



## To HAB and to HAB Not: Harmful Algae Are Blooming in New York's Waters

By **Barbara Ann Branca**

*New York Sea Grant Communications Manager*

**H**armful algal blooms or HABs have become a worldwide phenomenon, posing a significant threat to public health, economies, water quality, and fisheries. New York State, with its bounty of freshwater lakes and ponds and miles of coastal ocean has had a rainbow of harmful algal blooms—some of them toxic to aquatic life and pets.

During the 1950s there were green tide blooms in Long Island's (LI) south shore bays that negatively impacted the oyster fishery. This year (2015) marks the 30th anniversary of brown tides occurring in LI's south shore and east end bays, destroying eelgrass beds, decimating scallop fisheries and greatly reducing New York's historically profitable scallop and hard clam fisheries. Since 2006, toxin-producing red tide blooms have caused shellfishery closures within LI estuaries. For decades, the toxins in cyanobacteria (formerly known as blue-green algae) have negatively impacted drinking water in New York's Great Lakes region and even fresh water ponds on Long Island. A highly publicized recent example was in 2014 when the city of Toledo, Ohio, had to shut down its public water supply because of cyanobacteria in the Lake Erie waters surrounding its intake.

For the last two decades, New York Sea Grant researchers have been observing and studying the causes of such blooms and educating the public and officials about possible ways to mitigate their effects. Generally, growth of these algal blooms can be linked to the addition of everyday chemicals like nitrogen and phosphorus that enter waterways

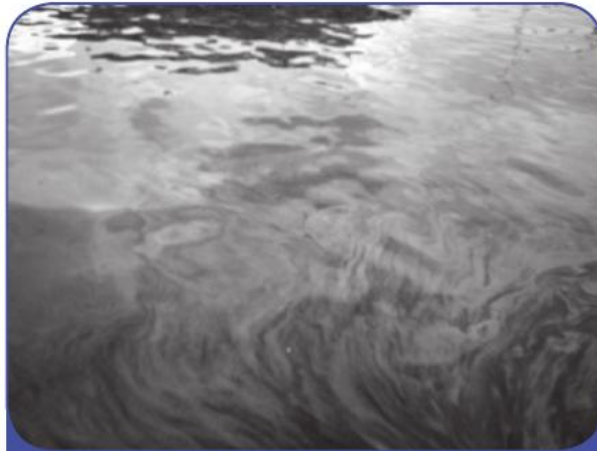
from our wastewater as well as from natural processes. Nitrogen and phosphorus act like nutrients, encouraging cell growth. Unchecked, the algae become the dominant species, crowding out other species in the living community.

High concentrations of brown tide harm shellfish, but do not pose health risks to humans. Some red tide (*Alexandrium*) can cause illness in people who consume shellfish contaminated with its toxin. But in fresh water, some species of blue-green cyanobacteria produce potent toxins that may result in nerve and liver damage — even death—in animals that have been exposed. Unfortunately, those animals are sometimes our dogs.

New York Sea Grant Extension's Dave MacNeill, based in SUNY Oswego and organizer of a recent HAB workshop, had observed that every year in New York's Great Lakes region there is an increasing number of dogs who were being exposed to harmful algal blooms. Those exposed to blooms with high levels of toxins had poor outcomes—either death or permanent disability. And those exposed over long periods of time to lower levels of toxins still suffered cumulative effects. "People get sick, but dogs die," said MacNeill.

According to Cornell Veterinary College's Dr. Karyn Bischoff, the number of reported cases of HABs poisoning in dogs is probably underestimated because pet owners are not aware of the problem. The Center for Disease

Control reported there were about 400 documentable cases of canine poisoning by blue-green algae during the past century but



Lake Erie



*Continued on page 50*

Continued from page 49

acknowledge this is a small fraction of cases that have occurred. The time is now to let dog owners know of the risks of letting their dogs play in water contaminated by cyanobacteria.

If a dog begins to show signs of HAB poisoning—lethargy, vomiting, abdominal swelling—and requires intense veterinary care, dog owners may be spending more to care for their pets. Many waterfowl hunters take their trusty retrievers with them—dogs that may cost anywhere from \$500 to \$2000. According to US Fish and Wildlife Service, waterfowl hunters spend about a \$1000 per year maintaining and outfitting their hunting dogs. This adds up to \$900 million annually, with \$20 million spent in New York State alone. The very real threat of HABs, which can affect the health of waterfowl as well, may affect the \$2.4 billion impact waterfowl hunting has on the US economy.

Cyanobacteria have not only harmed pets and tainted some water supplies, they can be devastating to the local tourism-based economy. Case in point is Sodus Bay, NY, a popular boating destination on the east end of Lake Ontario. The 2010 bloom that occurred in Sodus Bay jeopardized the drinking water of its residents and unexpectedly and prematurely ended the tourism season, and generally harmed the local businesses.

We generally think of New York's freshwater resources as being the State's two Great Lakes, the Finger Lakes, and New York's

great river systems and their tributaries. However, in the summer of 2014, cyanobacteria were detected in Suffolk County on eastern Long Island, according to Dr. Chris Gobler, Stony Brook University's School of Marine and Atmospheric Sciences, a recognized expert on brown tide, red tide, "rust tide," as well as cyanobacteria. In fact, Dr. Gobler points out, more positive tests come up for cyanobacteria in Suffolk County than any other county in the state. In 2012, the New York Department of Health linked a canine death in Suffolk County to a cyanobacteria bloom.

What can people do to prevent harmful algal blooms? According to the NYS Department of Environmental Conservation, New Yorkers can do their part by reducing the amount of nutrients (phosphorus and nitrogen) that goes into the State's water bodies. Try limiting lawn fertilization, maintaining septic tanks and shoreline buffers, and reducing erosion and stormwater runoff. Because HABs develop best in stagnant water, boaters can try maintaining water movement by using the same "bubblers" in summer that are used to keep ice from forming in winter. Boaters and property owners, pet lovers and tourists alike—let's do our part and keep New York's waters safe for ourselves and our pets.

For more go to: [www.seagrant.sunysb.edu/btide/pdfs/HABsBrochure-0814.pdf](http://www.seagrant.sunysb.edu/btide/pdfs/HABsBrochure-0814.pdf). And to find out if cyanobacteria are in water bodies in your county, check [www.dec.ny.gov/chemical/77118.html](http://www.dec.ny.gov/chemical/77118.html). 



## FISCAL ADVISORS & MARKETING, INC.

Municipal Advisors to Local Governments

Registered Municipal Advisors Serving New York State Municipalities Since 1967

Bond & Note Issues • Refunding Bond Issues • Lease Financings • ETC Short and Long Term Financings •  
Energy Performance Contract Financing • Credit Rating Assistance •  
Accounting & Bookkeeping Services • Cash Flow Borrowings • Continuing Secondary Market Disclosure

### CENTRAL NEW YORK CORPORATE HEADQUARTERS

[www.fiscaladvisors.com](http://www.fiscaladvisors.com)

120 Walton Street, Suite 600, Syracuse, NY 13202

Phone (315) 752-0051 • Fax (315) 752-0057

John Shehadi, CIOMA, Chairman, Municipal Advisor • Mark Wislesky, CIOMA, CEO, Municipal Advisor  
Christine M. Crowley, CIOMA, Municipal Advisor • Benjamin J. Marsden, CIOMA, Municipal Advisor

#### CAPITAL REGION

Jeanne Rodgers Caruso, CIOMA, MBA, President, Municipal Advisor  
35 Glazer Terrace, Clifton Park, New York 12065  
(518) 564-8100

#### LONG ISLAND REGION

Mary Jo Bella, MBA, Account Representative  
15 Robinson Drive, Bethpage, New York 11714  
(516) 494-8535

#### WESTERN NY

Kelly Lathan, Municipal Advisor  
3 North Avenue, LeRoy, New York 14482  
(585) 502-5010



Founding firm member of the National  
Association of Municipal Advisors

7/24