The Muck Report

What is lagoon muck?

Muck is a mixture of silt, clay, minerals and organic matter. It comes mostly from soil runoff from construction, farming and erosion along waters that lead into the lagoon, but also from rotting organic matter from algae and dead plants in the lagoon. Too much plant growth from fertilizer and sewage seeping into the lagoon can add to the muck buildup. Muck is so fine that it suspends easily in the water, clouding it up, blocking the sun's penetration and limiting the growth of sea grasses, the main food for manatees and the most important habitat for fish and other lagoon life. Muck can impact the estuary just as badly as nitrogen and phosphorus ruining its biodiversity says Mark Perry of FOS. In fact, a study by the Smithsonian Marine Station in Ft Pierce conducted over the last 15 years has found that only one type of clam and one species of worm can tolerate the muck. Certainly no biodiversity in that.

No one knows how much Muck is in the lagoon but Kevin Henderson, E.D. St. Lucie River Initiative, Inc., estimates there is between 31 million and 50 million cubic yards of muck covering the floor of the estuary. The most muck can be found from the Palm City Bridge to the Evans Crary Bridge. Some areas, especially in the middle of waterways have muck depths of at least 15 feet. It's believed that if muck keeps entering the estuary at the current rate the St Lucie will become nothing but sandbars and mud flats. And because the muck flows out the inlets on outgoing tides the near shore reefs are being blanketed and literally smothered by the silt. So there's no doubt, we've got MUCK both inside and out.

Get the MUCK out!!!

Why Muck Matters

Source: John Trefry, Florida Tech.

1.) **Muck is a mixture of silt, clay, minerals and organic matter.**
2.) **Muck comes mostly from soil runoff from construction, farming and erosion along waters that lead into the lagoon.**
3.) **Muck suspends easily in the water, clouding it up and limiting sea grass growth and the fish and organisms that live in them.**
4.) **Muck adds to bacterial decay, which eats oxygen from the bottom sediment and water, potentially causing fish kills.**
5.) **Studies indicate that only one type of clam and one species of worm can tolerate the muck.**
6.) **Muck produces noxious chemicals, such as hydrogen sulfide that creates the rotten egg smell noted in many areas of the lagoon.**
7.) **Muck blankets otherwise sandy bottoms and pristine coral reefs, changing the makeup of organisms.**
8.) **Muck serves as a depository for many pollutants like heavy metals, pesticides and herbicides.**
9.) **Muck adds excess nutrients to the water that contribute to harmful algae blooms.**
10.) **There is between 31 million and 50 million cubic yards of muck covering the floor of the estuary**

What's in the water

Water, nutrient and silt accumulations in the St Lucie River estuary from Lake Okeechobee and the C-44 Canal basin from May 8 (when Lake O discharges began) and October 1, 2013. (Gary Goforth, a Stuart Engineer)

Water

Total discharges: 200.5 billion gallons

62% from Lake Okeechobee

38 % from C-44 Canal basin

Phosphorus

Total: 171 tons

61% from Lake Okeechobee

39 % from C-44 Canal basin

Nitrogen

Total: 1, 190 tons

54% Lake Okeechobee

46% C-44 Canal basin

Silt

Total: 30,500 tons

24.6% from Lake Okeechobee

75.4 % from C-44 Canal basin