INVESTIGATION

Rodenticides are killing animals way up the food chain

Poisons used by Massachusetts municipalities are killing more than just the rats they're targeting

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Rat poison trap box (Getty Images/richard johnson)

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It was a sunny Friday morning in late July of this year when Jodi Sylvester, a wildlife photographer from central Massachusetts, drove into the Boston area to check in on a pair of juvenile bald eagles that

often served as her subjects. The pair had recently fledged but were still sticking by their parental nest along the Mystic River.

When Sylvester arrived, she noticed one of the eaglets was acting strangely. She was perched on a low branch of a tree with her eyes closed and one of her talons dangling off the side.

"I had never seen anything like it, and I knew it wasn't okay," Sylvester says.

In the afternoon, things took a turn for the worse.

The eaglet fluttered from her tree branch and fell onto the ground face first and was barely moving. Sylvester made several phone calls, until she finally reached a professional who agreed to help.

D (who asked that she be identified only by the initial of her first name) arrived on the scene shortly after. D checked the eaglet's wristband, which identified her as C25. She reported the eaglet's status to the state wildlife agency and with its permission, transported C25 to Tufts Wildlife Clinic in Grafton.

"The eaglet was so sick, she couldn't lift her head, even when I picked her up," D recalled.

D, who has been working in animal rescue for decades and has expertise in birds of prey, had a strong suspicion what was making the eaglet sick. "I was pretty sure it was rodenticide poisoning."

D dropped the eaglet off at the clinic and hoped for the best. C25 died not even an hour after she was admitted.

A few weeks later, a necropsy performed by state wildlife officials confirmed C25 had succumbed to poisoning from exposure to second-generation anticoagulant rodenticides, or SGARs, which prevent blood from clotting in animals and humans.

Most likely, C25 had eaten rats that had consumed the poison—a phenomenon known as "secondary exposure." The rats probably consumed the poisons out of the many bait stations that dotted the residences and businesses around C25's main hunting territory in Arlington and that have become a ubiquitous fixture of the metro area.

C25 is the second bald eagle confirmed to die due to SGARs exposure in the state this year. The first eagle was one in Waltham, a cousin of C25 who was reportedly found dead on top of her nest with unhatched eggs beneath her. Another bald eagle exhibiting severe rodenticide poisoning was found and euthanized on Cape Cod in 2018. Only recently upgraded from "threatened" status to a "species of special concern" under the Massachusetts Endangered Species Act, bald eagles were once extinct in the state due to the effects of DDT, until the toxin was federally banned in 1972.

And bald eagles aren't the only species susceptible to SGARs poisoning.

"We probably get between 100 and 200 animals a year," says Zak Mertz, executive director of the Birdsey Cape Wildlife Center in Barnstable, which is part of the New England Wildlife Centers (NEWC).

Though NEWC sees SGARs exposure across species, Mertz says birds of prey seem to bear the brunt of poisonings, likely due to rodents being a primary staple of many of their diets. Occasionally, a raptor poisoning will make it into the news, either because as with C25, it's a listed species, or as in the case of Ruby the red-tailed hawk in 2015, because that specific animal is known locally. But these isolated stories do not hint at the larger trend of wildlife poisonings due to SGARs in the state.

While Mertz asserts all of the rodenticide cases treated at NEWC affect him and his colleagues, there was one that was particularly

difficult: a nest of great horned owls discovered in April on the Cape either dead or dying.

"One chick was just covered in blood, bleeding from every orifice, and we did everything we could to save it, even giving it an emergency blood transfusion from another owl at the center," Mertz says. "Unfortunately, he didn't make it."

Of that owl family, only one survived—a young owlet. It took many months of aggressive treatment to get it to the point where its blood would clot on its own again, and it was finally released in early December.

For Sylvester, it's a familiar story. Besides C25, one of her other favorite photographic subjects was a great horned owl nest in Jamaica Plain.

"But all four of them died due to rat poison," says Sylvester. "It wiped out the entire family."

Bait and wish

As I reported in 2018, SGARs were banned from over-the-counter sales in 2015 by the US Environmental Protection Agency due to reports that thousands of children were winding up in emergency rooms across the country annually because of accidental poisoning. The majority of children impacted by these rodenticides were young children of color residing in low-income housing.

Though SGARs usually cannot be found on shelves in retail stores anymore, they are still allowed to be deployed by licensed pest control professionals in "tamper resistant" bait stations as a way to reduce child exposure. But studies determining whether the bait stations reduce incidents of child poisonings due to SGARs seem to be limited. One 2020 EPA report noted a 46% decline in child rodenticide incident reports related to SGARs between 2011 to 2017 and 79% between 2009 and 2018. (Over these same time periods, poisonings from first-

generation anticoagulant rodenticides, which are still available over the counter, have increased dramatically—between 60 and 80%, respectively.)

For those unfamiliar with them, these bait stations tend to be placed against the sides of buildings and houses. They are nondescript black boxes that often resemble tool boxes. Sometimes they bear warning labels on top of them that name the rodenticide inside and list an EPA registration code; sometimes they do not, leaving people to guess at their contents–if they notice them at all.

While the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires that a pesticide product such as SGARs must be labeled, that requirement pertains to the "immediate container" the product comes in, rather than the bait station it is often distributed in, unless they are packaged together (which they often are not). This means in many cases, only the pest control professional may be aware of what the product actually is and its hazardous potential. This can enable landlords to mislead their tenants about what is being used on their properties for rodent management and the potential threats it poses to children, pets and local wildlife.

"Unless a landlord is distributing a product with a label that contains false or misleading claims about a product's contents, it is not a violation under FIFRA for a landlord to make inaccurate claims about the contents of a product," an EPA representative wrote in an email response to questions for this article. The EPA rep also wrote that it is not a violation under FIFRA for pest control professionals to make inaccurate claims about the impact of SGARs on non-target animals, as long as they are not putting a false label on a bait station.

(Disclaimer: As a former wildlife biologist and advocate, I have been vocal about wanting a statewide ban on SGARs.)

Public records requests filed with several housing authorities in municipalities where high-profile SGARs-related wildlife cases were

reported—including Arlington, Waltham, Cambridge, and Boston—yielded findings that all of them use SGARs on their public housing properties.

For instance, the Cambridge Housing Authority has 358 bait stations containing SGARs spread throughout the 22 properties it manages. More than half of those bait stations were placed between 2018 and this year.

Most municipalities in the metro area, like Arlington and Waltham, also require any new construction to have bait stations on site during the predemolition phase. While there is no requirement for those bait stations to include SGARs, a public records request with the town of Arlington revealed pest control companies contracted for nearly all of the 32 sites approved in 2021 used SGARs—even those sites without any signs of rodent activity.

Despite the immense popularity of SGARs, there is virtually no peer-reviewed research to support their effectiveness on reducing rodent populations in suburban and urban ecosystems. In reality, reported sightings of rat activity in the Boston metro area have only continued to increase with the proliferation of bait stations containing SGARs. This might be because rodents have long been known to develop resistance to anticoagulant poisons such as SGARs with prolonged use.

Though tamper-resistant bait stations may reduce (but far from eliminate) SGAR poisonings of children, bait stations do not address other risks. A 2021 study found that rats that consume SGARs are more susceptible to contracting some diseases they can then spread to humans, like leptospirosis and E. coli. And as illustrated with the case of C25, the bait stations do not prevent secondary SGARs exposure to wildlife and pets.

NEWC and several other wildlife rehabilitators and animal control officers interviewed for this article all report noticing an uptick in recent

years—in some cases, considerable—in the numbers of animals exhibiting symptoms of rodenticide poisoning. Several people also noted that even of those animals that survive poisoning, recovery periods seem to be taking longer and requiring more in-depth treatment.

Preying on predators

The EPA has long known about the impacts of SGARs on wildlife, with a comparative assessment conducted back in 2001 concluding that the most prominently used SGAR, brodifacaum, posed "high primary and secondary risks to birds and nontarget mammals."

A much more recent EPA assessment of all anticoagulant rodenticides (ARs) conducted in 2020 affirmed, "The nature of risk to mammals and birds from ARs is well-established and includes mortality from primary and secondary exposure, as well as chronic growth and reproduction effects." This same report found that of the nearly 700 confirmed SGARs-related cases in wildlife documented in the US since 2010, brodifacoum and bromadiolone were the primary culprits, making up nearly 70%.

While 700 incidents may not sound like a lot over the course of a decade, only a few states in the entire country actually attempt to track such incidents that occur within their borders—Massachusetts being one of them. The exorbitant price of definitive testing to confirm SGAR poisoning is usually too cost prohibitive for wildlife rehabbers and clinics often working on shoestring budgets.

One Massachusetts study the 2020 EPA report references found that ARs were discovered in 96% of the raptors tested, with 99% of them testing positive for brodifacoum.

"SGARs poison rat predators such as raptors (hawks, owls, eagles) and foxes," says Heidi Ricci, director of policy and advocacy at Mass

Audubon. "This ironically increases rodent populations since the rodents breed much faster than their predators."

Ricci explains that the negative impact of SGARs on wildlife is why Mass Audubon, along with NEWC and several other animal and environmental advocacy organizations, have co-sponsored a new proposed piece of legislation that seeks to address the issue.

H.3991, introduced by State House Rep. James Hawkins (D-Attleboro), would require that pest control professionals disclose the public health and environmental risks of SGARs to prospective consumers and get signed consent forms if they still agree to use them. It would also create an online database to better track use and disclosures of SGARs (I have been on some of the coalition calls for this bill to ask questions and offer input).

So far, the bill has 62 co-sponsors in the State House, and had its hearing with the Joint Committee for Natural Resources, the Environment and Agriculture on Dec 14. That hearing will also include consideration of two other bills that could impact SGARs regulation in Massachusetts. H. 910 would empower local governments with the ability to regulate—and potentially ban—certain pesticides, including rodenticides, on private property (currently state law does not allow municipalities to ban or restrict pesticides). H.4143 would move authority and oversight of pesticide use and application in the state from the Massachusetts Department of Agricultural Resources to the state Department of Environmental Protection.

The pest lobby

In addition to legislative efforts in Massachusetts concerning SGARs, they were banned in California in 2020 until their risks could be further evaluated by the state, while British Columbia placed a temporary moratorium on the rodenticides. Many local, state, and federally owned parks, wildlife refuges, and conservation lands—as well as school properties—have excluded them altogether.

If SGARs pose such high environmental and public health risks, while lacking data to support their effectiveness in reducing rodents in metro areas, why do they continue to be used so prevalently?

"As a commercial salesman, the biggest commission comes from rodenticide subscriptions," says Jerry Darcy, a former pest control professional, who worked for a national pest company in Massachusetts. "[That's why they] don't care what their product does to the environment."

Darcy—who asked his real name not be used to protect his identity—was forced to resign when his employer threatened legal action against him and delayed his pay for months after he was quoted in the news under his professional title discussing alternatives to poisons for rodent control. Darcy believes he was treated this way because rodenticides make up the biggest revenue stream for his company (which he also asked not be named), despite the fact that when he first interviewed for the job he was told he would be able to engage in poison-free work.

The pest control industry has invested hundreds of thousands of dollars contributing to federal elections in the last decade.

According to the website OpenSecrets, which tracks campaign funding, the National Pest Management Association significantly increased its contribution rates to political candidates between 2012 and 2018 as compared to the decade prior. The vast majority of contributions (between 75% and 90%) were donated to Republican candidates.

The National Pest Management Association has also taken credit for influencing state governments, noting in one article in a pest industry trade publication that the association "dominated at the state-level thanks to the cooperation, energy and execution of our state pest control associations and State Policy Affairs Representatives."

Drew Toher, community resource and policy director of the nonprofit Beyond Pesticides, believes the influence of the pest control industry also extends to the very agency tasked with its oversight: the US EPA.

"The government pesticide program is sorely deficient to the point of failing," Toher says. "And recent reports show a disturbing depth of corruption."

Toher is referencing recent investigative work by the Intercept detailing the EPA's mishandling of the cases of four scientist whistleblowers at the agency. The scientists alleged the EPA's Office of Chemical Safety and Pollution Prevention tampered with dozens of chemical assessments in order to portray them as safer than they actually are and were retaliated against for speaking out.

Another report published by the US Government Accountability Office this year found that the EPA failed to prioritize its own program that evaluates different chemicals and that it proposed a 34% ($12.7 million) cut to the 2021 budget to the division responsible for assessing the health and environmental risks of the chemicals they evaluate.

Almost all of the public housing agencies and municipal representatives interviewed for this article explained that the pest control companies they contracted with assured them SGARs were legal, safe, posed little environmental threat, and are the most effective methods for rodent control.

None of the major pest control companies contacted responded to specific questions for this article. Sylvester, the photographer who found a sickly C25, offered a point of view from outside of the pest control industry.

"It makes me think that I can't do [wildlife photography] anymore," Sylvester says. "All of the losses, it's just too much. Just one of the many reasons why these poisons must be banned."

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