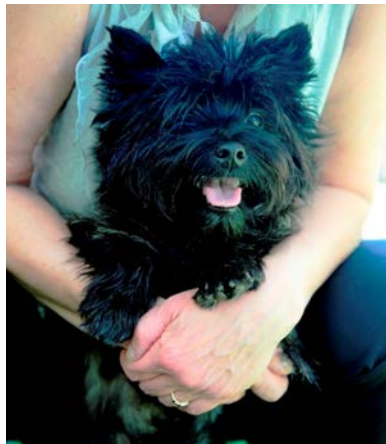


California: Restrict Rodenticides

Inhumane and Environmental Hazard



Anticoagulant rodenticides are cruel and harm animals who are not intended victims (non-target). Non-target animals eat poison intended for rodents. And anticoagulant rodenticides build up in rodents so animals who eat them are poisoned.

Second generation anticoagulants (SGAR) are more toxic than older first generation anticoagulants and **especially harmful to non-target animals.** A rodent gets a lethal dose of SGAR in one feeding, but takes days to die while SGARs continue to build up to super-lethal levels.^{1,2} And SGARs that don't quite kill persist until they reach harmful levels.^{3,4} Homeowners are the primary users of rodenticides, and they primarily use SGAR.⁵

Federal Regulation

The U.S. Environmental Protection Agency (EPA) issued a Notice of Intent to Cancel the registrations of 12 rodenticide products that don't comply with EPA safety standards. This is the first step in a process to remove these products from the market—a process that may take years.^{6,7}

EPA safety standards forbid SGAR in products sold in supermarkets, hardware, and home supply stores. Products with other active ingredients may be sold in these outlets in block form and a tamper-resistant bait station. Bulk packages of SGARs may be sold in farm stores and to licensed applicators.⁸



California Regulation



The California Department of Pesticide Regulation (CDPR) developed mitigation measures for SGARs including giving them a Restricted Material designation effective July 1, 2014.^{9,10} This will prevent the public from buying SGARs but allow licensed pest control operators and farmers to use them.¹¹

Designating SGAR Restricted Material has two important benefits. First, SGAR will be removed from supermarkets, hardware, and home supply stores much more quickly than waiting for the outcome of the EPA cancellation process. Second, SGARs will not be sold to ANY retail buyers in California—even in farm stores—but only to licensed applicators.

HSUS supports AB 2657 and City of Los Angeles Item 13-1580

Pending state legislation and City of Los Angeles action would complement CDPR and federal regulation by keeping all SGARs away from the most vulnerable potential victims of unintended rodenticide poisoning.

- Item 13-1580 would ban the use of SGARs in Los Angeles parks and environmentally sensitive areas.
- AB 2657 would prohibit the use of SGARs in state and national parks, wildlife refuges, and conservancies throughout the state.



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California: Restrict Rodenticides

Non-target Victims of Rodenticides in California

Non-target animals are dying from anticoagulant rodenticides in California. It is rare that wild animal victims are recovered and even rarer that necropsies (postmortem exams) or laboratory tests are performed. Occasionally, veterinarians contact a poison control hotline to aid treatment but there is no central recordkeeping of pet poisoning. Therefore reported cases represent the tip of the iceberg.



People can prevent problems with rats and mice by sealing up cracks and holes where they gain entry. Clean up trash that can attract rats and mice and secure trash, food, bird seed, and pet food in sturdy, closed wildlife-proof containers. Rodents inside homes can be live-trapped and released outdoors.

Hadidian, John, Margaret Baird, Maggie Brasted, Lauren Nolfo-Clements, Dave Pauli, and Laura Simon. *Wild Neighbors: The Humane Approach to Living with Wildlife*. Humane Society Press. 2007.

1977 through 2007 (Bakersfield, California): Necropsies and liver analysis of 30 dead San Joaquin kit foxes, an endangered species, recovered in Bakersfield and liver analysis of archived kit foxes dating back to 1977 were analyzed. 87% of the foxes had been exposed to anticoagulant rodenticides, most commonly brodifacoum and bromadiolone, both SGAR. In addition, livers of two red foxes were analyzed and found to contain both brodifacoum and bromadiolone.¹²

1986 (California): A raccoon and a mountain lion were found dead near a stream. Both had signs of internal bleeding and diphacinone, a SGAR, was detected in both animals' blood which was highly probable cause of death.¹³

1987 (California): A San Joaquin kit fox, an endangered species, was found dead at a plant nursery near a university where anticoagulant poison had been used to kill ground squirrels. There were signs of internal bleeding and diphacinone, a SGAR, was detected. The fox's death was probably due to the rodenticide.¹⁴

1994 (California): A kangaroo rat, native California species, was found near death. Liver analysis detected diphacinone, a SGAR, which probably caused the death.¹⁵

1994 (California): A turkey was found dead and blood analysis found chlorophacinone, a first-generation anticoagulant.¹⁶

1994 through 1999 (California): California Department of Fish and Game (CDFG) Pesticide Investigations Unit necropsied and analyzed tissues from 74 wild animals of 21 species of birds and mammals who were recovered dead, in moribund condition and subsequently euthanize, or trapped as pests or public safety hazards and euthanized. Analysis found that 70% of the mammals and 68% of the birds contained anticoagulant rodenticides. 43 animals had been exposed to brodifacoum and 14 to bromadiolone, both SGAR. Animals exposed included 17 coyotes, 3 red foxes, 4 San Joaquin kit foxes, 2 gray foxes, 2 raccoons, 8



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California: Restrict Rodenticides



The [pest control] company used brodifacoum, a SGAR, until the farmer's golden retriever was found dead with confirmed brodifacoum poisoning. Over a three-year period, non-target wildlife were found dead on the farm as well.

U.S. EPA OPP Compilation of Rodenticide Wildlife Mortality Incidents Reported Between 1972- 2012. January 29, 2013.

bobcats, 1 mountain lion, 1 Heermann's kangaroo rat, 10 golden eagles, 4 red-tailed hawks, 2 red-shouldered hawks, 1 American kestrel, 6 barn owls, 4 great horned owls, 2 turkey vultures, and 1 turkey.¹⁷

1995 (California): In separate incidents, two bobcats were found dead. Liver analysis detected chlorophacinone, a first-generation anticoagulant, in one bobcat which the pathologist judged was the cause of death. The other bobcat's death was highly probably caused by rodenticide poisoning.¹⁸

1996 (California): CDFG reported that brodifacoum, a SGAR, caused the death of an eagle.¹⁹

1996 (California): A golden eagle found dead had numerous subcutaneous hematomas and blood in the mouth. Analysis of the liver detected brodifacoum, a SGAR, which was highly probable cause of death.²⁰

1996 through 2004 (Coastal mountain ranges north and west of Los Angeles, California): A long-term study of wild cats necropsied and analyzed livers from 39 bobcats and 4 mountain lions. 1 of the bobcats and 2 of the mountain lions died from anticoagulant poisoning. 90% of the bobcats and all of the mountain lions had SGAR in their tissues—most had more than one anticoagulant. Many of the bobcats in this study died of severe mange infestation—a normally rare and not life-threatening condition. Based on their work, the authors believe anticoagulant exposure contributes to advanced and fatal mange disease in wild cats.²¹

1997 (California): The Pesticide Investigation Unit of the CDFG reported a golden eagle was killed by SGAR (brodifacoum) poisoning.²²

1997 (California): CDFG's Pesticide Investigation Unit reported two coyotes were killed by brodifacoum, a SGAR. In a separate incident, another coyote was killed by rodenticide poisoning.²³

1997 (California): In separate incidents, 3 coyotes were found dead next to and in streambeds. Two had blood in thoracic and abdominal cavities. One coyote's lungs oozed blood. Another had massive hematomas (masses of blood outside blood vessels) on both hind legs. Liver analysis detected brodifacoum, a SGAR, which was highly probable cause of all three deaths.²⁴



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California: Restrict Rodenticides

A veterinarian called poison control and reported that, despite treatment, a female 2-year old yellow Labrador retriever died from consuming diphacinone-containing d-Con rodent poison product. The owner saw the dog eat out of the d-Con box but did not think d-Con would be poisonous to the dog, but only poisonous to rats and mice. The dog had been nursing her 8 puppies and the veterinarian was also concerned that the anticoagulant could have been passed to the puppies in their mother's milk.

Winfield, Sarah, US EPA, Toxicology and Epidemiology Branch, Health Effect Division. Memorandum: Rodenticides: Tier 2 Pet Incident Report in Support of NOIC. October 31, 2011.

1997 (California): Two foxes found dead outside a home were killed by brodifacoum, a SGAR. Their stomach contents showed they had eaten rodents.²⁵

1997 (California): A mountain lion was seen drinking from a backyard swimming pool and found dead the next day. Necropsy found acute bleeding in the lungs and stomach. Liver analysis detected brodifacoum, a SGAR, which was highly probable cause of death.²⁶

1997 (Augora Hills, California): A juvenile coyote found dead had brodifacoum, a SGAR, in the liver tissue which was highly probable cause of death.²⁷

1997 (California): An adult female bobcat was found dead in a stream bed near a golf course. Liver analysis found brodifacoum, a SGAR, which was highly probable cause of death.²⁸

1997 (California): In the judgment of the wildlife pathologist, a golden eagle found dead was killed by brodifacoum, a SGAR.²⁹

1997 (California): In separate incidents, one coyote was highly probably and another possibly killed by rodenticide poisoning.³⁰

1997 (California): CDFG Pesticide Investigation Unit confirmed that a coyote was killed by brodifacoum and diphacinone, both SGAR.³¹

1997 (Santa Monica Mountains National Recreation Area, California): The carcass of a young coyote was found in thick streamside vegetation. Both hind legs had massive hematomas and blood was found in body cavities. Liver analysis detected diphacinone and brodifacoum, both SGAR, which were highly probable cause of death.³²

September 12, 1997 (Santa Monica Mountains National Recreation Area, California): A male coyote, who was part of a National Park Service radio-telemetry study, was found dead. Necropsy found large hematomas on all four limbs. Chlorophacinone, a first-generation anticoagulant found in his blood and liver, was highly probable cause of death.³³

1998 (California): CDFG recovered a dead great horned owl. Liver analysis detected brodifacoum, a SGAR, which was probable cause of death.³⁴



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California: Restrict Rodenticides

Non-target Species Impacted by Rodenticides in California

Mammals:

Baja mouse

Bobcat

Cactus mouse

California mouse

Coyote

Deer mouse

Dog (domestic)

Fishers

Fox squirrel

Gray fox

Heermann's kangaroo rat

Mountain lion

Opossum

Pig (domestic)

Raccoon

Red fox

San Joaquin kit fox (endangered)

Striped skunk

Western gray squirrel



1998 (California): Liver tissue from a trapped and euthanized coyote had residues of brodifacoum and diphacinone, both SGAR, and chlorophacinone, a first-generation anticoagulant.³⁵

1998 (California): A coyote was found dead and liver analysis detected brodifacoum, a SGAR.³⁶

1998 (California): A grey fox was found dead and liver analysis detected brodifacoum, a SGAR, which was probable cause of death.³⁷

April 22, 1999 (California): Veterinarian treated shepherd mix puppy who ate rodenticide, identified by brand and product name to contain chlorophacinone.³⁸

April 23, 1999 (California): Veterinarian treated dog who consumed rodenticide containing diphacinone.³⁹

June 8, 1999 (California): A 9-month old dog died from rodenticide poisoning. The product the dog had eaten was tested to determine the active ingredient was chlorophacinone.⁴⁰

1999 (California): In separate incidents, 8 fox squirrels, a great horned owl, and a bobcat died from brodifacoum, a SGAR.⁴¹

1999 (Contra Costa county, California): An adult great horned owl was found dead in a shoreline area. Liver analysis found brodifacoum, a SGAR, and diphacinone, a first-generation anticoagulant.⁴²

1999 (Parkland in Sacramento, California): Two fox squirrels were found dead with no external signs of trauma. One squirrel had subcutaneous hemorrhage in the left hip and hind leg. Both squirrels had internal signs of blood loss. Liver analysis for both detected brodifacoum, a SGAR, which was highly probable cause of both deaths.⁴³

1999 (near large chicken egg production farm in Yucaipa, California): A great horned owl and four barn owls were found dead. All five birds had hemorrhages and subcutaneous hematomas as well as internal signs of blood loss. Tissue analysis for all five owls found brodifacoum and bromadiolone, both SGAR, which was highly probable cause of these deaths.⁴⁴

1999 (California): A dead bobcat showed hemorrhage in the lungs



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California: Restrict Rodenticides



Non-target Species Impacted by Rodenticides in California

Birds:

American kestrel

Barn owl

Burrowing owl

Cooper's hawk

Crow

Golden eagle

Great horned owl

Northern harrier

Raven

Red-shouldered hawk

Red-tailed hawk

Rock pigeon

Screech owl

Spotted owl

Sharp shinned hawk

Swainson's hawk

and bruising in muscles. Liver analysis detected brodifacoum, a SGAR.⁴⁵

1999 (California): In separate incidents, two golden eagles were found dead. Liver analysis detected brodifacoum, a SGAR, in both.⁴⁶

1999 (California): In separate incidents, two San Joaquin kit foxes, an endangered species, were found dead. Liver analysis detected brodifacoum, a SGAR, in both foxes and chlorophacinone, a first-generation anticoagulant in one fox.⁴⁷

1999 (California): A barn owl was found dead. Liver analysis detected brodifacoum, a SGAR, which was highly probable cause of death.⁴⁸

1999 (California): Two barn owls and a great horned owl were found dead. Liver analysis detected brodifacoum and bromodialone, both SGAR, which were highly probable cause of these three deaths.⁴⁹

1999 through 2003 (California): In a study of San Joaquin kit fox deaths, foxes were radio-tracked and their carcasses recovered. Brodifacoum, a SGAR, was found in 27 dead foxes.⁵⁰

2000 (Chaparall School, Claremont, California): A dead horned owl found at the school was turned over to the Pomona Valley Audubon Society. Analysis found brodifacoum, a SGAR, which was highly probable cause of death.⁵¹

2000 (Botanic Garden at Harvey Mudd College, Claremont, California): Two Cooper's hawks were found dead. One had suffered a massive hemorrhage. Both were probably killed by rodenticides.⁵²

2000 (Scripps College, Claremont, California): A great horned owl was found dying. Necropsy showed the owl died of brodifacoum, a SGAR.⁵³

2000 (California): A red-tailed hawk was found dead. The liver contained brodifacoum, a SGAR, which was probably the cause of death.⁵⁴

2000 (State beach in Monterey County, California): A juvenile red fox was found suffering from mange and chronic bacterial



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California: Restrict Rodenticides

Turkey Turkey vulture



“... even without symptoms of anti-coagulant rodenticide poisoning, WildCare’s data reveals that the majority of rodent-eating patients like hawks, owls, raccoons and foxes are carrying these toxins in their bodies.

By allowing these predators to be poisoned, we are destroying the best chance we have at maintaining a natural balance of rodent populations”

Is rat poison a problem in YOUR neighborhood? WildCare webstory

infection and was euthanized. Liver analysis found brodifacoum, a SGAR. The fox’s condition may have been related to rodenticide exposure.⁵⁵

2000 (California): In separate incidents, two coyotes were found dead. Liver analysis detected brodifacoum and bromodialone, both SGAR. It was highly probable these deaths were caused by rodenticides.⁵⁶

2000 (California): In separate incidents, four San Joaquin kit foxes, an endangered species, were found dead. Liver analysis found brodifacoum, a SGAR, in all four and bromodialone, also a SGAR, in one.⁵⁷

2000 (California): A great horned owl was found dead. Liver analysis detected brodifacoum, a SGAR, which was highly probable cause of death.⁵⁸

2001 (California): A red-tailed hawk that habitually perched on a bridge was found dead. This death probably resulted from rodenticide poisoning.⁵⁹

2001 (California): Two great horned owls and a Cooper’s hawk were reported killed by brodifacoum, a SGAR.⁶⁰

2001 (Vicinity of the Santa Monica Mountains National Recreation Area, California): A bobcat who was part of a National Parks Service radio-telemetry study was found dead. Liver analysis detected brodifacoum, a SGAR, and necropsy found evidence of anticoagulant poisons and physical trauma. It was determined the bobcat was hit by a vehicle.⁶¹ Exposure to the SGAR could have contributed to the death by causing debility making the bobcat less able to avoid road hazards.

2001 (California): A kit fox found dead was necropsied. Blood, liver, and gastrointestinal contents all had residue of brodifacoum, a SGAR.⁶²

2001 (California): The liver analysis of a red-tailed hawk detected brodifacoum, a SGAR.⁶³

2001 (California): The Office of Spill Prevention and Response of the CGFG found a dead coyote during a wildlife disease project. On necropsy, they found the coyote had a large amount of unexplained blood in the abdominal and chest cavities. Liver



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California: Restrict Rodenticides



Veterinarians at the University of California, Davis treated a 1-year old Belgian Malinois dog named Mocha from Winters. Mocha had gotten into d-CON. Luckily, Mocha responded well to treatment and was able to go home in two days.

Said Ken Shaw, Mocha's owner, "Like most dogs, Mocha is adventurous and likes to get into things she shouldn't."

analysis found chlorophacinone, a first-generation anticoagulant, which was highly probable cause of death.⁶⁴

June 26, 2002 (California): Two dogs ate ground squirrel bait containing chlorophacinone. One dog died and the other was very sick. Owner reported that dogs found the bait on the sidewalk where it had fallen out of flower garden.⁶⁵

2002 (California): A San Joaquin kit fox, an endangered species, was found dead with brodifacoum, a SGAR, in his/her system.⁶⁶

2002 (California): Two San Joaquin kit foxes, an endangered species, were found dead and analyzed. One had brodifacoum, a SGAR, in his/her system. Both deaths possibly resulted from rodenticide poisoning.⁶⁷

2002 (California): A dead barn owl had brodifacoum, a SGAR, in his/her system which was probable cause of death.⁶⁸

2002 (Sacramento, California): An adult female barn owl was found dead in a residence's yard. She had massive subcutaneous hemorrhage on her keel. Liver analysis confirmed brodifacoum, a SGAR, which was highly probable cause of death.⁶⁹

October 5, 2003 (California): Nine-year old female Australian shepherd died a few days after neighbor used pelleted rodent bait containing diphacinone around trees to kill ground squirrels. Dog bled from her nose which veterinarian described as "classic case" of anticoagulant poisoning.⁷⁰

2003 (California): A rock pigeon was found dead. It was determined that diphacinone, a first-generation anticoagulant, and brodifacoum, a SGAR, were highly probable cause of death.⁷¹

2004 (Simi Hills area near Los Angeles, California): Two adult mountain lions being radio-tracked by the National Park Service were found dead. Necropsies found severe hemorrhages in body cavities of one mountain lion. Bromadiolone and brodifacoum, both SGAR, were found in the livers of both lions which were highly probable cause of both deaths. Park Service officials suspect that the mountain lions were poisoned by eating coyotes who had eaten poisoned rodents.⁷²

2005 (California): An owl found dead had extensive hemorrhage in breast muscle and body cavity. Liver analysis detected



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California: Restrict Rodenticides

Accidental dog poisoning on the rise. ANR News Release September 24, 2012.



“Rodenticides are designed to kill mammals, and so their effects on humans, birds, and non-target mammals are qualitatively the same as their effects on target pests, ...”

US EPA Statement of Reasons and Factual Basis for Notice Intent to Cancel Registrations of, and Notice of Denial of Applications for, Certain Rodenticide Bait Products. January 29, 2013

brodifacoum, a SGAR, which was highly probable cause of death.⁷³ **2006 through 2011** (northwestern California and north central California): A study of fishers (a rare member of the weasel family) from two isolated California populations living far from any developed areas necropsied and analyzed tissue from 58 fisher carcasses. The study found 79% had been exposed to anticoagulant rodenticides and 96% of those exposed had been exposed to SGAR. Four of the fishers were killed solely by their exposure to anticoagulant rodenticides.⁷⁴

January 26, 2007 (California): Owner of a 7-month old female terrier spread warfarin-containing pellet bait in his yard where his dog lives. He saw the dog eat the poison pellet over a period of days and reported the dog had serious symptoms of anticoagulant poisoning.⁷⁵

2007 (Bakersfield area, California): A San Joaquin kit fox, an endangered species, was found dead. High level of brodifacoum, a SGAR, coupled with extensive internal hemorrhaging made it highly probable that the fox died from the anticoagulant.⁷⁶

2007 (Golden Gate Park, San Francisco, California): A red-shouldered hawk, two red-tailed hawks, and a red fox were found dead in the park after eating rats poisoned by difethialone, a SGAR. All their deaths were probably caused by the rodenticide.⁷⁷

2007 (San Diego, Fresno, Kern, and Tulare Counties, California): A study of anticoagulant rodenticides in raptors analyzed livers from 96 birds discovered dead in one urban and three rural counties. The tested raptors included 4 American kestrels, 21 barn owls, 1 burrowing owl, 12 Cooper’s hawks, 7 great horned owls, 1 northern harrier, 22 red-tailed hawks, 15 red-shouldered hawks, 9 sharp shinned hawks, and 1 Swainson’s hawk. Of the 53 raptors from San Diego County, anticoagulants were detected in 92%. Some had multiple anticoagulants—all SGAR. Of the 43 raptors from the three rural counties, anticoagulants were detected in 69%. This study also examined 26 native (non-target) rodents from San Diego County and found 5 had anticoagulants—4 had SGAR and 1 had a first-generation anticoagulant.⁷⁸

January 27, 2010 (California): Three dogs exhibited signs of rodenticide poisoning. With treatment, 2 dogs recovered and 1 dog died. Blood analysis found diphacinone.⁷⁹

March 3, 2010 (California): Veterinarian reported female 2-year



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old yellow Labrador retriever died from consuming diphacinone-containing d-Con rodent poison product despite treatment. Dog had eaten out of the d-Con box. Owner did not think d-Con would be poisonous to the dog, but only poisonous to rats and mice. The dog had been nursing her 8 puppies and the veterinarian was also concerned that the anticoagulant could have been passed to the puppies in their mother's milk.⁸⁰

2010 (National Guard base, California): California National Guard contacted the CDFG Pesticides Investigation Unit to determine if diaphacinone, a first-generation anticoagulant, used to kill ground squirrels was responsible for the death of a turkey vulture. The vulture had blood pooled in a wing joint and liver analysis found both brodifacoum, a SGAR, and diaphacinone. The vulture's death was probably the result of the SGAR.⁸¹

2010 (Madera County, California): A coyote found dead was suspected to have been intentionally poisoned. The coyote had no signs of physical trauma. Liver analysis detected brodifacoum residues.⁸²

2010 (California): USDA staff contacted CDFG Pesticides Investigations Unit about a pig who had large streaks of black dye-like material in her mammary tissue. Analysis of the tissue detected diphacinone, a SGAR, which was highly probable cause of death.⁸³

2010 through 2012 (Marin County and nearby areas, California): WildCare Wildlife Rehabilitation Center tested predatory animal patients for rodenticide exposure. Of 138 animals tested, 75.6% were positive. Just in 2012, they found that 9 barn owls, 2 Cooper's hawks, 15 great horned owls, 1 red-shouldered hawk, 6 red-tailed hawks, 5 screech owls, 3 spotted owls, 4 turkey vultures, 4 crows, 1 raven, 20 gray foxes, 9 opossums, 16 raccoons, 9 striped skunks, 1 coyote, and 1 western gray squirrel had rodenticide in their tissues.⁸⁴

2011 (urban high school campus, California): Four San Joaquin kit foxes, members of an endangered species, were found dead and necropsied. Brodifacoum, a SGAR, was found in all four foxes' livers and bromadiolone, a SGAR, was also found in one fox's



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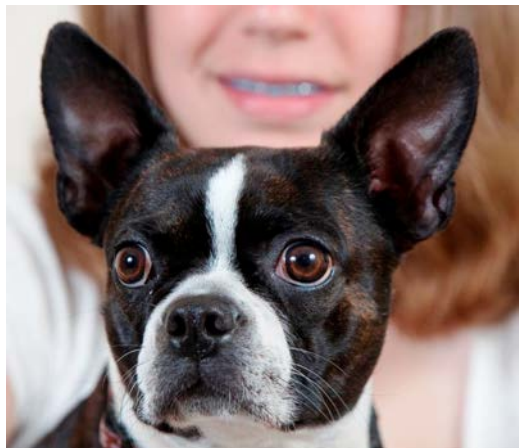


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liver.⁸⁵

2011 (Antioch, California): An incapacitated barn owl chick was found on a sidewalk and died the next day despite treatment. Necropsy found extensive bleeding on the wings and back. Liver analysis found brodifacoum and bromadiolone, both SGAR, which were highly probable cause of death.⁸⁶

2011 (Berkeley, California): A Cooper's hawk was found dead in a pool of blood on a sidewalk. Toxicology testing detected brodifacoum and diphacinone, both SGAR, which were probably the cause of death.⁸⁷

2011 (California): USDA Wildlife Services reported two pigs with black streaks in their mammary tissues. These tissues were tested and found to contain diphacinone, a SGAR, which was highly probable cause of these deaths.⁸⁸

2011 (California): A dead great horned owl was necropsied and liver analysis detected brodifacoum, a SGAR.⁸⁹

2012 (California): An avocado and orange farmer hired a pest control company to control rats. The company used brodifacoum until the farmer's golden retriever was found dead with confirmed brodifacoum, a SGAR, poisoning. Over a three-year period, other non-target wildlife were found dead on the farm as well.⁹⁰

2012 (Davis, California): Veterinarians at the University of California issued a press release to warn pet owners about rat poisons in the face of a spike in accidental poisonings. In the last 2 weeks of August alone, they diagnosed and treated 6 canine cases of rodenticide poisoning. A recent patient, 1-year old Belgian Malinois named Mocha from Winters, had gotten into d-CON. Luckily, Mocha responded well to treatment and was able to go home.⁹¹

Prepared March 2013

¹U.S. EPA OPP *Risk Mitigation Decision for Ten Rodenticides* May 28, 2008.

²U.S. EPA OPP *Potential risks of nine rodenticides to birds and nontarget mammals: A comparative approach*. July 2004.

³Eason, C.T., E.C. Murphy, G.R.G. Wright, and E.B. Spurr. 2002. Assessment of risks of brodifacoum to non-target birds and mammals in New Zealand. *Ecotoxicology* 11:35-48.



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- ⁴U.S. EPA OPP *Potential risks of nine rodenticides to birds and nontarget mammals: A comparative approach*. July 2004.
- ⁵Bartos, Monica, Sylvie Dao, Dale Douk, Stephanie Falzone, and Eric Gumerlock, Stephanie Hoekstra, Kaitlin Kelly-Reif, David Mori, Chay Tang, Cassandra Vasquez, Jennifer Ward, Sarah Young, Anita T. Morzillo, Seth Riley, and Travis Longcore. (2012) "Use of anticoagulant rodenticides in single-family neighborhoods along an urban-wildland interface in California," *Cities and the Environment (CATE)*: Vol. 4: Issue 1, Article 12.
- ⁶Federal Register Vol. 78, No. 24, Tuesday, February 5, 2013 pgs. 8123-8128
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