

Hope On The Horizon For Water Quality

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By Michael Wright

Last year was not a good one for the South Fork's bays and ponds. Fish-kills, a large turtle die-off, and widespread toxic and destructive algae blooms were just a few of the local hallmarks of the mounting water quality problems that have become the cause celebre for much of Suffolk County.

But while things looked as dire as ever in 2015, the region's most recognized stenographer of water quality's demise on the East End says that there is significant reason for hope in the fight against water quality, if not quite a light at the end of the tunnel.

Dr. Christopher Gobler, a marine biology professor at Stony Brook University and the leader of the team of scientists and graduate students who have gathered water quality data across Long Island for a decade, will present his annual "State of the Bays" report this Friday, April 1, at the SBU-Southampton campus. His report, while dour in terms of the conditions seen in 2015, will highlight some potential good news.

"The forward view is that there is now very good progress being made toward addressing this issue of nitrogen loading," Dr. Gobler said, of what scientists see as the main driver of water quality problems: nitrogen from human waste seeping into bays and ponds from old, ineffective residential septic systems. "There is emerging and retrospective data that shows multiple examples of water quality improvement when efforts are made to reduce nitrogen loading."

Dr. Gobler said that one of most important steps has been the acceptance by Suffolk County government that much of the problem is being caused by poorly-crafted regulations from decades past and a failure of the county to keep up with evolving scientific understanding.

With the state's Long Island Nitrogen Action Plan urging it along, the county Department of Health is set to approve this year some new residential septic system designs that would lower the amount of nitrogen that seeps into the ground from a house. Once approved, townships could incentivize, or potentially mandate, their use.

Some wastewater system designs being tested at the Center For Clean Water Technology, a new state-sponsored septic technology research center at SBU, could prove even more effective at eliminating nitrogen loads. One system would employ a web of perforated PVC pipes buried a foot or less below the surface of a home's yard, slowly releasing waste water into the soil. In such shallow drain fields, plants and microbes, or even specially chosen materials buried beneath them, could remove nitrogen before it reaches groundwater—as opposed to traditional cesspools buried deep underground where they often leach waste and nitrogen directly into groundwater tables.

Dr. Gobler said other steps are showing promise as well, like burying underground layers of filtering material that neutralizes nitrogen as groundwater flows through it, harvesting seaweed from local bays before it decays and releases absorbed nitrogen and phosphorous back in the water, and planting dense beds of shellfish to gobble up nutrients out of the water column.

Dr. Gobler notes, however, that with 370,000 residential cesspools in Suffolk County—there are only 50,000 in the entire state of New Jersey—and some areas where it takes decades for pollution to reach tidal waters, the county still has a huge mountain to climb.

“Even if we fixed septic now,” he said, “we’re still going to be seeing impacts from nitrogen for decades. Because in many parts of Long Island groundwater, travel times are decadal, even if we fix septic now we’re still going to be seeing inputs of nitrogen for decades.”