasses, and can smother the seagrasses, cutting off the light they need for example, And, this has of course, affected the manatee."



Credit Sascha Cordner / WFSU-FM

Hubbs-SeaWorld Research Institute biologist Megan Stolen is looking at samples taken from dolphins who died in the mysterious die-off.



Credit Sascha Cordner / WFSU-FM

In the Hubbs-SeaWorld Research Institute, there are samples of what's been found in the stomachs of dolphins, and Research Biologist Megan Stolen says hooks included.

Lapointe is also working to figure out what's altered the chemistry of the Indian River Lagoon. He says while scientists are looking for the usual suspects, he says research needs to focus on the toxins in the lagoon.

Pelican Die-Off

Meanwhile, it's the pelicans that saw the worst of it in the mysterious die-off. An estimated 300 of them died in the Indian River Lagoon. And, Martin County Commissioner Sarah Heard may have a theory. She, at times, represents the lagoon's surrounding counties interests at Congressional hearings. She says perhaps, even for the pelicans, it could be as simple as not seeing any fish in the very opaque water. "Because, they of course, are heavily reliant on being able to dive-bomb the fish and scoop them up. So, if you can't see through the water, you can't fish," said Heard.

What's Next?

But, to find those answers and to continue searching for clues, it comes down to money. Some are hoping for federal grants, others may find relief in WRRDA Bill, or the Water Resources Reform and Development Act, while others hope for state money. State lawmakers for example, appropriated two million dollars for the Harbor Oceanographic Institute to continue its Indian River Lagoon research. Last year, they did the same for a similar venture, but it was vetoed by Governor Rick Scott.

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Dr. Brian Lapointe of the Harbor Branch Oceanographic Institute in Fort Pierce is holding up a red drift seaweed called *Gracilaria*, that has been found in the digestive tracts of manatees who mysteriously died.