



# Wave Maker's News

Volume II Issue 3

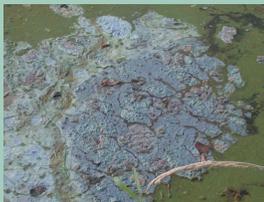
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Welcome to 2007's last issue of *Wave Makers' News*! In this issue we'll delve deeper into nitrogen and phosphorus pollution in our waterways. Find out more about nitrogen; red tide and fertilizer ordinances in Florida; and what EPA is (or perhaps more appropriately, is not) doing to address nitrogen and phosphorus pollution in our nation's waterways. Also, an update on the Yazoo Pumps Project.

## *Tide starts to turn in Florida*

In 1900 Florida's population was roughly 500,000 people. Today Florida's population is cresting 18.6 million. The planning and growth management organization 1000 Friends of Florida recently released a report that estimates Florida's population will hit 35 million people in the year 2060. Millions of yards with ornamental plants, St. Augustine turf, and a regular need for large amounts of water and fertilizer can not be a part of a sustainable future in Florida.

Every year the evidence grows in Florida that there is a serious consequence to more people using more water and creating more pollution and runoff. Florida suffered incredible red tide outbreaks over the last few years—particularly in 2005 and 2006—that cost the state millions in lost tax revenue. This event seriously impacted recreational and commercial fisheries and threatened the livelihood of coastal business owners. The ecosystem impacts were even more severe with mortality to manatees, sea turtles, dolphins, and hundreds of species of fish. Florida beaches, the selling point of the "Florida dream," became nightmarish places with tons of dead fish and toxic air.

Citizen and community groups in Sarasota County, Florida were some of the first in the state to begin fighting back and protecting Florida's coastlines from pollution, runoff, red tide, and degraded water quality. While there is some scientific debate as to the degree of the connection between increasing red tide outbreaks and the massive coastal pollution Florida is experiencing (the connection seems to be growing clearer), there is clear and compelling evidence that harmful algal blooms (HAB's) and increasingly degraded estuaries are directly connected to coastal pollution. Much of it comes from



Photo Courtesy of Harrison Fox

non-point source stormwater runoff that carries massive amounts of fertilizers and pesticides from the lawns of Floridians to the places we like to fish and swim. Sarasota County clean water and coastal advocates decided to focus their efforts on a local fertilizer ordinance that could have immediate impacts on protecting local water quality.

After months of hard work, research, organizing, and outreach, a coalition of groups including the Manatee/Sarasota Sierra Club, the National Sierra Club, the Healthy Gulf Coalition, and Capt. Wayne Genthner of Wolfmouth Charters were able to pass one of Florida's first and strongest local ordinances regulating the use of fertilizer on landscaping to protect regional water quality.

This ordinance, considered a model for

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## Holding Up Healthy Water: How EPA Has Failed to Reduce Nitrogen and Phosphorus Pollution

Nitrogen and phosphorus are two very common pollutants responsible for many water pollution problems. Next to sediment, nitrogen and phosphorus pollution, are the top cause of water pollution today.

There are over 10,000 water bodies listed in the United States as being polluted by nutrients. High levels of nitrogen and phosphorus in waters can cause harmful algal blooms, including blooms of toxic cyanobacteria. In addition to causing weed-choked waterbodies, nitrogen and phosphorus pollution can result in levels of dissolved oxygen in water that are so low that most life cannot survive. The most infamous area of low oxygen is the Dead Zone in the Gulf of Mexico, which occurs every summer and is roughly the size of New Jersey.

Despite the massive water problems caused by nitrogen and phosphorus pollution, the Environmental Protection Agency (EPA) has done relatively little to address the problem. The first step in protecting waters from pollution requires the EPA to set limits on how much of a particular pollutant can be tolerated by a river or lake



Photo Courtesy of Kris Sierford

*Toxic algae bloom fueled by pollution*

without harm to human health, recreation, or aquatic life. Once a standard is set, the EPA and state agencies can then enforce limits on individual polluters. Without a basic standard, polluters are free to discharge an almost unlimited amount. Unfortunately, the majority of states lack standards for nitrogen and phosphorus. In fact, as of May, 2007, Hawaii was the only state with nitrogen and phosphorus standards for all rivers in the state.

Even though there is scientific consensus that nitrogen and phosphorus are the primary cause of the Dead Zone, the EPA has failed to act – and the reason has more to do with politics than science. In 2000, EPA published guidance to help states develop standards for rivers, lakes, and reservoirs. The EPA also suggested specific stan-

dards for nitrogen and phosphorus for different regions throughout the country. At the time, the EPA's position was that states had the right to develop standards specific to each state. If states did not have nitrogen and phosphorus standards in place by 2004, EPA would force states to adopt the recommended EPA standards.

Well past the 2004 deadline and with the problem growing in size, the EPA has still not forced action, and has now completely backed away from the original deadline. A 2007 memo from Assistant Administrator Benjamin Grumbles simply states, "The progress of States and Territories in setting numeric nutrient water quality standards is extremely important to help address nutrient pollution." Rather than forcing states to adopt nitrogen

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### *Red tide and fertilizer* (continued from page 1)

other counties and cities, is now being discussed in numerous coastal counties in Florida. Sarasota activists and organizations won a tremendous victory in this ordinance, and they have begun a statewide conversation about how to pass ordinances across Florida.

The Gulf Restoration Network is working in coalition with a network of national, regional, and local groups to take this ordinance to other coastal counties along the Gulf Coast of Florida and make connections between the health of our coastlines, and the health of Florida's rivers and springs.

For more information about the text and language in the Sarasota County Fertilizer Ordinance you can contact the Florida Office of the Sierra Club at 727-824-8813, or email Sierra Club Coastal Campaign Director Stuart Decew at [stuart.decew@sierraclub.org](mailto:stuart.decew@sierraclub.org) ■

#### **Sarasota County Fertilizer Ordinance Provision:**

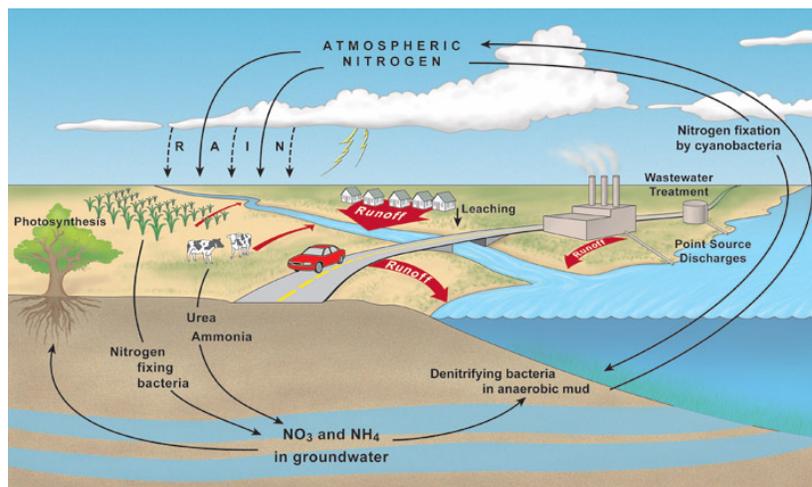
- Prohibits residents from applying fertilizers containing nitrogen or phosphorus in the rainy season, June 1 - Sept. 30.
- Sets maximum levels for the amount of nitrogen and phosphorus that legal fertilizers can contain.
- Sets a fertilizer-free zone within 10 feet of any body of water and creates a voluntary "low maintenance zone" within six feet.
- Requires the use of fertilizers that are at least 50% "Controlled or Slow" release.
- Requires all commercial fertilizer applicators to receive proper certification and training in Sarasota County Best Management Practices.
- Sets penalties for violators starting with a warning and rising to \$500.

## The many faces of nitrogen

For those of you that have been reading our newsletters, emails, and action alerts, you are already aware that nitrogen pollution is a major cause of a multitude of water quality issues, including the massive Dead Zone that forms at the mouth of the Mississippi and Atchafalaya Rivers. It is important to remember that not all Nitrogen is bad. In fact approximately 75% of the air we breathe is composed of the inert elemental form of nitrogen,  $N_2$ . It is when too much  $N_2$  is converted or "fixed" into other forms of reactive nitrogen, including nitrate ( $NO_3$ ), nitrite ( $NO_2$ ), ammonia ( $NH_3$ ), nitrous oxide ( $N_2O$ ), and other forms of nitrogen oxides ( $NO_x$ ) that our environment can show signs of degradation. In nature,  $N_2$  is converted into these more biologically usable forms of nitrogen by several processes, including conversion by nitrogen-fixing legumes (such as soybeans), blue-green algae, and lightning. This reactive nitrogen can then be used as a nutrient to foster growth of plants and animals.

The problem is that human activity has disrupted the natural nitrogen cycle. Too much reactive nitrogen has been introduced into our environment from synthetic fertilizers, poorly treated sewage, and the burning of fossil fuels. This glut of reactive nitrogen pollution finds its way into our water, land, and air, causing human health and ecological problems. Following are a few examples:

- Runoff from agricultural fields, discharges from sewer treatment plants, and atmospheric nitrogen have polluted the world's waters and created Dead Zones.
- Too much nitrate in drinking water can cause methemoglobinemia, or blue-baby syndrome and is associated with an elevated risk of colon cancer and neural tube defects.
- Burning fossil fuels releases reactive nitrogen pollution into the lower atmosphere where it reacts with other chemicals and sunlight to create ozone, a known respiratory irritant which leads to human health problems.
- Nitrous oxide ( $N_2O$ ) is a potent greenhouse gas—it stays in the atmosphere for 120 years and is 310 times more potent than carbon dioxide at trapping heat in the atmosphere.



The Nitrogen Cycle, Courtesy of Florida Sea Grant

Due to the multitude of sources and effects of different forms of nitrogen pollution, it is important that we look at reducing the amount of this pollution coming from all sources: agricultural fields to coal-fired power plants. We also should be looking at ways that reactive nitrogen pollution can be converted back into the non-reactive  $N_2$ . One way that nature converts nitrogen pollution into  $N_2$  is through a bacterial process that occurs naturally in coastal wetlands. Unfortunately, we are losing this free service provided by our Gulf Coast wetlands because they are being destroyed and inundated at an unbelievable rate.

Not only are our wetlands important for storm and flood protection, wildlife habitat, and water filtration, they have the potential to remove reactive nitrogen pollution from our environment. Nitrogen pollution comes in many forms, the bottom line is that we need to reduce the human-caused nitrogen pollution that reaches our land, water, and air in order to get the nitrogen cycle back the way nature intended. ■

### Study Shows Nitrogen Fertilization Does Not Increase Carbon Sequestration:

Research from the University of Illinois has revealed striking evidence that heavy nitrogen fertilization does not increase carbon sequestration potential in the soil. This flies in the face of the long-held notion that fertilizer increases the potential of soil to lock away carbon. Increasing soil nitrogen levels has been assumed to increase carbon storage however, this data, a century's worth of measurements on crop inputs and outputs, show exactly the opposite - fertilization causes a net loss of soil organic carbon.



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## UNITED FOR A HEALTHY GULF

### *Inaction Continued* (continued from page 2)

and phosphorus standards by a specific date, the EPA is now merely asking states to do so politely and to no effect.

In the meantime, many states have argued that they don't have enough science to adopt nitrogen and phosphorus standards because the relationship between the pollutants and problems such as algal blooms and dead zones is complex. Some states such as Illinois, where nitrogen and phosphorus pollution are prevalent, are now actively trying to produce science that says that nitrogen and phosphorus pollution aren't the cause of algal blooms – it's too much sunlight.

Unsubstantiated "scientific" claims have served as a convenient excuse for states that are not anxious to adopt nitrogen and phosphorus standards because it will mean that sources such as sewage treatment plants could potentially be in violation of water quality standards and will require expensive retrofits. The agribusiness lobby has also been active in opposing any standards that will illuminate the fact that fertilizer runoff is playing a large role in the degradation of our nation's waters.

In a 2007 report on Mississippi River water quality, the Nation Research Council (NRC) was highly critical of the lack of action by EPA to reduce nitrogen and phosphorus pollution. According to the NRC, in order to meet water quality objectives in the Mississippi River and reduce the Dead Zone, the EPA and states must establish standards for nitrogen and phosphorus pollution. Otherwise, fixing the problem is not possible.

It is time for the EPA to stop making excuses and buying time for polluters that are having a devastating impact on rivers, lakes, and the Gulf of Mexico. Please join us in sending the EPA a message that it's time to act and stop stalling in creating nitrogen and phosphorus standards. Our rivers, lakes, and bays, and the people that use and depend on them deserve better. ■

### *Yazoo Pumps: Let's Dump Them*

First proposed in 1941, the Yazoo Pumps project is the classic boondoggle that just won't go away. This World War II era project would, according to the Environmental Protection Agency, drain 200,000 acres of wetlands. If constructed the Yazoo Pumps would be the world's largest pumping system, and the \$200 million cost would be borne solely by federal taxpayers.

Wetlands are important for flood protection and to filter pollution out of our waterways. The project will make more land available for agribusiness. With wetlands shifting into farmlands, fertilizer application will increase and natural filtering systems will be diminished. Earlier articles discussed what nitrogen and phosphorus do to our waterways. The Yazoo Pumps project will only exacerbate the problem.

Mississippi Senators Trent Lott and Thad Cochran are championing the project, citing the pumps as necessary for local economic development and flood protection. But their view of economic development is extremely narrow. The 200,000 acres of wetland that the project would destroy provide many benefits to the Mississippi economy in the way of wildlife habitat, flood water storage, water purification, and recreation. As the Environmental Protection Agency has pointed out, the money spent on this project be put to better use locally by updating ailing sewage treatment plants, obtaining conservation easements, and promoting nature tourism in the region. The line needs to be drawn somewhere, economic development does not and should not require environmental destruction. In the 1996 Water Resources Development Act, Thad Cochran successfully slid in language to get rid of the local cost share.

The final Environmental Impact Statement was published this week, now is the time to kill this project once and for all. Please join us in sending comments to the Army Corps of Engineers; EPA Administrator Stephen Johnson; and interior secretary, Dirk Kempthorne. ■