# Source of brown water off Pine Island Sound baffles scientists

By Kate Spinner (Contact)

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A patch of water that resembles chocolate milk is lingering in Pine Island Sound and boggling scientists.

“We don’t know exactly what’s going on,” said Jennifer Nelson, environmental consultant for the Florida Department of Environmental Protection. “It seems like it’s something perhaps abnormal.”

From the north end of Pine Island Sound to Redfish Pass the muddy water extends across the bulk of the sound, but no one knows where it came from, why it’s lingering or what it is.

Area hydrologist Greg Rawl first noticed the plume from a satellite image a few weeks ago. Yesterday he took a flight in his airplane to track the unusual water and take photographs.

“I’ve never seen anything quite like it before,” Rawl said.

For the past several years, Rawl has been keeping track of how fresh water from the Caloosahatchee and Peace rivers spills into the Gulf of Mexico. The fresh water usually takes on a black or tea-colored hue from decaying plant matter in the river, but this plume is opaque and muddy.

Scientists with Lee County Environmental Lab, Sanibel Captiva Conservation Foundation and the DEP are all equally baffled.

“When I saw the photos, they reminded me more of sediment run-off,” said Steve Bortone, biologist with Sanibel-Captiva Conservation Foundation. He said he’d like to see someone test the nutrient levels inside and outside the plume.

Rawl and Bortone said it’s in an interesting location because nitrogen-rich water from the Caloosahatchee and phosphorus-rich water from the Peace intermingle in Pine Island Sound. Nitrogen in the Caloosahatchee comes primarily from fertilizers and organic matter that wash into the river from the watershed and Lake Okeechobee. The Peace is naturally high in phosphorus, but phosphate mining along the river exacerbates the conditions.

Muddy Water

Keith Kibbey, manager of Lee County Environmental Lab, also speculated that the two rivers could be contributing to the odd water.

He said the county's staff is stretched too thin to check the water. Instead, the county will rely on the DEP's data.

Nutrients such as nitrogen and phosphorus feed algae blooms, but Nelson said she found no evidence of an algae bloom within the muddy water. The DEP has not tested the water for nutrients, but it will test for nutrients Wednesday.

Low dissolved oxygen levels are a tell-tale signs of an algae bloom that has come and gone, but Nelson also found dissolved oxygen to be normal and about the same inside the plume as on the outside. She also said salinity is about the same inside and outside the plume, indicating that it's not an isolated pocket of fresh water.

"It's not coming from the Caloosahatchee or out of Charlotte Harbor. It's just sitting in the middle of Pine Island Sound," Nelson said.

Rather than algae, she said, water samples showed high levels of mineral granules within the discolored water. But the turbidity isn't coming from the rivers either.

"That's why there's not an obvious source of this," Nelson said.

The plume would be easier to explain if it were winter, when high winds tend to stir up silt at the bottom of the sound.

While the dirty water remains a mystery, it does not appear to be causing harm, Nelson said.

If it persists it could shade out sea grasses by excluding light from the water.

"Really we're just trying to determine if it's even a problem. There's no dead fish. There's no harmful algal bloom," Nelson said.