



Rodent Poisons Sicken and Kill Birds of Prey

Study finds 100% of tested red-tailed hawks at Tufts clinic exposed to rodenticides

By Angela Nelson

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Maureen Murray, director of Tufts Wildlife Clinic and clinical associate professor at Cummings School of Veterinary Medicine, has been studying rodenticide exposure in birds of prey for over a decade. Exposure to rodenticides occurs when people use these chemicals to kill unwanted pests. Mice and rats, or possibly other

animals, eat the poison, and then the birds eat the poisoned prey.

Murray has witnessed a steady increase in the number of birds of prey that come into Tufts Wildlife Clinic with rodenticides in their systems—some with fatal levels. But even Murray was taken aback by the results of her most recent study.

“One hundred percent of the red-tailed hawks in the present study tested positive for exposure to anticoagulant rodenticides,” said Murray. “In my 2017 paper, 97% of the hawks tested were



ANNA MILLER/TUFTS UNIVERSITY

“In my 2017 paper, 97% of the hawks tested were positive, which is very high. But still, 100 feels like a much more dramatic number,” said Maureen Murray, Tufts Wildlife Clinic director.

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positive, which is very high. But still, 100 feels like a much more dramatic number.”

The study, published in *Environmental Toxicology and Chemistry*, also found that 91 percent of the birds tested positive for two or more different types of anticoagulant rodenticide (AR), with the second-generation ARs (SGARs) brodifacoum, bromadiolone, and difethialone found most frequently. SGARs are more potent than their first-generation predecessors, to which some rats—particularly in Europe—developed an immunity.

ARs work by thinning the blood and cause the animal to slowly bleed to death. A single feeding of an SGAR potentially contains enough poison to kill a rodent. However, it takes a few days for the animal to die, and in the meantime, they may continue to feed on the poison. During that time, they may be eaten by birds of prey, such as hawks and owls. Even after the animal dies, its carcass contains SGAR residues that can be lethal for scavengers.

In addition to spontaneous and internal bleeding, for the impacted wildlife Murray sees in the clinic, secondary injuries such as lacerations or cuts can become life-threatening because the blood can't clot.

For the present study, Murray sampled 43 red-tailed hawks, which were admitted to the clinic but did not survive due to their injury or illness. She focused on this particular species because they are the most common bird of prey seen by the clinic and also because they're generalist predators, which offered a sense of how widespread the contamination is in the food chain.

“The ability of these rodenticides to permeate the food chain and ecosystems is pretty remarkable,” said Murray. “Other studies have shown residues in songbirds and insects. And that's what this study reflects. Red-tailed hawks eat a lot of small mammals, but they also eat birds, reptiles, or amphibians; they might scavenge. Ultimately, their prey base is very contaminated.”

To test for exposure, she took a sample of liver tissue, where the SGAR compounds are stored, from each deceased red-tailed hawk. She also took a blood sample, because she wanted to answer the question of whether blood could be

used to determine if a bird had been exposed to SGARs.

“The question is: Is there a way, in a live bird, to understand if that bird has been exposed to ARs or not? That can be important if there's a target population you want to sample, like birds migrating through a specific area, or a threatened or endangered species,” said Murray.

However, Murray found that blood tests were not a viable option to screen for SGAR exposure in red-tailed hawks, as blood was not sensitive enough to detect the compounds found in the poison—except in birds that ingested a lethal amount.

Reexamining Rodenticide Regulations

There's a reason SGARs exist: They're effective, and no one wants a mouse in their house. Still, there are some measures in place to reduce the use of SGARs.

In 2008, the US Environmental Protection Agency (EPA) issued mitigation measures that tightened the rules around the sale of SGARs. The EPA's decision was prompted by evidence of exposure among children, pets, and “non-target wildlife” (animals such as birds of prey that aren't meant to be harmed by the poison).

The regulations, which didn't go into effect until 2011 and after, prevented the sale of SGARs directly to consumers at home improvement or garden supply stores, where they were once packaged and readily available for a single home's use. The regulations intended that only pest control professionals—who, under the regulations, can still use SGARs—would buy and use the products where they were deemed necessary. However, online sales have likely influenced the effectiveness of these regulations.

Murray said one of the reasons she has continued to monitor birds of prey at Tufts Wildlife Clinic for rodenticide poisoning is to measure the effectiveness of the approach the EPA has taken

to regulating SGARs in preventing exposure of wildlife species.

“If we have solid data showing these types of rodenticides are dangerous to wildlife, that can help inform people who are making decisions, whether for their own homes, for a town, or more broad regulatory decisions,” she said.

She encouraged anyone looking for pest control solutions or hiring a pest management professional to consider approaches other than ARs. Find out where the mice or rats are coming in, plug up holes in the house or around windows, take away food and water sources, and clean out nesting sites—a process referred to as an integrated pest management approach, she said.

“There's no such thing as a safe poison, but even among the range of poisons, anticoagulant rodenticides are a category that has very significant risks to our wildlife species,” said Murray. “When the time comes for the EPA to review the regulations and see how they're working, this research can help to inform that decision.”

Angela Nelson is the deputy editorial director in the University Relations Communication & Marketing department at Tufts University.



A dead eagle retrieved by MassWildlife staff from a nest near the Charles River this spring.

MASSWILDLIFE

How is Belmont Controlling Rodents?

Is Belmont using poisons that kill hawks and eagles?

By Jeffrey North

Two bald eagles have died in Middlesex County this year from second-generation anticoagulant rodenticide (SGAR) poisoning in Arlington and Waltham. The causes of death in both cases, anticoagulant rodenticide, were confirmed by MassWildlife officials after postmortem testing at Tufts Wildlife Clinic. Three different SGARs were detected in their livers.

These are among the first cases of poisoning in American bald eagles in Massachusetts. Yet such secondary poisoning has been documented in hawks, owls, foxes, bobcats, coyotes, dogs, and cats. And thousands of children ingest or are otherwise harmfully exposed to these poisons every year.

According to the EPA, second-generation anticoagulant rodenticides are no longer registered for use in consumer products and are registered only for commercial pest control. Although SGARs should no longer be sold to homeowners through retail outlets, old stocks in stores' inventories may still be purchased from local hardware and garden stores and online retailers. Homeowners still use these products as well as older first-generation anticoagulants (FGARs), unwittingly poisoning non-targeted wildlife, pets, and children.

The rodenticide products currently available on the consumer market are ready-to-use bait stations that contain bromethalin, chlorophacinone, or diphacinone packaged in block or paste form. Pelleted baits are no longer permitted in consumer products.



Flags indicating rodent treatments at the corner of Grove Street and Grosvenor Road.

Fortunately, Belmont's Parks Division of the Department of Public Works (DPW) no longer uses poison to manage rodent pests. The DPW eliminated the use of bromadiolone earlier this year after investigating these safety and environmental concerns.

Raptors eat rats and other rodents. Fewer raptors mean more rats.

The 14 black plastic bait boxes placed around the Grove Street playing fields and seven boxes at the tennis courts near Joey's Park contain mechanical snap traps and a food-grade bait substance or a safe bio-repellent such as DeTour Gel. DeTour Gel contains capsaicin, the effective ingredient in hot chili peppers, which produces skin irritation in exposed rats and their nestmates. Legend has it that the capsaicin compound affects rats' behavior in ways that upset the domestic tranquility of their nests. The bait boxes are multipurpose, designed to contain a variety of mechanical and/or chemical rodent controls. They are maintained by a licensed applicator under the auspices of the DPW.

On October 22, highway department staff, working with the licensed professional pest control company, deployed dry ice into rodent burrows at the corner of Grove Street and Grosvenor Road. Dry ice, which is frozen carbon dioxide, disperses into nest tunnels to asphyxiate the pests underground. Note to homeowners: dry ice rodent treatments and all other regulated, EPA-registered substances should only be deployed by a licensed pest control applicator.

What Can Homeowners Do?

Raptors eat rats and other rodents. Fewer raptors mean more rats. To avoid poisoning the hawks, owls, and eagles, try integrated pest management (IPM). This systems approach for managing pests incorporates biological, chemical, and cultural control strategies based on accurate pest identification and monitoring. Pests are managed in an ecologically compatible manner, and if no effective non-pesticide control measures are available, then any pesticides used should result in the lowest possible risk to health and the environment.

IPM Methods to Try

- Remove rodents' potential food sources and shelter. Prevention is the best cure.
- Keep trash containers sealed and away from pests.
- Keep pet food inaccessible to pests.
- Be mindful of bird feeders; keep them 15 to 20 feet from any buildings and use lower- or no-mess seed blends. Ask your local bird seed seller for anti-rodent guidance.
- Clean barbecue grills after every use.
- Remove invasive English ivy; rats covet nests in this aggressive invasive, so replace this with native plants.
- Clean up wood, brush, and junk piles that may provide shelter to rodents.
- Remove tree limbs within three feet of your roof.
- Repair and seal any holes in the walls of your home, garage, or shed.
- Try alternatives to poison, such as snap traps.

Or engage a licensed professional who can offer less- or non-toxic tactics. Ask questions of your pest control company. Hire only those that employ integrated pest management (IPM). Avoid those that rely solely on the use of SGARs: brodifacoum, bromadiolone, difenacoum, or difethialone.

You can also support new legislation. Massachusetts bill H3991 would require pest control companies to provide better information to consumers about the risk to wildlife, pets, and children. Additionally, it would mandate IPM practices on public lands before considering a poison-first approach (see accompanying article).

For more information on IPM for rodents, look at UMass's page (www.ag.umass.edu/integrated-pest-management/about) or the IPM Institute (www.ipminstitute.org/what-is-integrated-pest-management).

Jeffrey North is managing editor of the Belmont Citizens Forum Newsletter.

Law Could Prevent Eagle Poisoning

By Laura Kiesel

I rushed to the cemetery when I heard the news, hoping it had been a false rumor. When I arrived, I aimed my camera up at the large nest that took up more than half the tree top and zoomed in. It was completely empty.

The bald eagle I had watched grow from a fuzzy helpless chick to a strong and agile juvenile was gone. Soon after MassWildlife confirmed the rumor: the eaglet died after consuming a class of rat poisons known as second generation anticoagulant rodenticides known as SGARs.

SGARs had been banned by the US Environmental Protection Agency (EPA) for over-the-counter sales because tens of thousands of young children ended up in the emergency room yearly from accidental ingestion, which the manufacturers found an acceptable risk.

After years of court battles, SGAR manufacturers came to a compromise with the EPA. SGARs would be removed from shelves of retail stores, but they could still be used in so-called “tamper-resistant” bait stations that licensed pest control operators could install for customers around their residences or businesses.

There are four kinds of SGARs: brodifacoum, bromadiolone, difethialone, and difenacoum. They all work the same way—by stopping blood from clotting. However, this deadly effect is not limited to only the animal that eats the poison.

Here’s the typical scenario: a mouse or rat eats the poison, but it doesn’t die right away. It may feed repeatedly from the bait, to the point where the poison is accumulated in very high amounts in its system. Over the course of several days, that rodent becomes very weak. It will stagger like it’s drunk or drugged. Rodents in this state

make easy prey, especially for young wildlife just learning to hunt on their own.

That is what happened to the recently fledged eaglet in Arlington; it had been eating poisoned rats that were easy catches. This was the second bald eagle in the Boston metro area to die in only a matter of a few months from secondary SGARs poisoning. The other one had died in Waltham, a cousin of this eagle. In 2018, another bald eagle on Cape Cod was found ill from SGARs poisoning and had to be euthanized.

Only a few decades earlier, bald eagles did not exist in Massachusetts. Like in most other parts of the United States, their populations had been nearly wiped out from the pesticide DDT.

DDT was eventually banned and careful planning to reintroduce eagles has led to the restoration of their species in the state and much of the country. Now some 80 pairs of bald eagles

nest in the Bay State.

But it seems like we are wasting those efforts by not learning from our history. We are repeating our mistakes, replacing one toxin with another.

A recent study found that 100% of the red-tailed hawks tested at Tufts Wildlife Clinic Massachusetts were positive for SGARs exposure, while 86% of birds of prey in the state tested positive

for SGARs in a prior study. The sad irony too is SGARs may actually be making rat populations grow.

Rats are prolific breeders. A single pair can give birth to thousands of young in a single year, with climate change lengthening their reproductive cycles. So by the time one generation of rats succumbs to the poison, the next has already been born. Plainly put: rats can outbreed most poisons. Some studies suggest with subsequent generations, rats can even learn to avoid poisons.

Meanwhile, many rat predators do not have high birth rates, and their populations cannot withstand the hit of poisonings. Bald eagles, and most birds of prey, only give birth to one to four offspring a year. If they succumb to poison, the likelihood of their populations rebounding is much lower than for rodents.

We’re essentially drawing rodents to us with bait that then kills off their natural predators.

We’re essentially drawing rodents to us with bait that then kills off their natural predators. And by doing that, we’re working against ourselves: one study revealed that raptors are 50% more effective at controlling rodents than anti-coagulant poisons.

What Can Be Done

On the state level, there is a bill that is seeking to address this issue, H.3991 “An Act Relative to Pesticides.” Introduced by Representative James Hawkins (D-Attleboro) in collaboration with environmental and animal welfare groups like MassAudubon and MSPCA, the bill seeks to reduce use of SGARs by promoting integrated pest management (IPM) and modernizing pesticide use tracking. In particular, this legislation would require exterminators to disclose the risks of SGARs to non-target species to consumers and require signed records confirming that disclosure. It would also emphasize non-poisonous alternatives.

Currently, H.3991 is expected to have its hearing sometime in the next several months at the Joint Committee on Environment, Natural Resources and Agriculture. As such, it’s critical that H.3991 get as much bicameral support as possible. You can check to see if your State Senator or House Rep has signed

on as a co-sponsor at MAlegislature.gov/Bills/192/HD4206.html. If they are not signed up as a co-sponsor, write them as a constituent and ask them to do this, and ask your other Massachusetts friends and family to do the same with their senators and representatives.

On the local level, municipalities like Belmont may want to consider warrant articles that ban the use of SGARs on town-owned and managed lands as well as warrant articles that formally implement an IPM plan that focuses on better trash management and alternatives to poisons.

For instance, the city of Somerville piloted the use of a nonlethal rat contraception bait called ContraPest at a few locations with high rodent activity. Those areas subsequently experienced a 57% and 67% reduction in rat sightings. Somerville also issued rat-resistant trash totes to every resident of the city and installed a number of rat-resistant Big Belly trash cans in public areas with a lot of foot traffic. As of 2018, Somerville

had experienced a 36% decrease in rat sightings as a result of these efforts.

Belmont residents can also communicate with businesses using bait that they prefer their dollars go to supporting places that do not rely on rodenticides—especially SGARs—but instead take sustainable and

humane approaches that do not harm wildlife or people’s pets.

So next time you see a bait station, please consider the world we’re creating for ourselves and our kids, and if our war with rats is worth decimating all other species that rely on rodents as a critical staple of their diets.

Laura Kiesel is a freelance writer and editor focusing on environmental and health topics. Her articles have been published in The Atlantic, Politico, The Guardian, Salon, Al-Jazeera, the Washington Post, Vice, Vox, Ozy, the New York Daily News, Science and many more.



Baby bald eagle at Everglades National Park.



Red tailed hawk with prey.

LORI OBERHOFER/ NATIONAL PARK SERVICE

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Stormwater Threatens Our Waterways

By Michelle Liebtreu and Daria Clark

The Mystic River is cleaner today than it has ever been. The Clean Water Act has been a major environmental success story. But the work is not yet done. As the most urbanized watershed in New England, the Mystic River watershed is especially subject to stormwater pollution, one of the leading sources of pollution in our water today.

Stormwater pollution, also known as stormwater runoff, occurs when rain falls over land—driveways, lawns, and streets—picking up fertilizer, dog waste, salt, leaves, and trash. That polluted water flows into the nearest storm drains and catch basins, discharging through the network of stormwater pipes directly into our rivers, lakes, and ponds — without being treated.

Many municipalities in our watershed and throughout the Boston area still have combined sewers, which carry both raw sewage and stormwater in a single pipe. During heavy rainstorms the large volume of stormwater can fill these antiquated systems to their capacity. When this happens, the mixture of excess stormwater and sewage is released into the nearest waterway, causing a combined sewer overflow (CSO).

Eliminating many of the CSOs on the Mystic, Charles, and Neponset Rivers, as well as CSOs that emptied directly into Boston Harbor, has helped turn the “dirtiest harbor in America” into “a great American jewel,” as the *Boston Globe* declared. Although much reduced, annual discharges from CSOs unfortunately still measure in the millions of gallons and happen in all our Boston area watersheds.

In the Mystic River watershed, the CSOs flow in from the Alewife Brook, the Mystic River, and the Chelsea River. The Environmental

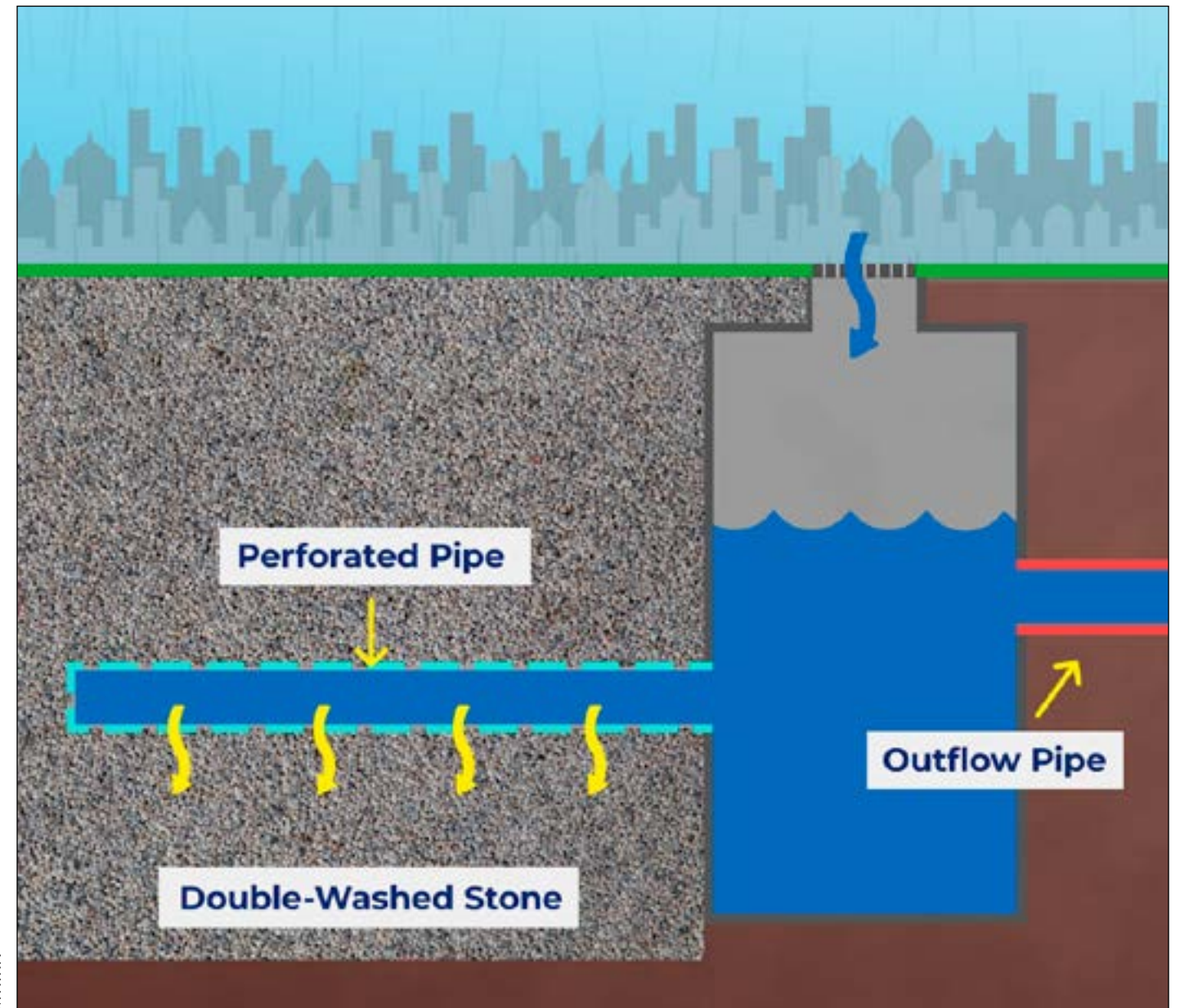


Oil flowing off our local roads during snowmelt, heading untreated to the closest water body.

MYSTIC RIVER WATERSHED ASSOCIATION

Protection Agency (EPA) and the Massachusetts Water Resources Authority (MWRA) are working together to improve these systems by separating stormwater and sewage pipes. They are adding features like holding tanks that will minimize and ultimately eliminate the discharge of combined sewer and stormwater. This work is especially important as climate change is causing more heavy rainfalls, which will cause continued and increased CSOs because our current infrastructure can't handle this flow.

Another great solution is green infrastructure which uses plant or soil systems to mimic natural systems to filter and store water. Examples of green infrastructure include rain gardens, constructed wetlands, or infiltration trenches. The Mystic River Watershed Association (MyRWA) is partnering with municipalities in the watershed to implement these types of solutions. More than 50 infiltration trenches were built in three communities in 2020 alone. An infiltration trench is a relatively new street stormwater innovation that collects rain water from adjacent surfaces and channels the water from the side of the road into



MYRWA

An example of green infrastructure: an infiltration trench.

permeable soils so that it can quickly seep into the ground.

The standard design for infiltration trenches emerged from workshops led by the US EPA in 2020 via a collaboration between the town of Arlington and the University of New Hampshire Stormwater Center. Municipalities can build these easy-to-deploy retrofits to existing catch basins in a cost-effective manner, and even work them into routine road work.

MyRWA is also working with Lexington, Reading, and Woburn to use green infrastructure to enhance open space, paths and trails, and expand wildlife habitat. These improvements will provide cleaner water by filtering pollutants out of rain and snow melt before they reach the

nearest river or stream. They also mimic natural wetlands to provide flood storage during larger rain. Collectively these green infrastructure improvements can markedly improve the water quality and capacity of the watershed.

Because much of the pollutants entering our local water bodies comes from stormwater going directly into your local drains, you can make a difference. From raking up leaves to picking up pet waste to rethinking your lawn maintenance, you can improve local water quality.

Want to do your part? Check out tips to protect clean water, wildlife, and pollinators at www.mysticriver.org/stormwater.

What is Polluting the Mystic River?

Bacteria

The bacteria that MyRWA is most concerned about are pathogens—organisms that cause disease and come from feces. The main source is raw sewage from cracks in our aged sewer lines, pet waste, and CSOs. During periods of heavy rainfall or snowmelt, the amount of rain-water in a combined sewer system can overwhelm the system. In these cases, the combined sewer systems are designed to overflow instead of backing up into houses and streets, and to discharge directly to nearby streams, rivers, or other water bodies. To protect your health, it is best to avoid water bodies for 24 to 48 hours after heavy rain. Want to see if it is safe to boat in the Mystic? See MyRWA's boating advisory at www.mysticriver.org/boatingadvisory. You can also sign up for CSO alerts at www.mwra.com/updates/everbridge/join.html.

Phosphorus

Phosphorus is a nutrient. Too much phosphorus can cause algae and aquatic plants to grow out of control, causing toxic cyanobacteria blooms. When blooms are present, MyRWA posts on websites and social media. Over the past several years, MyRWA led a major phosphorus study to measure the amount of phosphorus entering the system and the effects it is having on the watershed, in collaboration with US EPA, the Massachusetts Department of Environmental Protection, the United States Geological Survey, and other stakeholders. The "[Mystic River Watershed Alternative TMDL Development for Phosphorus Management - Final Report](#)" calls for reducing phosphorus inputs into the Mystic River watershed by 60%.

Trash

Did you know that most of the [plastic in the ocean comes from rivers](#)? And that most of the plastic in rivers comes off the land—much of it through the stormwater system? Trash is also the cause of one of the biggest environmental challenges we face worldwide: the huge worldwide growth in the generation of plastic waste and its negative effects on ecosystems and human health.



MyRWA volunteers remove water chestnut, an invasive plant that can take over the river and cause excess nutrients in the water.

MYSTIC RIVER WATERSHED ASSOCIATION

Grading Water Quality

The latest [EPA 2020 Water Quality Report Card](#) for the Mystic River watershed shows that water quality remains an "A" for the Mystic Lakes, and a "B+" for the main stem of the river.

"This is great news, as it means our urban river continues to be a valuable asset for all our community members to use and enjoy," said Patrick Herron, MyRWA's executive director. "The reason we are seeing this grade is thanks to decades of serious investments to clean up Boston Harbor and its rivers, as well as the growing commitment by our municipalities to make local infrastructure improvements."

But some streams that flow to the Mystic remain seriously impaired. These water bodies—including the Alewife Brook, Winn Brook, and the Little River—have bacteria counts that violate water quality standards much of the time. The cause of this lower grade is bacteria introduced into the watershed by raw sewage which reaches waterways via leaking pipes, illicit connections, and CSOs.

Addressing these issues requires targeted infrastructure improvements. One such tributary, the Island End River, did get that investment, and it paid off. In just three years, the Island End River has gone from earning a "D" for water quality to this year's grade of an "A+." After extensive testing and detective work, the city of Chelsea discovered a sewage pipe from a large building that had been installed incorrectly, dumping sewage directly into the creek. This pipe was fixed, and the grade for the tributary has steadily improved.

"The two big takeaways from the report card are 1) go out and enjoy your healthy urban river, and 2) we need to make continued infrastructure improvements to those tributaries that are not meeting the grade," said Andy Hrycyna, MyRWA watershed scientist. "We don't have to have failing grades if we invest in policies and infrastructure. The success at Island End shows this."

Daria Clark is the engagement manager at the Mystic River Watershed Association. Michelle Liebetreu is the Mystic River Watershed Association's deputy director of external relations.

Six Things You Can Do to Protect Clean Water

Tips from the [Mystic River Watershed Association](#)

- When purchasing plants, opt for native plants or disease or pest-resistant varieties. When you bring them home, be sure to plant them in areas that give them the sun and water requirements they prefer. Happier plants are more pest and disease resistant!
- Don't overwater! Excess irrigation can wash pollutants down a storm drain. Consider mulch on slopes or even rock barriers or trenches to prevent irrigation flowing into the nearest storm drain, carrying pollutants with it.
- Use mulch! Mulch keeps weeds down, conserves water, and keeps irrigation from flowing out of your yard and into the nearest storm drain. An economical and efficient way to care for your plants!
- Consider replacing your lawn! Swap grass for groundcovers, perennials, and shrubs. Once established, gardens require less fertilizer and pesticides than lawn.
- Plant "pair plants" together. Certain species naturally thrive when planted alongside other certain species. This can help the plants be more pest and disease resistant because they work together to keep each other healthy. For example, plant nasturtiums near your cucumbers as they repel cucumber beetles while also serving as a habitat for predatory insects like spiders and ground beetles. Do some research on pair plants and grow those friends together in your garden.
- Reconsider what is "bad" about weeds. Is crabgrass in your lawn really worth a pesticide application?

CRWA Works to Keep the Charles River Clean

By Julia Hopkins and Lisa Kumpf

Have you ever thought about what happens to that rain when extreme storms hit? If you call Belmont home, it ends up in the Charles or the Mystic River.

The town of Belmont is sandwiched between the Charles and Mystic Rivers, two beautiful, fragile natural resources that provide habitat for wildlife and enjoyment for humans. The town is split between the Charles River watershed and the Mystic River watershed.

A watershed is a land area that channels all rain and snowmelt into ponds, brooks, and streams that drain into a single river, and eventually into a harbor, bay, or ocean. Defined by natural geography and water features, watersheds encompass much more than rivers. Even though Belmont's boundaries are at least a mile

from both the Charles and Mystic Rivers, the town is inextricably linked to them.

To the north, Alewife Brook springs from Little Pond, which is fed by streams running down Belmont Hill, then flows through Alewife Brook Reservation and the Alewife Greenway in Arlington. It enters the Mystic at the intersection of Arlington, Medford, and Somerville. To the south, Beaver Brook flows from Lexington to form the boundary of Belmont and Waltham, flowing through the preserved open space of Beaver Brook Reservation. It continues south and enters a culvert under Main Street in Waltham that drains into the Charles River.

What does it mean to live in a watershed? A raindrop falling in your backyard finds its way through these tributaries to our rivers. We all live downstream of somewhere, and our fates are

collectively intertwined with the health of the waters around us.

When that raindrop falls, it might hit your roof and flow along your gutters to the drainpipe before splashing onto the ground or driveway pavement. Then that raindrop mixes with the unseen chemicals that may be on your driveway or in your yard. Bacteria from pet waste, nitrogen from lawn fertilizer, oil, antifreeze, and phosphorus from your car—these chemicals all combine with the rainwater to create a toxic concoction that enters storm drains and ends up in the Charles.

Our interconnected road systems create problems for our watersheds. With all this rainwater caught with nowhere else to go, picking up concentrated pollutants from our roadways, and surging into our aging stormwater infrastructure during heavy rains, intense amounts of polluted runoff flow directly into the Charles and Mystic during heavy rain, impacting water quality and harming our ecosystems.

Just under 40% of Belmont's land is covered with impervious surfaces. Impervious cover is all the structures that do not absorb water in our human-altered landscape, including roads, parking lots, highways, and roofs. Impervious surfaces reduce the infiltration of water into the ground, contributing to more stormwater runoff, greater sediment yields, and increased pollutant loads, all of which can degrade water quality. Our impervious landscapes are proving to be less resilient in extreme weather.

A few hundred years before colonization and industrialization, the journey of that drop of water would have been very different. Instead of a fast-track ticket to the Charles or the Mystic during heavy rainfall events, that raindrop would trickle through the forest floor of our woodlands, and be filtered by soils and cleaned



CRWA sampling for cyanobacteria along the Charles River.

by trees, slowly purified before making its way deep in the groundwater to the river.

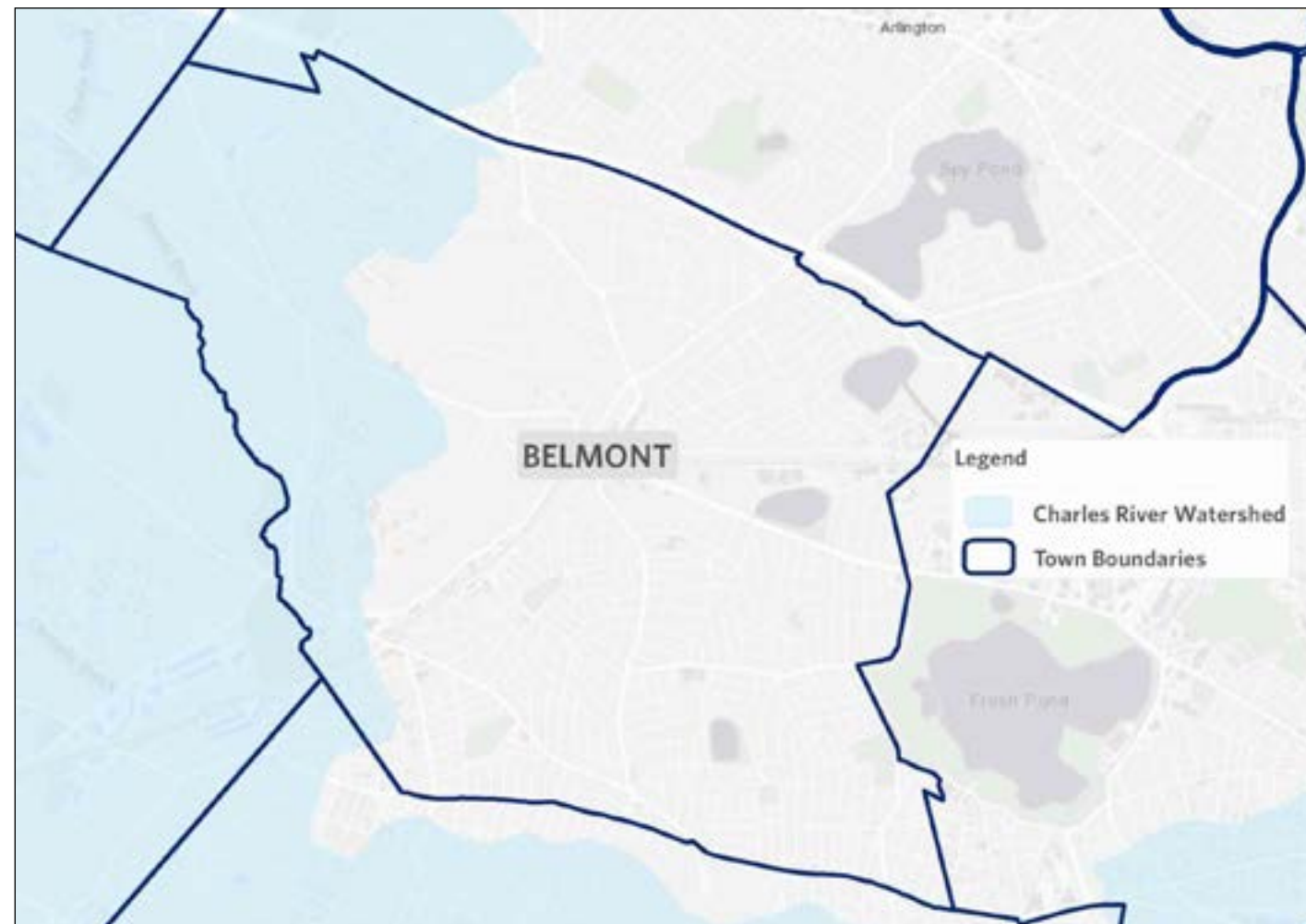
Today, pollutant-laden water gushes untreated through concrete pipes into the Charles and the Mystic, creating big problems.

Carrying excess nutrients like nitrogen and phosphorus, harmful *E. coli* bacteria, and cancer-causing PFAS compounds, untreated stormwater harms our fragile river ecosystems and their surrounding communities.

Stormwater pollution is the leading cause of a cascade of threats to the Charles and Mystic rivers. Excess nutrients spur rapid growth of aquatic invasive species like water chestnuts, Eurasian milfoil, curly-leaf pondweed, brittle naiad, and others. These fast-growing non-native species outcompete native plants, reducing biodiversity, harming water quality, and causing habitat loss.

Excess phosphorus and nitrogen are also responsible for more frequent cyanobacteria blooms. Cyanobacteria, or blue-green algae, can explode into a harmful algal bloom when stormwater pollution and high temperatures combine to create perfect conditions for these naturally occurring bacteria to rapidly reproduce. These blooms are dangerous for humans and pets alike and can cause skin rashes, nausea and vomiting, and serious nerve damage from repeated exposure.

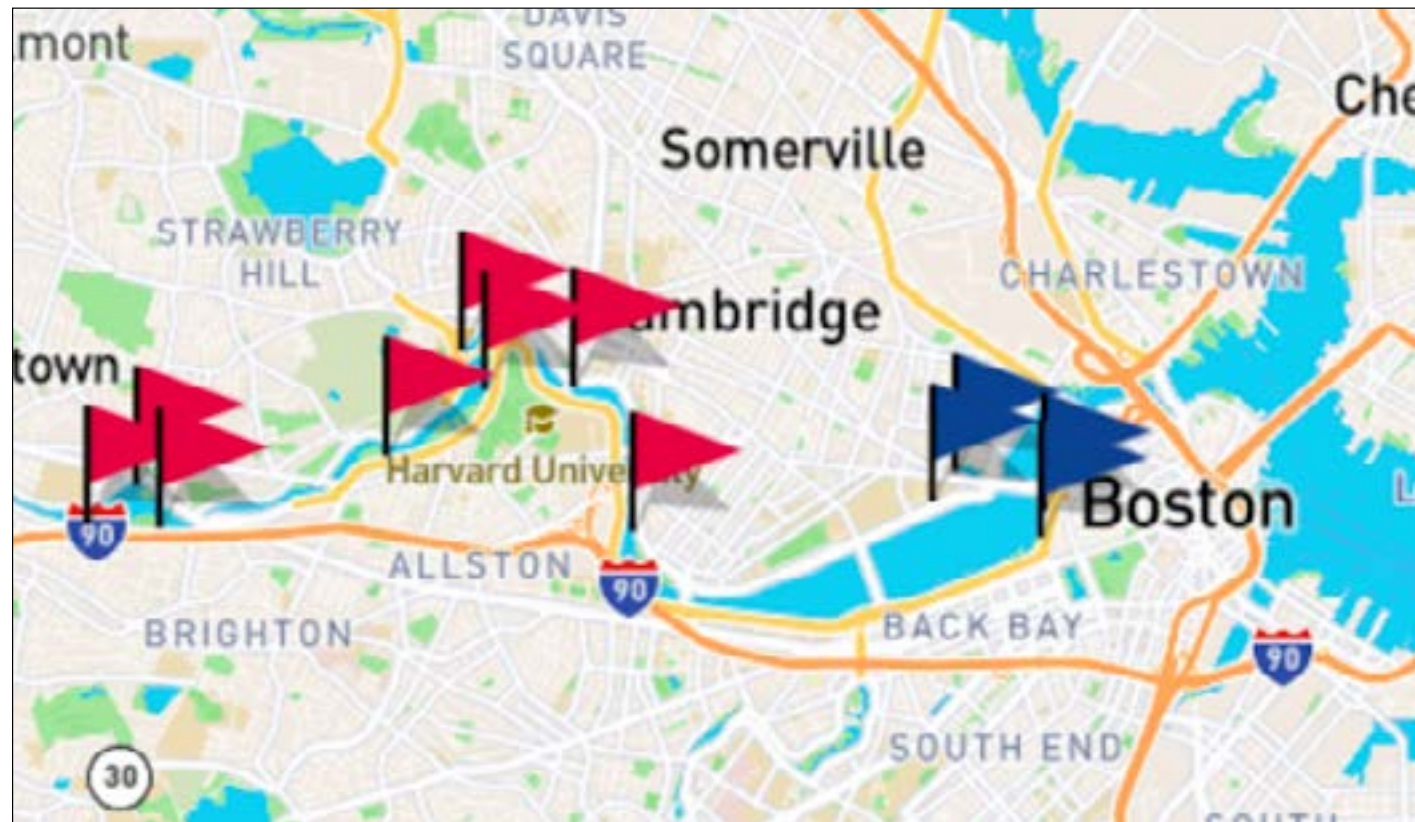
On top of all of this, stormwater can also carry *E. coli* bacteria when aging combined-sewer



Detail of a map of the Charles River watershed (blue) and Mystic River watershed (light gray).

CHARLES RIVER WATERSHED ASSOCIATION

CHARLES RIVER WATERSHED ASSOCIATION



Screenshot of the Charles River Watershed Association's online Flagging Program.

systems overflow into rivers during heavy rain. *E. coli* bacteria can cause infection, gastrointestinal distress, and other serious health problems, making the rivers unsafe for recreation following rainfall from both extreme weather events and typical summer thunderstorms.

That's where the Charles River Watershed Association (CRWA) comes in. The CRWA is leading the effort to closely monitor water quality and provide the public with live updates on the safety of the river for recreation with the [Flagging Program](#). (The Mystic River Watershed Association issues a [daily boating advisory](#) during warmer months — *Ed.*)

Using a color-coded system of flags that indicate how safe the Charles is for swimming and boating at any given time, the Flagging Program is an easy way to ensure you are safe in the Charles River.

Water quality is determined by a [combination of factors](#): a forecast of bacteria levels using a mathematical model, the presence of combined-sewer overflows and cyanobacteria blooms, and water samples taken weekly to verify predictions.

Every Thursday morning from late spring to early fall, alarms go off at dawn and our dedicated team of water quality samplers gear

up and head out on the Charles. Departing from the docks of Community Rowing Inc., at sunrise, the team takes water quality samples at four locations in the Lower Basin. From the North Beacon Street Bridge to the Longfellow Bridge, they plunge small containers into the Charles and collect samples that are then shuttled to the lab for testing.

These four measurements provide an accurate picture of water quality for recreation. We can then interpret the data to advise how safe the river is for rowing, paddling, windsurfing, and sailing each day during boating season. These findings are communicated by red and blue flags that fly at our 13 partner boathouses up and down the Charles River, and we provide [live notifications online](#) through our [Water Quality Alerts](#) newsletter and on our [Twitter bot](#).

The program helps us [watch what is happening](#) in our beloved river and make sure the public is aware of the substantial risks they can face when the Charles is contaminated with stormwater pollution. The hope is that knowing these risks will motivate recreational users and river enthusiasts to take action to help the Charles.

Our watershed is under threat, and if we want to preserve what we love, we have to rethink our relationship with the river and care for its health instead of overwhelming it with pollution. The CRWA uses science, advocacy, and the law to protect, restore, and advocate for our beloved river in the face of climate change. Day in and day out, we make it our mission to turn our research into action and work to restore the Charles River watershed to what it once was: a thriving, healthy ecosystem for all to enjoy.

This encompasses everything from advocating for [green stormwater infrastructure](#) and rain gardens to [expanding wetland protections](#) and advocating for more preserved open space. The best thing we can do for our watershed is to do our best to support the natural systems that are already in place, and restore our environment when we can, to right the harm we have caused.

A significant goal of our work is empowering residents of the watershed to be river advocates. This means providing the [training and opportunity](#) for individuals to act. We all have a stake in the matter of our collective survival in the face of climate change, and on-the-ground actions can go a long way to help the river.

Every action, no matter how big or small, has a chance to help the river and its ecosystem. From picking up litter along your walk to learning [how to identify and pull invasive species](#), to [planting rain gardens](#) to manage the stormwater runoff on your own property, you have the power to help us change our relationship with our watershed and protect the river we all love and enjoy.

Julia Hopkins is communications and outreach manager and Lisa Kumpf is river science program manager with the Charles River Watershed Association.



A Charles River Watershed Association Flagging Program volunteer out testing.

Think Twice About Single-Use Plastics

By Lindsay Levine and Dean Hickman

Envision the life-cycle of a single-use plastic item. Oil or natural gas is extracted from the ground, transported, chemically transformed into plastic which is then manufactured, transported to the point of sale, briefly used, and then tossed into the garbage. But it does not end there. Because of their durability, plastics last for hundreds of years and do not degrade meaningfully over your entire lifetime, except perhaps break into smaller pieces.

Now imagine that same process repeated for many of the items we use daily. Have you ever counted the number of single-use plastic items you use each day? Water bottles, paper coffee cups lined with plastic and their lids, diapers, hand wipes, masks, take-out food containers, chip bags, candy wrappers, the bag your newspaper comes in, produce and dry cleaning bags, and milk cartons (yes, they are lined with plastic), are all single-use plastics. Unfortunately, the list goes on and on. Multiply that by nearly eight billion people worldwide using single-use plastics regularly and you can easily see the plastics crisis we are facing.

Can't I just recycle all of the plastic I use?

One of the most important things you need to know is that there are easy solutions to reducing your plastics consumption. But before we get to the good part, the recycling misconception needs to be clarified. If you think recycling is a "get out of jail free card", think again. Less than 10% of the plastic produced is actually recycled. Sixteen percent is incinerated, and the balance ends up in a landfill or discarded on streets and waterways only to end up in the ocean.

This pollution is an environmental concern, and it kills wildlife via ingesting plastics and entanglement with large plastic debris, including plastic bags, six-pack rings, and fishing lines. In addition, plastics do not easily biodegrade. With the help of the sun and mechanical processes, plastics break down into tiny pieces called microplastics (<5 mm) and nanoplastics (<1 μm). The smaller particles can be inadvertently ingested by animals and make them sick.



WOODS HOLE OCEANOGRAPHIC INSTITUTION

Microplastic particles on human fingertip.

While wildlife concerns of macro and microplastic pollution have been commonplace for decades, human health concerns are growing. Society continues to produce, use, and discard more than 130 million tons of single-use plastic annually. For context, the total amount of single-use plastic produced globally over the last five years is greater than the weight of every man, woman, and child on the planet (all 7.9 billion of us), yet there is no federal regulation limiting the production and use of single-use plastic.

Microplastics are found everywhere on earth, including the summit of Mount Everest, Antarctica, and here in Belmont. Take a stroll along the edge of Clay Pit Pond and look down for a local example of plastics—including microplastics—right here in Belmont. They are even in our food and water. Recently, microplastics have even been found to cross the placenta to expose the unborn. This is insanity on a global scale.

All is not lost; the solution to this dilemma is YOU! "Think twice before you use it once" is a great strategy when it comes to our use of single-use plastics. Breaking our apparent addiction may not seem so easy, but the good news is that there are easy ways you can cost-effectively reduce your plastic use.



NOAA.GOV

How to Use Less Plastic

- Start by making just one change today. Maybe it's switching to bar soap instead of liquid soap, using a reusable produce bag when you go to the farmer's market, or taking a reusable mug to the coffee shop or reusable bag to the grocery store, or starting to carry a spoon for when you get ice cream. Every little bit counts.
- Beverage-related plastics, including straws, drink stirrers, beverage cups, coffee lids, and plastic bottles (water, soda, energy drinks) account for a lot of the plastic waste found on the streets of Belmont. Bring your reusable coffee mug to the coffee shop (or make your own at home), and carry a reusable water bottle with you. Not only will this significantly reduce your contribution to the plastics problem, but it might also save you money.
- Say no to the straw, the plastic stirrer, and plastic cutlery the next time you are out and about. Even better, keep a reusable set in your car or bag.
- There are many excellent plastic-free options for the bathroom and household cleaning including dental floss, shampoo, soap, laundry detergent, and dish soap.
- Take your reusable shopping bags or backpack when you go shopping for just about anything.
- Create a market for recycled plastic by choosing products with recycled content

- when you do buy plastic products such as trash bags, toothbrushes, clothes, carpet tiles, or lumber.
- If something looks like it is excessively wrapped in plastic, look for alternatives, or save your money and don't buy it! For example, purchase loose spinach, lettuce, and kale and not the brands that are packed in the big plastic box.
- Support businesses that offer more sustainable or non-plastic options and talk to our local businesses about alternatives. Let your voice be heard and demand better for your health, our neighbor's health, and the planet's!
- Write or call your elected representatives in government and show your support for legislation that will guide us out of this mess. ([Warren.senate.gov/contact/share-your-opinion](https://www.warren.senate.gov/contact/share-your-opinion); www.markey.senate.gov/contact/share-your-opinion)

Doing something is better than doing nothing. Cheers to you on your plastic-free journey!

Lindsay Levine and Dean Hickman are cofounders of Clean Green Belmont, a recently formed group of citizens taking action against litter on Belmont's streets and in Belmont's waterways. They can be reached at cleangreenbelmont@gmail.com.

Urban Trees Improve Everyone's Lives

By David Meshoulam

When I first tell people that I work in the field of “urban forestry” they look at me funny. “Urban areas have forests?” they ask. “I thought forests were out in the country.”

But urban forestry is a real thing. Over the past several years, its importance has become increasingly recog-

nized as a critical component of a city's infrastructure, and rightfully so! Trees create more livable and healthy communities by cleaning and cooling our air, mitigating against flooding, and improving the mental and physical health of residents.

In an era of climate change, with hotter summers leading to more health risks, especially for vulnerable communities, trees are a critical tool for improving peoples' lives. Many of these benefits are real and measurable, providing cities and towns nationwide with billions of dollars of ecosystem and health benefits annually through cooler air, stormwater capture, and air pollution removal. Urban trees have also been shown to reduce blood pressure, improve mental states, and reduce levels of violence. The US Forest Services has created a series of online tools, called i-Tree (www.itreetools.org/), to quantify these benefits.



Copper beech by the Beech Street Center, 2018.

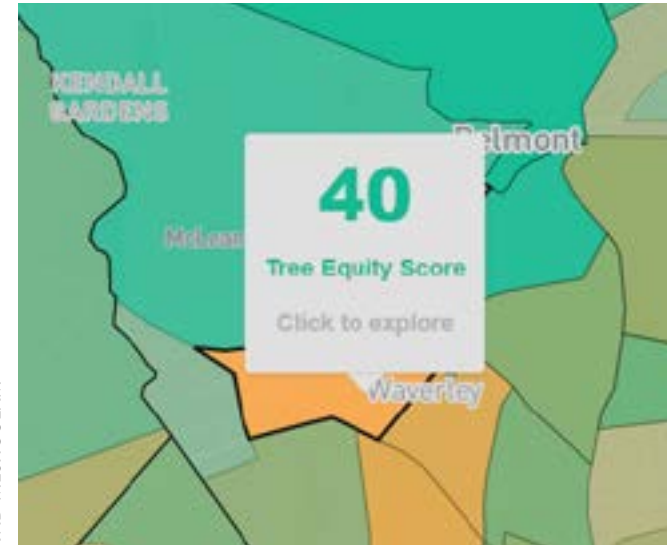
Consider a medium-sized red oak tree in front of a home. Using the i-Tree tool (mytree.itreetools.org/), a red oak with a diameter of 25 inches provides nearly \$80 per year in ecosystem benefits. These benefits come mainly through energy use reduction by keeping the air cool in the summer and reducing cold wind infiltration

in the winter, leading to reduced carbon emissions. The tree also absorbs carbon dioxide and other air pollutants and reduces storm-water runoff.

Trickier to measure, but equally important, are other co-benefits, like health care benefits, reduced anxiety, and increased property value. Multiply these benefits by the thousands of trees in a town, and the savings become significant. You can use i-Tree to figure out how much your local tree is worth too.

I-Tree isn't the only tool to help guide local urban forestry efforts. My two favorites come from American Forests. The first

is the Vibrant City Lab (www.vibrantcitieslab.com). The website provides a roadmap filled with articles and resources on how to think about, plan, and develop a model to help grow and sustain your community's forest. The second is American Forests' Tree Equity Score tool (treeequityscore.org). This map provides census-level data on which areas in a town would most benefit from increased tree canopy. Each census



DAVID MESHOULAM

Tree equity score for Waverley Square.

block receives a “tree equity score” that factors in demographics and tree canopy coverage.

Locally, several funding streams and resources support tree preservation and growth in Massachusetts. For example, the state's Department of Conservation and Recreation has a division of Urban and Community Forestry (with one of its offices in Belmont near Beaver Brook!) and Massachusetts has one of the country's oldest laws pertaining to public shade trees, with each municipality requiring a tree warden to plant, care for, and oversee the public trees in that community. Some towns, such as Belmont, even have a Shade Tree Committee.

Despite these supports, trees often do not receive the care and attention from residents that they deserve. That's why many towns and cities have nonprofit organizations whose mission is to educate residents, plant trees, and advocate for increased resources for urban forestry. Some of these organizations are volunteer-led with small budgets while others are large staff-run organizations that receive significant grants and donations.

For the past half-decade, I have been involved in two such nonprofits. I sit on the board of Trees for Watertown, formed in 1985, and I am executive director of Speak for the Trees, Boston, which I cofounded in 2018. These organizations do important work in bringing people together to celebrate and care for trees, but their models are very different.

Trees for Watertown holds monthly board meetings and relies on the hard work of a

committed group of volunteers to run its programs. Its activities include tabling at various events in the town, attending town council meetings, and assisting the town's tree warden in educating residents about trees and tree care. It recently ran a summer program called Teens for Trees.

Trees for Watertown also plays a key role in ensuring that the town commits resources to its forestry operations and advocates for increased funding and is currently engaged in forming a new ordinance for the town. Because the organization is volunteer-run, it relies on small donations from residents.

Speak for the Trees, on the other hand, is a staff-run organization with several programs including tree giveaways, tree plantings, community and student education, educational webinars, and a summer program called Teen Urban Tree Corps. It works closely with researchers and students in Boston-area universities to run projects that analyze the relationship between trees, people, and the environment, and also with local neighborhood groups and organizations. Due to its large scope and substantial budget, Speak for the Trees actively raises funds from foundations, corporations, and individuals.

Considering the importance of urban forestry, Belmont residents might want to consider exploring how to support their urban forest. There are four open spots on the Shade Tree Committee, and an opportunity to jump into something that is already up and running. Or perhaps there's interest in forming a working group or even a nonprofit organization? If so, residents will find many similar organizations across the area, not just in Watertown and Boston, but also in Arlington, Somerville, and Medford, among others, who are doing work in this arena and are eager to share their stories of challenges and successes.

David Meshoulam, PhD, is cofounder and executive director of Speak For the Trees, a nonprofit in Boston that seeks to increase the size, health, and equity of Boston's urban forest, focusing on under-canopied neighborhoods by protecting existing trees and empowering residents to plant new trees in their communities.

Clean Energy Policy Needs to be Equitable

By Aditya Jain

As a high school intern with State Representative David Rogers' office in the summer of 2020, I learned about the legislative process through Massachusetts Bill S9, the [Climate Roadmap bill](#), which was signed into law in March 2021. During the summer of 2021, I researched equity in Massachusetts clean energy policies, interviewing experts in Massachusetts policies on clean energy access, technology, and workforce trends.

What is Environmental Justice?

The United States Environmental Protection Agency (EPA) [defines environmental justice](#) as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

Throughout the 20th century, discriminatory policies nationwide located toxic industrial zones and waste sites near minority communities. A 2005 study found that hazardous sites and facilities [are still disproportionately concentrated in communities of color](#) and low-income communities in Massachusetts.

In the past year, environmental justice policy has moved forward. At the federal level, the Biden-Harris administration has created a new [deputy director for energy justice](#) position within the Department of Energy and has pledged to deliver 40% of benefits of climate investments to disadvantaged communities. At the state level, the Baker-Polito administration has announced a \$1.6 million investment in job entry in the offshore wind industry and has required developers to [include a diversity, equity, and inclusion plan in their bids](#).

The Climate Roadmap bill brings environmental justice principles into state law for the first time. However, many economic and social issues must be addressed for more comprehensive environmental justice in the energy sector.



Aditya Jain speaking at Belmont High School TEDx, August 2021.

Barriers to Participation

Current clean energy efforts in Massachusetts are not reaching across demographic lines. Although Massachusetts is ranked first in the nation for electrical efficiency by [the American Council for an Energy-Efficient Economy](#), these savings are not evenly distributed. A study conducted by the [Applied Economics Clinic](#) in Arlington found that lower-income communities in Massachusetts receive lower efficiency savings compared to their wealthier counterparts.

There is a "tenant-landlord disconnect" preventing owners from taking advantage of state incentive programs like MassSave, according to Beverly Craig, senior program manager and member of the Environmental Justice Task Force at the Massachusetts Clean Energy Center. While tenants benefit from energy efficiency through lower electricity bills,

landlords and property owners are the ones spending money on projects and navigating the installation process. As a result, landlords and property owners have little incentive to provide clean energy to low-income tenants.

In addition, people whose first language is not English "find it difficult to navigate a complicated program that's mostly entirely offered in English," notes Amy Boyd, director of policy at the Acadia Center, a New England climate and energy nonprofit. Boyd recommends "targeting specific areas that we know have been underserved and that we know are overburdened by the fossil fuel and extractive economy today."

However, local environmental justice groups could use census tract data to identify buildings for state programs. Craig notes that using data on tenants' finances can allow communities to take advantage of MassSave benefits including free clean energy and energy efficiency installations. Outreach programs could also offer information in residents' preferred language.

Low-Income Housing

Massachusetts' residential buildings are among the oldest in the country. Many homes harbor safety and health hazards such as knob-and-tube wiring, vermiculite, radon, and asbestos.



Isaac Baker, co-CEO of Resonant Energy

Low-income communities also tend to have the "oldest, most poorly maintained infrastructure, in our urban centers," according to Isaac Baker, cofounder and co-CEO of Resonant Energy.

Landlords and property owners have little incentive to provide clean energy to low-income tenants.

The cost of renovations is a barrier for low-income households seeking clean energy. To obtain a permit for a solar clean energy installation, a home needs to first meet health and safety code standards. Homeowners may need to spend tens of thousands of dollars on upgrades and repairs on their property before installing improvements like solar panels or heat pumps. Boyd explained that the cost of remediation is not covered through traditional clean energy incentive programs like MassSave or MassLean "because [remediation is] not delivering any additional savings."

Boyd says it is imperative to address these expenses, also called pre-weatherization barriers, with direct funding. Without this work, communities are isolated from clean and efficient energy and "condemned ... to have to be among the last consumers stuck ... paying huge percentages of the sunk capital costs" through higher energy bills.

State energy programs should automatically provide grants for pre-weatherization through the normal screening process for clean energy and energy efficiency projects, agrees Kim Vermeer, president and founder of Urban Habitat Initiatives. Vermeer adds that providing this "piggybacked funding" for clean energy while residents are "planning for other repairs, upgrades and retrofits is the best and most efficient way to use everybody's resources, whether it's time, money, personnel, construction cost, hassle for tenants ... it's better if it can all be done at once, right?"

Poor infrastructure can also be improved with modifications to residential building codes. Boyd suggests that having "the concept of efficiency built into the health code, or other codes that define whether something can be rented out and offered on the market" can help deal "with the



Amy Boyd, Acadia Center policy director

split-incentive issue of renters not being able to convince their landlords to upgrade and weatherize.”

By 2050, “there will be 2.5 million buildings [in Massachusetts],” 80% of which already exist, according to Craig, and “anything new needs to be ultra-low energy, because that’s where it’s easy and the costs are low.” In Massachusetts, the Department of Housing and Community Development (DHCD) awards federal low-income housing tax credits to developers through a competitive application process called the Qualified Action Plan (QAP). Including requirements and incentives for rigorous energy efficiency and clean energy standards to access this funding can ensure that “the resident benefits from a higher-quality, healthier indoor environment in their home,” said Vermeer.

Future Economic Equity

The clean energy sector is growing fast. Massachusetts clean energy industry jobs have grown by 86% since 2010 according to a 2019 report by the [Massachusetts Clean Energy Center report](#).

Today, clean energy jobs make up 3.1% of all jobs in Massachusetts. However, according to [a report by the Solar Energy Industries Association](#), women represent only 26.3% of the solar workforce, and Asian, Hispanic, Latino, and African-American workers make up just 33% of the solar workforce. Senior executive-level positions are entirely held by white men at the average solar firm. As Isaac Baker points out, these disparities are not at all “representative of the populations where solar is being installed.”

One solution is to create inclusive workforces through training. Recent initiatives in the [Massachusetts Next-Generation Climate Law](#) are an important first step, but designing workforce training programs in low-income and minority communities has specific requirements. For example, Craig states that “a purely college-based [workforce training] program is not always that helpful” in low-income communities. Instead, initiatives should offer more flexible opportunities through on-the-job training, technical trades programs, and vocational high schools. Another option is “bridge to clean energy jobs” programs which support applicants changing careers by offering services such as childcare, training in math skills, and help obtaining drivers’ licenses and other documentation.

With offshore wind growing in Massachusetts, it is also important to consider how large-scale projects are subcontracted. In 2014–2019, less than 1% of all municipal contracts went to minority-owned businesses in Boston, a city that is over 50% non-white, according to [a WGBH report](#). Recent efforts by the Baker-Polito administration to [require developers to implement workforce diversity plans](#) should be continued for any future large-scale projects. Isaac Baker states that policies should ensure that “billions of dollars worth of work that’s going to happen over the next decade” is subcontracted “to communities or color, low-income communities, ... minority- and women-owned businesses, and not just ... white males with whom [the] decision makers at those developers might have the easiest time finding, accessing, or interfacing with.”

Aditya Jain is a student at Belmont High School.

Belmont’s Seniors Have Transport Options

By Nava Niv-Vogel

Belmont’s adults over the age of 60 and people of any age with disabilities can get around without driving thanks to transportation services provided by the Council on Aging (COA). Most rides are provided by well-trained COA-funded drivers, and the three-vehicle fleet has many safety and disability-friendly features. In the era of COVID-19, COA drivers have also been practicing special safety protocols. The vehicles are routinely cleaned for airborne and surface germs.

The rides offered are curb-to-curb. The passenger needs to be able to walk or otherwise get themselves to the van. Drivers are not permitted to provide hands-on balance assistance or to wheel passengers in wheelchairs. The COA asks that passengers needing assistance provide their own escort.

Rides are available Monday through Friday from 8:30 AM to 3:30 PM, although there are several exceptions. The Supper Club program, rides to the Belmont Housing Authority sites,

and rides to the Saturday food pantry take place after hours.

Priority rides are for medical destinations that are in contiguous municipalities including Cambridge and Arlington. Most residents seek rides to health care offices at Mt. Auburn Hospital, Concord Avenue, and at the Waverley Primary Care right here in Belmont. Rides are also available to the adult day health program in Arlington and any non-medical destination within Belmont including hairdressers, libraries, banks, nursing homes, friends’ or relatives’ homes, and the Beech Street Center.

To schedule a ride, passengers need to call the COA as soon as they are aware they need a ride. Same-day booking is possible, space permitting. Group grocery shopping rides include twice-weekly rides to the Belmont Star Market on Tuesdays and Fridays and rides to the Burlington Market Basket on the first and third Thursdays of every month. This shopping service includes assistance from a driver who may carry up to five bags of groceries from the supermarket into



The Belmont Council on Aging transportation fleet.

the vehicle and from the curb to the passengers' home.

Two additional COA transportation services do not involve COA drivers or vehicles, but rather taxis and volunteers. Thanks to a special grant from the Metropolitan Area Planning Council awarded to the COA, a limited number of free Belmont Taxi rides are available to seniors. Destinations can include health care facilities that are beyond the service area of the COA vans. Taxi rides can also be scheduled after hours or whenever Belmont Taxi is open for business. These grant-funded rides need to be booked through the COA.

The volunteer driver program was suspended due to the COVID-19 shutdown in March 2020, but COA hopes to resume the program soon. If you are interested in becoming a volunteer driver, please call Marty Cloherty, Transportation Coordinator, at 617-993-2989 to apply.

Volunteer drivers from the community must be vetted through the COA. Passengers typically seek these rides to destinations that the COA either does not serve or cannot accommodate after hours. Passengers are matched by the COA with available drivers who transport them where and when they want. This service is free, but passengers are responsible for parking costs and tolls.

The COA also offers counseling on other transportation options, such as registering for the MBTA's Ride program, Springwell's transportation escort service, and specialized private transportation.

The COA also counsels seniors on using their smartphones to book rides through ridesharing companies such as Uber and Lyft. Seniors can also sign up with GoGo Grandparent, a company which handles the technical aspects of booking Uber and Lyft rides.

The Beech Street Center offers Charlie Card registration clinics sponsored by State Senator Will Brownsberger's office. For guidance on outside transportation options or Charlie Card registration, call the COA.

The COA also leads the town in planning for future transportation to seniors and residents of all ages. The Age Friendly Advisory Council recently developed an action plan



JEFFREY NORTH

that is available on the town website at bit.ly/BCFAgeActionPlan.

The main goals of the transportation part of the action plan are:

- Developing of parking options for older residents
- Promoting safe bikeway use
- Developing an internal transit system which connects the town's commercial districts
- Expanding the COA-based volunteer driver program

In addition, it was recognized that the town could be made more walker-friendly to older residents.

The new Parking Permit Program entitles Belmont residents over the age of 65 to free two-hour parking spots in municipal lots located in Belmont Center, Waverley Square, and Cushing Square. Permits are issued through the

COA for \$5 per year. To make an appointment for a parking permit please call the COA.

The long-term goals for Walkable Belmont are:

- Create more paths that minimize walking hazards throughout the town
- Ensure that there are enough long and accessible paths available that older adults can sustain a robust and healthy workout
- Improve and maintain physical safety on pavement and paths, including snow and ice removal on sidewalks

The COA looks forward to working with other departments and stakeholders in the newly appointed Age Friendly Action Committee to

Letters to the Editor

Dear BCF,

I live on Clarendon Road and am a town meeting member. The church I attend on Concord Avenue (the First Armenian Church) flooded last week overflowing (Wellington Brook, I presume). The public library next door almost flooded, I am told.

realize these goals over a three- to five-year period.

For any questions involving the Age Friendly Action Plan, please call the COA director [Nava Niv-Vogel](mailto:NavaNivVogel@belmont-ma.gov) at 617-993-2975 or nnivvogel@belmont-ma.gov.

The COA is committed to making many modes of transportation available to the community in the present and for the future. For information about any COA transportation program, please call the COA at 617-993-2970.

Nava Niv-Vogel is director of the Belmont Council on Aging.

What can you tell me about this situation, what do you advise, and is there a town plan in place to mitigate this?

Thank you,

David Boyajian

We asked Anne-Marie Lambert, author of several BCF articles on flooding in Belmont, to respond.

Below is an excerpt from her answer, edited for length and clarity.

It's worth checking whether the culvert under Brighton Street through which Clay Pit Pond drains into Blair Pond in Cambridge has obstructions, though I'm doubtful that it does. It's also possible that the culvert draining Blair Pond under the railroad tracks and into the continuation of Wellington Brook has obstructions. This leads me to suggest other possible actions:

Ask the Belmont Department of Public Works when was the last time they inspected that culvert (likely not at all) and whether they could please inspect it for obstructions. Even without obstructions, there



MYSTIC RIVER WATERSHED ASSOCIATION

Winn Brook flooding.

has been flooding at Clay Pit pond, but obstructions would make it worse. Copy the Belmont Conservation Commission.

Ask the Cambridge Department of Public Works to inspect the culvert draining Blair Pond under the railroad tracks and into the continuation of Wellington Brook for obstructions. Copy the Cambridge Conservation Commission.

Regarding the grate behind the library: the Department of Public Works (Jay Marcotte) has been very responsive to requests to clear the grate, which they do several times a year anyway. My observation over the years is that while it can look bad, in fact the water flows pretty well there even when there are a lot of branches and leaves piled up.

As a side note, I am curious if you know when the Armenian church was built and what went into the decision to select this location. Perhaps I'm too much of a romantic, but I am curious if the proximity to a brook was a factor in deciding on this location originally.

In any case, the 1972 Clean Water Act resulted in regulations which no longer allow buildings and impervious surfaces like parking lots to be so close to a water body as the church and library are without significant review and mitigation of the effects on water quality. I'm assuming all these buildings went in before 1972. EPA regulations today also make it difficult to redirect a brook the way Wellington Brook was redirected, e.g., with granite slabs to make it possible to build the library, or with culverts to send it through the abandoned clay pit in order to address issues related to stagnant water there. We are all living with history in so many ways.

To the Editor:

Please pass along my thanks to Jefferey North for his helpful [article about Norway Maples](#) in the September/October edition of the Belmont Citizen Forum.

I have one of these trees next to my driveway and my relationship with it is vexed!

I like the shade, but as Mr. North notes, the tree does not seem to attract any birds. However, my biggest issue with my Norway maple is its ardent enthusiasm for "self-pruning." Its habit of losing branches has cost me two trips to the autobody shop. My insurance company must think I am an idiot for parking there, but I don't



DAVID CHASE

Beaver Brook in 2010.

have a choice because the tree is on the part of my property next to the road that the town might "own." In other words, it may not be MY tree to take down.

In my efforts to ask the town to resolve the question of whether this is, indeed, "my" tree, I have learned that Belmont's Department of Public Works is friendly and well-meaning about accessing and replacing trees but woefully behind schedule and under-budgeted.

I am curious to learn what Mr. North knows about the process of working with the town to take down and replace troublesome trees.

Bayard Klimasmith

Jeffrey North responds:

Your letter and query underscore the need for a full-time tree warden in Belmont such as is employed by all of our neighboring towns. I am fairly confident in saying that the town does not engage in elective surgery for trees that are troublesome but not imminently dangerous. I suggest you direct further queries to DPW director and interim tree warden Jay Marcotte at 617-993-2680.



WIKIMEDIA COMMONS

Norway maple leaf

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