RODENTICIDES
Deadly Wildlife Poisons

project coyote

Brandon Bish

What Are Rodenticides?

Rodents who have adapted to live alongside humans, such as rats, mice, gophers, moles, voles, and squirrels, are frequent targets of population control efforts. Rodenticides are poisonous chemicals that have become a severe threat to wildlife, companion animals, and children. Their widespread use in urban and suburban areas to "manage" rodents has created an invisible hazard for countless species that share our environment, particularly wild carnivores.

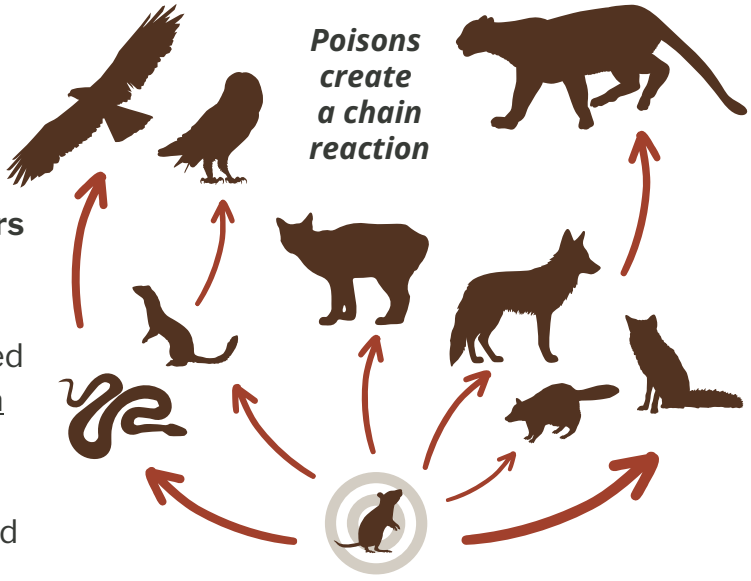
Jamie Samuels

Bait box containing rodenticide.

Rodenticide poisoning can cause a slow, agonizing death. Victims can suffer for days from uncontrolled bleeding or hemorrhaging, internal bleeding, cardiovascular collapse, and organ failure. The suffering can last for days as the poison slowly works its way through their system. Beyond the poison's direct effects, contaminated animals face heightened risks of collisions into structures, predation, lowered immunity, increased susceptibility to parasites and diseases like mange, and fatal encounters with vehicles.

Rat Poison is Wildlife Poison

The reach of rodenticide poisoning extends far beyond its intended targets. **Rodenticides bioaccumulate—or, build up over time—in predators that consume poisoned rodents, such as hawks, owls, bobcats, foxes, coyotes, and mountain lions.** More than 25 wildlife species have been documented suffering from these poisons. In 2023, the California Department of Fish and Wildlife found that 88% of raptors, including bald eagles, 100% of barn owls, 92% of gray foxes, and 90% of mountain lions tested positive for the poisons. Exposure to rodenticides can cause internal bleeding, decreased immune system response resulting in greater susceptibility to diseases like mange, and death in non-target wildlife.



Rick Cameron

Urban wildlife such as coyotes, raccoons, and various bird species also face increasing exposure as they adapt to life in human-populated areas, where rodenticides are commonly used. The number of species affected by rodenticide poisoning continues to grow, including bears, bobcats, Pacific fishers, and even endangered species such as San Joaquin kit foxes.

Healthy mountain lion killed by rodenticide posioning in the Santa Monica Mountains National Recreation Area, via Wikimedia Commons.

How Rodenticides Work

ANTICOAGULANT RODENTICIDES

Anticoagulant rodenticides work by preventing blood from clotting, leading to fatal internal bleeding in the form of hematomas, bleeding from the nose and eyes, vomiting and urinating blood, blood filling up in the lungs, limping due to bleeding in the joints, coughing and wheezing from bleeding in the lungs, and sudden death. These poisons bioaccumulate—that is, build up over time—in animals' systems, whether consumed directly or by eating contaminated prey. There are two types of anticoagulant rodenticide poisons:

- **First-generation anticoagulants**, such as warfarin, diphacinone, chlorophacinone, pindone, fumarin, and coumachlor, can require multiple feedings to result in toxicity in animals.
- **Second-generation anticoagulants**, or SGARS, such as brodifacoum, difenacoum, difetheiolone, and bromadiolone, are highly toxic and persistent chemicals that can result in death after a single feeding and stay actively toxic long after the host animal's death. Second-generation anticoagulants make up 60% of rodenticide sales.

Coyotes with (above) vs. without mange (below), a serious disease commonly exacerbated by rodenticide poisoning.

BROMETHALIN RODENTICIDES

Bromethalin-based poisons, including zinc bromethalin, zinc phosphide, and cholecalciferol, are potent rodenticides designed to kill an animal in a single feeding. These chemicals attack the nervous system by causing fluid buildup in the skull and spine. At high doses, animals suffer through seizures and muscle tremors before dying. Even at lower doses, these poisons cause devastating effects, including paralysis and loss of coordination, leaving animals vulnerable to injury and death. Bromethalin is a non-selective poison that has been found to cause death in wild mammals and bioaccumulate in birds of prey.

Peachyeung316

Rodenticides can look like candy to small children and are placed on the floor level, making them easily accessible.


Karin Saucedo

Bobcat suffering from mange, often leading from second-hand rodenticide poisoning by eating poisoned rodents.

Poisoning Children and Companion Animals

Rodenticides regularly poison children and pets. In 2019, the American Association of Poison Control Centers' National Poison Data System opened 82,570 documented rodenticide exposure cases, including **33,363 cases of rodenticide poisoning in children** in that year alone. The risk to children is particularly high because manufacturers often formulate these poisons as colored pellets with attractive flavorings like peanut butter or fish oil, making them easily mistakable for candy. Their necessary placement at ground level for effectiveness makes them dangerously accessible to curious young hands and mouths. Similarly, each year, rodenticide poisons are listed on the ASPCA Animal Poison Control Center's top 10 list of pet toxins, causing **29,000 of the pet poisoning** calls they received in 2023.

Safer Alternatives Available

Luckily, there are nonlethal, more effective, and safer alternatives to cruel rodenticide poisons. Like all animals, rats and mice seek out food and shelter to make a safe and inviting home. **The first line of defense against human-rodent conflict should always be exclusion and prevention.** For example, human food scraps should be securely contained, openings to buildings sealed, and ivy or other cover plants trimmed down to prevent rodents from taking shelter in them. Leaving out bird seed will also attract hungry rodents. In cases where removal is necessary, live traps may be appropriate. Glue traps are excessively cruel and should never be used.

Contraception (birth control) drugs for rodents, such as the product ContraPest, are increasingly showing promising results in reducing human-rodent conflict. Recent studies have shown rodent activity to **decline by 94% with use of rodent contraception** when used concurrently with other non-lethal methods of rodent exclusion.

For more information on humane rodent intervention, consult Humane World for Animals' page Humane Solutions for Wildlife Problems and select the relevant wildlife species.