

Effects of nutrient pollution on the neuse river assignment



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The Neuse is one of only three rivers in North Carolina whose boundaries are located entirely within the state. Encompassing over 6, 000 square miles of watershed and stretching about 248 miles, it begins northwest of Durham, NC, in a 10-acre farm pond which is the headwater of the Eno. From there it feeds into Falls Lake, located on the north side of Raleigh, NC. From the Raleigh-Durham area, where it is a freshwater river, it flows generally south of east toward the Pamlico Sound, passing through many cities, farms, and swamps.

It becomes a shallow, slow-moving, brackish (where freshwater and salt water meet) estuary (is a semi-enclosed coastal body of water with one or more rivers or streams flowing into it, and with a free connection to the open sea) just upstream from the city of New Bern, in western Craven County. It is wider here at its upper estuary and is affected by wind-driven currents, as well as by salt water that move upstream from the Pamlico Sound. The lower Neuse estuary begins in the area of Flanner's Beach and Minnesott Beach and continues emptying into the Pamlico Sound.

There, the mouth of the Neuse is reported to have the widest river mouth in the continental US. The Neuse River is one of three large rivers that flow into the Albemarle and Pamlico Sounds. The Neuse's provides approximately 2, 750 acres of prime nursery habitat, and 1, 250 acres of secondary nursery habitats. The Neuse is an important habitat for such fish as shad, herring, catfish, bass, and flounder. The Neuse is also home to vital populations of blue crab and oysters. Of the 3. million acres that comprise the Neuse Basin, 48, 000 acres are state parks, 110, 000 acres are game lands held by the Wildlife Resources Commission, and 58, 000 acres are National Forest. The <https://assignbuster.com/effects-of-nutrient-pollution-on-the-neuse-river-assignment/>

Neuse River drains land in 19 counties covering 6, 192 square miles. More than 1, 500, 000 people (1/6 North Carolina's population) live in the basin. Many more come to visit each year. Hog production in North Carolina takes place in the worst possible place, on the flood prone coastal plain. This area has a great deal of sandy soil and a high water table. To make it suitable for farming, a massive ditching system was built.

This ditching drops the water table by promoting runoff. Without this runoff, much of this area would be too wet to farm. Hog waste is extremely harmful to wetlands, streams, creeks and rivers. When hog waste gets into the water it can instantly kill fish and other small life forms that come into direct contact with it. Worse is the significant damage caused over time from the cumulative effect of the continuous runoff of the nutrients from hog factories and other sources, especially nitrogen and phosphorus. When these nutrients arrive at the estuaries, they settle out into the sediments.

This is called nutrient pollution. Nutrients are a necessity but too many nutrients can be harmful. Many of our nation's waters, including streams, rivers, wetlands, estuaries, and coastal waters, are affected by nitrogen and phosphorus pollution. The effect of nitrogen and phosphorus pollution for a given water body depends on its ecoregion and its sources of nitrogen and phosphorus. One of the problems of nutrient pollution is that it creates algal blooms. Many thousands of species of marine algae form the base of the world's marine food web.

Pfiesteria is one of only 80 to 90 of these species ??? a very small percentage ??? that produce toxins that can affect human health. Under

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certain conditions, a dense growth of algae causes “ blooms” which color the water red or brown and sometimes produce harmful toxins. Called Harmful Algal Blooms, they can cause serious disease and other chronic impacts on finfish, shellfish and aquatic mammal health. An unusually problematic algal species has brought new attention to harmful algal blooms in the Neuse. It differs from most known toxin-producing algae in that it does not produce a pigment and thus gives no visual evidence of its activity.

Among the indicators of potential toxin activity by *Pfiesteria* species are fish with deep sores and fish kills, though laboratory tests are currently required to confirm their presence. Noticeable nontoxic algal blooms occur regularly in many coastal systems around the world and some feel that their occurrence is on the rise. In the Neuse in September 1995, more than 20, 000, 000 fish died and scores of fishermen and residents complained of health problems. The state was forced to close the Neuse to fishing for approximately two weeks.

The news related to this event traveled worldwide in just a matter of days. Recently there was another wave of fish kills in the Neuse River said to be brought on by this same phenomena that killed more than 50, 000, 000 dead fish that have been scientifically documented. It is estimated that another 50, 000, 000 or more fish sank to the bottom before they could be counted. Some estimates of the total number of fish killed during this event now exceed 100, 000, 000. The citizens of North Carolina, especially those from the coastal plain, have protested the hog industry practices for a long time.

When you have industrial hog production, you have something no one else wants. Quiet and friendly neighborhoods have been turned into battle zones. In North Carolina the hog industry has caused citizen unrest throughout the areas where they are situated. Ultimately the federal government stepped in with about \$200 million to help restore the river. The state came up with a bunch of programs aimed at reducing nutrient pollution. Eleven wastewater discharge pipes were pulled out of the river. A lot of things did happen between 1995 and 2000 to fix the river and fish kills declined.

But the hog farms are still there. The recent fish kill is a testament to the fact that something must be done. The main problems and concerns with closing the hog farms or at least regulating their runoff are mostly economical. You are talking about a huge industry in North Carolina and many farmers' livelihoods. They need to have stronger regulations and enforcement of those regulations. " The state has not followed through on the nutrient reduction programs because of all the pressure from some of the very same people who were complaining back in 1995, the tourism and development community.

All the people who suffered the economic pain and helped us get the state to set up pollution control programs now want to put pollution pipes discharging partially treated sewage back into the river. Towns, like Havelock, want more sewer capacity and the easiest way to get it is to put the pipes back into the river. We cannot allow greed and short memories to prevail". <http://hsgac.senate.gov/031302dove.htm> <http://www.pfiesteria.seagrant.org/> <http://www.epa.gov/waterscience/criteria/nutrient/basic.htm> <http://www.riverlaw.us/theneuse.html> <https://assignbuster.com/effects-of-nutrient-pollution-on-the-neuse-river-assignment/>