Algae's Perfect Storm?

They come in lots of colors, some of it them are harmful, even deadly and the world is talking about it.

On October 30, NPR's *Living on Earth* show described the environmental conditions resulting in the growth of golden algae that was so fast and vast that it killed almost every aquatic creature in Pennsylvania & West Virginia's Dunkard Creek in mid-September. A long-time resident, Jesse Graham, described the stench coming from the dead fish, mussels, salamanders and crayfish while buzzards circled overhead and the deer wandering into yards looking for water to drink. The show highlighted the conditions leading to the algae bloom such as pollution from nearby coal mining and gas drilling, along with rain and warm temperatures. Erica Peterson of West Virginia Public Broadcasting called it the Perfect Storm for a Fish Kill.

The day before, I was at a conference of the Massachusetts Association of Health Officers (MHOA) and listened to Vanessa Yandell from our own Massachusetts Department of Public Health (MDPH) and their Bureau of Environmental Health, talk about this year's study of Massachusetts' harmful algae blooms. MDPH received funds from CDC to track and collect data on the algae, conditions and parameters of the ponds and any possible detrimental effects of the algae such as fish kills and illness or even death to animals or people. Yandell pointed out how fortunate we were to not have any animal deaths from algae, as other states had. That is, as far as we know. There was one documented case of a girl who experienced a rash, sore throat and ear pain after swimming in the green water but being better informed of health effects was on the list of improvements needed. We can't correlate what we don't know.

As more people pay attention to this problem of harmful algae throughout the world, more people become partners gathering information, making observations and becoming better informed as to preventing the blooms and protecting themselves and their pets. When Ms. Yandell contacted Mass. Wildlife and Fisheries regarding the fish kills at Lake Attitash in Amesbury, W & F were able to confirm the presence of toxins in the fish and became an important player in this limnological situation. Yandell hopes that future collaborations will continue with hospitals, poison control and veterinarians becoming aware of the importance of documenting health effects from algae and reporting them to DPH and CDC.

This is such an exciting example of an emerging health issue allowing for everyone to become involved. The potential for and importance of amateur participation combined with the ease of technology currently in common use, make it possible for the scientists to receive up to the minute reporting from the non-scientists. Residents were able to email digital time-stamped photos of the algal blooms to MDPH, allowing them to respond when there was a problem, as opposed to only scheduled sampling which may occur right after heavy rains or cooling temperatures had temporarily wiped out the algae.

Not only can we help inform the scientists, the doctors and the regulators of this important issue, we can help prevent it by educating ourselves and our children about the various environmental factors playing a role in supporting the algae. We can't control the warm temperatures the algae loves so much be we can do our part by not feeding it. As we walk along the edge of the waterways with our dogs, are we bringing the plastic bag for picking up after Fido? It is definitely the socially acceptable thing to do now. Be aware that catch basins "feed" right into the water bodies. So, cleaning up after your dog at the edge of the road matters, too. Rain washes everything in the street to the basin and then to the pond. We can check our detergents and use ones without phosphate. Prevent fertilizers from entering the ponds and rivers by maintaining a buffer of vegetation along the water's edge and, preferably, not fertilizing lawns at all at the water's edge.

Speaking of fertilizers, even if all individuals around the ponds stopped using them completely, we would still have the big suppliers with the cranberry bogs. This is one of those topics that the Department of Environmental Protection has been meaning to get around to and did this summer. Now that they are involved, we will have more information to add to DPH's study and the responsible bog owners can be reassured that the less responsible will be motivated to keep the fertilizers out of our waters.

The life of the algae is complicated, with many factors influencing its cycle: temperature, degree of sunlight, water movement and nutrients. Add to that the seasonal effects of the cranberry business. Add to that, in the case of Halifax, water movement directly related to the city of Brockton's use of the Monponsett Pond's water. Ordinarily, the algae have been in the West Monponsett Pond. This year's abundant rainfall caused the water level to rise so high, that residents call the town hall, begging for the water to be lowered by diverting it to Silver Lake, via Brockton's mechanism for doing so. When that happens, water is pulled in the opposite of its natural direction and the green algae is pulled west to east right along with it. That is what happened this year, creating algal blooms in the East as well as the West Monponsett Pond.

I hope the City of Brockton will show recognition of and appreciation of Halifax's water and the Halifax Board of Health's hard work in protecting the Monponsett Ponds. Some of the ways we do so are with a Wastewater District, Animal Waste Abatement regulations and legal Covenants with passing septic systems close to the ponds. Brockton can, in return, help us by opening the natural flow of the ponds and by helping us to achieve storm water management and wastewater treatment in certain areas of high need, such as along the northern tips of the Monponsett Ponds.

The life of our water bodies is complicated and delicate, requiring cooperation from all the users to bring them back into balance in order to save them.

Cathleen Drinan is the health agent for the Town of Halifax. She hopes you will join the efforts to save the Monponsett Ponds by sharing your email and your observations. To be added to her list of "pond people", contact her at 781 293 6768 or cdrinan@town.halifax.ma.us