

2024 IOWA RABIES REPORT

PUBLISHED OCTOBER 2025

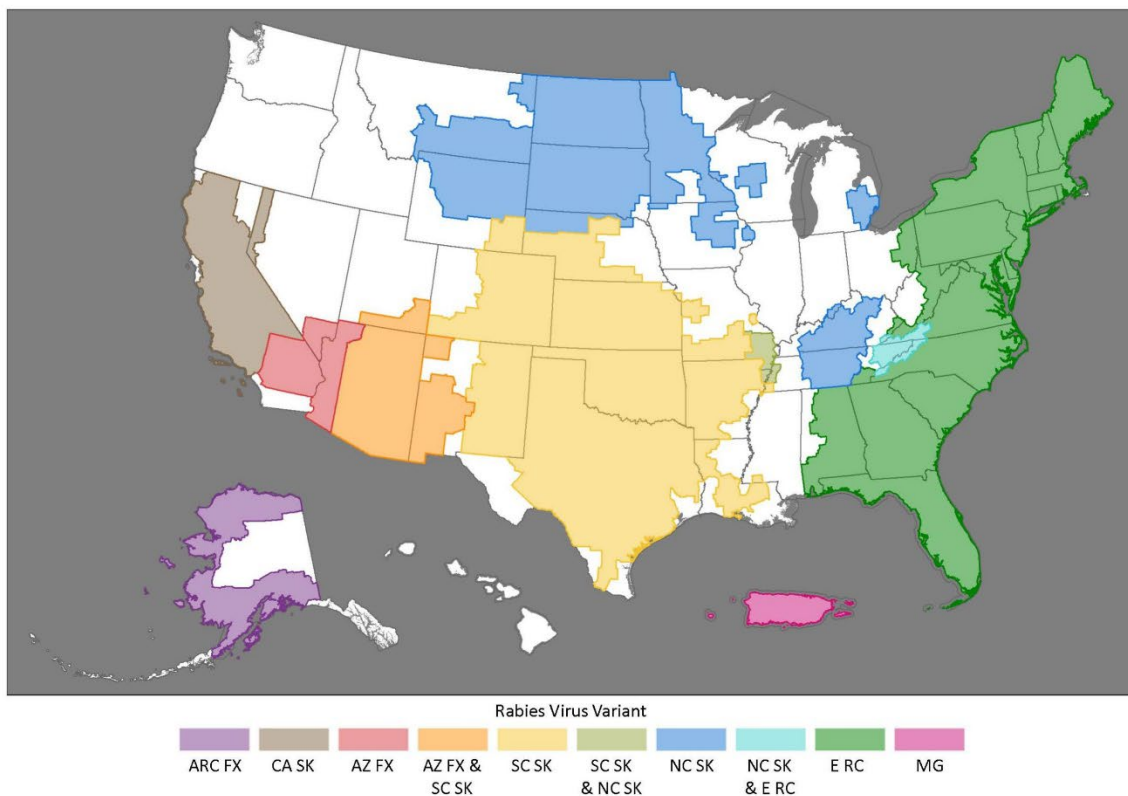


Health and
Human Services

Introduction

Rabies control and surveillance in Iowa and the U.S. represents an ongoing animal and public health success, going back decades. Globally, rabies kills 70,000 people worldwide, with dogs causing 99% of human rabies deaths outside the U.S. whereas fewer than 10 people in the U.S. die from rabies each year, a dramatic decline from 1960, due to robust prevention efforts by animal and public health experts. Efforts such as vaccination of pets and animal control programs, public health tracking and testing of human and animal rabies cases, and the availability of rabies-related medical care called post-exposure prophylaxis (PEP) account for this reduced rabies incidence.

Since the start of the twentieth century, the common rabies reservoir in the U.S. shifted from dogs to wildlife; the canine rabies variant was declared eliminated from the U.S. in 2007. Currently, seven rabies variants circulate among terrestrial (land) animal populations in the U.S. and U.S. territories.



ARC FX = Arctic Fox, CA SK = California Skunk, AZ FX = Arizona Gray Fox, SC SK = South Central Skunk, NC SK = North Central Skunk, E RC = Eastern Raccoon, MG = Mongoose

Historically only the North Central Skunk variant is found circulating in terrestrial animals in Iowa. **However, the bat variant of rabies is found throughout the continental U.S., including in Iowa.**

The following report summarizes rabies surveillance in Iowa for 2024 in the greatest detail but also includes historical trends and statistics going back to the beginning of the twentieth century.

Animal Rabies in Iowa

In 2024, 20 cases of animal rabies were reported in Iowa. Eighteen bats and two skunks.

Positive Rabies Cases 2014-2024

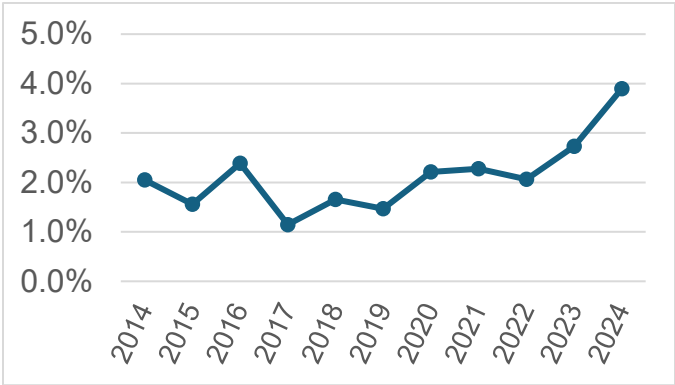
Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Bat	10	7	12	6	9	8	12	9	11	12	18	114
Cat	1	1	1	2	0	0	0	0	0	0	0	5
Cow	2	0	1	0	1	0	0	0	0	0	0	4
Dog	0	3	3	0	0	0	0	0	0	1	0	7
Horse	0	0	1	0	0	0	0	0	0	0	0	1
Skunk	2	1	1	2	0	0	0	0	0	1	2	9
Total	15	12	19	10	10	8	12	9	11	14	20	140

In 2024, 1,344 animals in Iowa were tested for rabies and 20 were confirmed positive (1.49%). Historically, the percent positive varies greatly by species (see *Historic Rabies Statistics* section for details). It is important to note that this data is greatly influenced by the number of animals tested. Many animals are tested because they have contact with humans or domestic animals or exhibit unusual behavior/clinical signs making them more likely to be infected with the rabies virus. For these reasons, the percentages should not be considered representative of the true distribution of disease within the animal population in Iowa. However, available data does show a slow, but steady increase in the number of positive bats detected over the previous ten-year period.

Percent Positive in 2024

Species	Positive	Total Tested	% Positive
Bat	18	463	3.89%
Skunk	2	6	33.33%

Percent Positive Bats 2014-2024

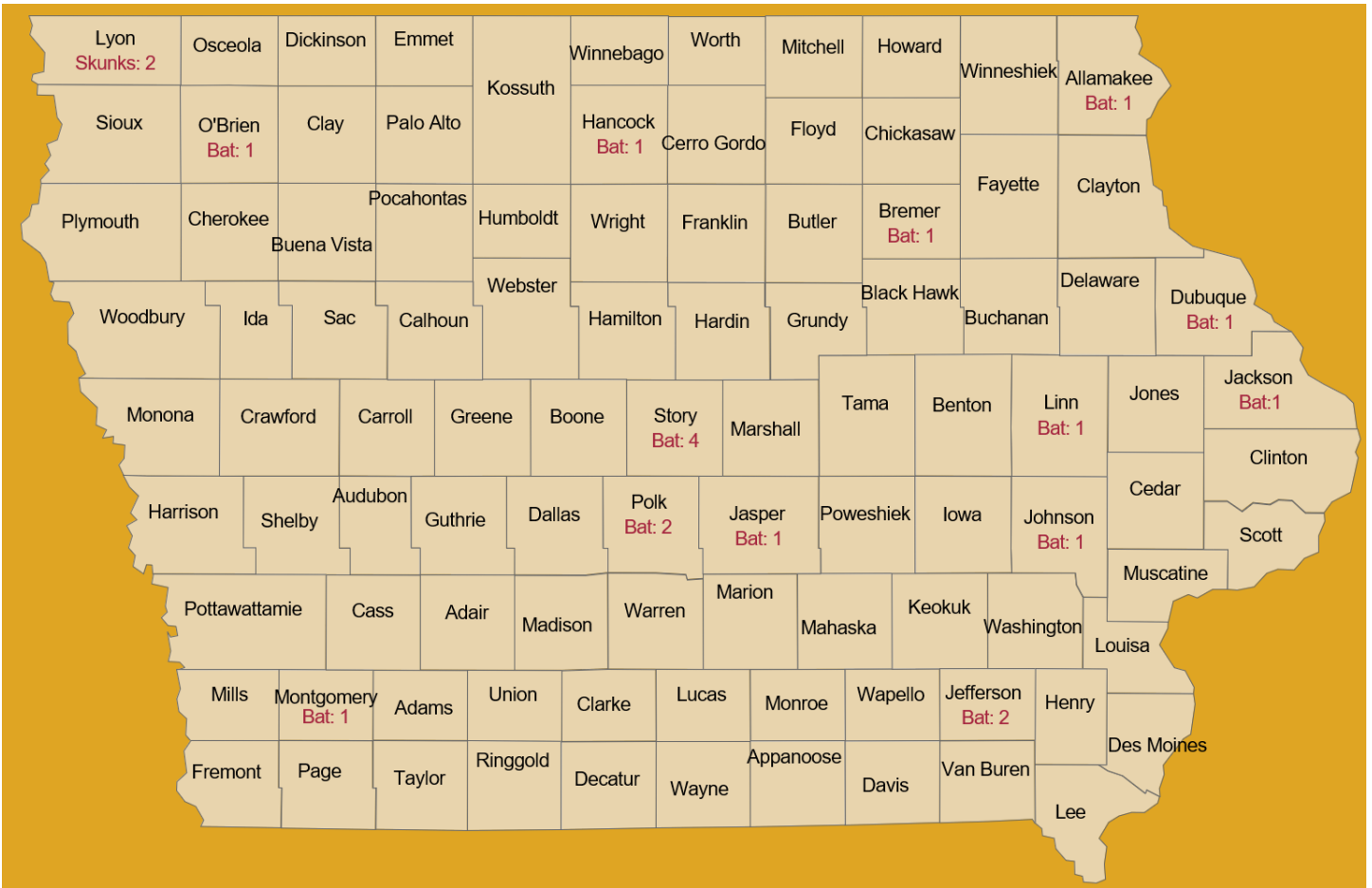


In Iowa, typically the most common bat species submitted for testing is the *Eptesicus fuscus* (big brown bat); however other bat species are occasionally tested.

Bat Species Tested for Rabies in 2024

Common Name (Species)	Positive	Total Tested	% Positive
Big brown bat (<i>Eptesicus fuscus</i>)	18	423	4.26%
Eastern red bat (<i>Lasiurus borealis</i>)	0	2	0.00%
Hoary bat (<i>Lasiurus cinereus</i>)	0	1	0.00%
Eastern pipistrelle (<i>Pipistrellus subflavus</i>)	0	1	0.00%
Species not identified	0	36	0.00%

2024 Rabies Map



Species	Count
Bat	18
Skunk	2

There are two laboratories that test animals for rabies in Iowa:

- State Hygienic Laboratory at the University of Iowa (tested 573 Iowa animals in 2024)
- Iowa State University Veterinary Diagnostic Laboratory (tested 771 Iowa animals in 2024)

Iowa animals are also periodically tested in out-of-state laboratories.

Human Rabies in Iowa

Since 1905, Iowa has recorded 29 human fatalities from rabies. The most recent case, traced to a bat-borne variant in 2002, followed a half-century hiatus after the previous death in 1951. However, differences in available technology, medical standards, public health surveillance, and reporting practices from the early twentieth century compared to modern times may have led to underreporting during the early nineteenth hundreds. Furthermore, long before tests were available in the U.S., rabies was so entrenched on the frontier that pioneers nicknamed skunks “phobia cats,” alluding to the hydrophobia, or the terror of water, that heralded the disease’s fatal end. Rabies even found its way into popular culture, playing the unseen adversary in the classic Disney film *Old Yeller*, underscoring how deeply this threat once resonated throughout the U.S.

It is estimated that 60,000 people in the U.S. receive PEP each year. In Iowa, human rabies vaccinations and immune globulin administration are collected as a voluntary datapoint in Iowa's Immunization Registry Information System (IRIS). Therefore, the exact number of Iowans that receive an entire PEP or PrEP series each year is unknown. However, in 2024 providers in Iowa reported administering 313 doses of RIG and 2,422 individuals receiving at least one rabies vaccination. Of these individuals, 43 received 4 or more vaccinations. The discrepancy in the number of individuals that received RIG (313) and the number that received 4 or more rabies vaccinations (43) is most likely due to all doses not reported in IRIS but may also reflect some individuals receiving vaccinations outside of Iowa. Additionally, there are likely some individuals that received a rabies product in Iowa that are not captured in the 2024 IRIS data.



Internationally, dog bites and scratches cause 99% of human rabies deaths. The same was true in the U.S. and in Iowa before jurisdictions established animal-control programs and mandatory dog vaccination. The long-standing success of dog vaccination and bite-prevention efforts makes routine pre-exposure rabies vaccination of the general public unnecessary.

Why has rabies decreased overall?

Animal vaccination programs are the corner stone of decreased rabies prevalence in the U.S. Since French scientist Louis Pasteur's 1885 breakthrough, rabies vaccines have evolved from rudimentary preparations to modern, safe, and effective products. In the 1920s, the first licensed canine vaccine prompted states to start requiring dog vaccination, licensing, leash laws, and humane stray removal, driving U.S. canine rabies cases from over 8,000 in 1946 to fewer than 100 by the late 1990s. This success culminated in the CDC's declaration that the canine rabies virus variant was eliminated from the U.S. in September 2007.



In 1965, Iowa introduced its first statewide requirement for canine rabies vaccination, now codified in Iowa Code § 351.33. Before then, no statewide provision existed, but some local jurisdictions set their own rules. The City of Des Moines led the way in 1950 with Ordinance No. 5226, requiring every dog within city limits to receive a rabies vaccination.

Vaccination of domestic animals shifted most rabies risk in the U.S. to wildlife as the primary reservoir, with bats now the leading source of human rabies deaths. Alongside increasing bat-associated risk, a raccoon rabies variant originally confined to South Florida was inadvertently introduced into West Virginia in 1977, spreading northward through the Mid-Atlantic and New England, with detections of rabies in raccoons now accounting for the highest number of wildlife detections in the U.S. annually next to bat detections. To halt further expansion of the raccoon variant, since 1995 USDA APHIS Wildlife Services annually distributes oral rabies vaccine baits east of the Appalachian Mountains, creating an immunological barrier protecting the Midwest and West Coast from the raccoon variant. Yet the September 2023 detection of the raccoon variant in a stray kitten in Omaha, likely a human-mediated translocation event, underscores that the raccoon rabies variant remains a threat beyond the East Coast and to Iowa.

As prevalence of the raccoon variant has increased in the Eastern U.S., the skunk variant has declined in the upper Midwest primarily due to a combination of animal and public health strategies. High levels of transmission of the skunk variant has been limited by widespread vaccination of

domestic animals, which acts as a barrier to ongoing spread. However, another contributing factor is the natural ebb and flow of rabies in wildlife populations, with case numbers decreasing after a period of high prevalence as the disease reduces the number of susceptible animals. Creating the potential that the low number of detections in skunks could represent the low point in a cycle that will rebound in the future.

Furthermore, while U.S. efforts started in the twentieth century eventually eliminated the canine variant, shifting risk to mainly wildlife variants, the canine variant remains the most common variant worldwide and a persistent threat to the U.S. from reintroduction in imported dogs. Therefore, maintaining animal vaccination and control efforts not only protects people and pets but avoids costly post-exposure treatments while preserving a century of hard-won progress against this uniformly fatal disease. Demonstrating why ongoing investment in animal vaccination, human prophylaxis, wildlife surveillance, and One Health partnerships is essential to safeguard U.S. animal and public health.

Historic Rabies Statistics


From 1905 through 2024, 14,644 mammals tested positive for rabies in Iowa. Historically, rabies has been detected in skunks more than any other species, reflecting the endemicity of the North Central Skunk Variant in this region of the U.S. Due to limitations on the consistency of data retained prior to the twenty-first century, it is not possible to calculate the percent positive for each species tested from 1905 to present in Iowa.

Percent of Cumulative Positive Results 1905-2024

Species	Count	Percent
Skunks	6,690	45.7%
Farm Animals	3,368	23.0%
Dogs	2,176	14.9%
Cats	1,341	9.2%
Bats	713	4.9%
Foxes	124	0.8%
Other Wildlife	110	0.8%
Raccoons	93	0.6%
Humans	29	0.2%

Of note, the most commonly found domestic species to carry rabies historically in Iowa is cattle. From 1970 through 1996, more cattle were found with rabies in Iowa than any other domestic animal. Prior to 1970, all farm animal data was aggregated as one category therefore it is not possible to parse out cattle from other livestock.

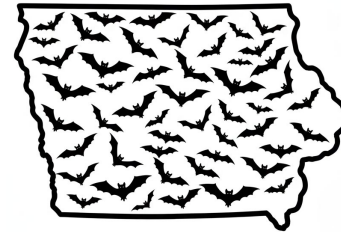
Bats are the only species that have consistently tested positive on an annual basis since 1974, with the most recent year of detection for other species varying, likely due to varying regional trends in the U.S. and the impact of continued animal health and control efforts.



Prior to 1952, dogs were the most commonly reported rabid animal in Iowa. Most human rabies deaths (96.6%) in the state occurred prior to 1952, with a death in 1951 linked to exposure from a rabid dog.

Most Recent Year of Detection

Species	Year
Bat	Annually
Skunk	2024
Dog	2023
Cow	2018
Cat	2017
Horse or donkey	2016
Fox	2010
Squirrel	2009
Badger	2003
Human	2002
Sheep or goat	2000
Raccoon	2000
Pig	1997
Llama	1996
Groundhog	1996
Elk	1996
Chipmunk	1994
Ferret	1987
Coyote	1982
Muskrat	1981
Weasel	1978
Mink	1971
Wolf	1938



#Batsoflowa

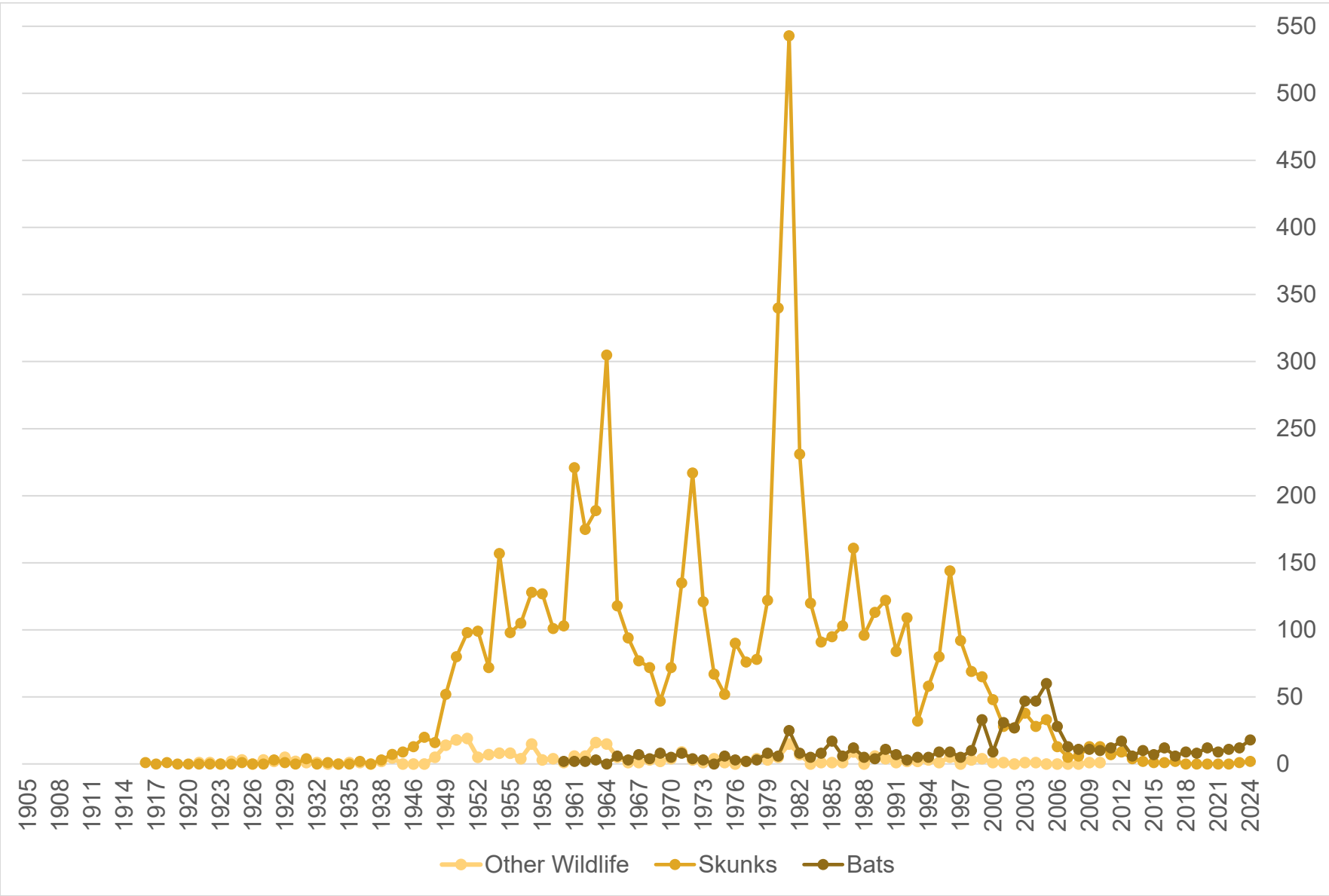
The first rabid bats in Iowa were detected in 1960, seven years after rabies was first reported in a bat in the U.S. The first rabid bat detected in the U.S. was found in Florida during 1953. Prior to this rabies in bats was only associated with vampire bats in Central and South America. At the time scientists did not think the insectivore bats common in the U.S. could carry rabies or pose a rabies risk to people. This changed in the 1950s when reports of insectivore bats attacking people started coming to the attention of U.S. public health officials. Since 1960, positive bats have been detected in Iowa yearly except for 1974 and 1964.

While bats are now the species most commonly found with rabies in Iowa, skunks were historically the species with the highest number of positive results.

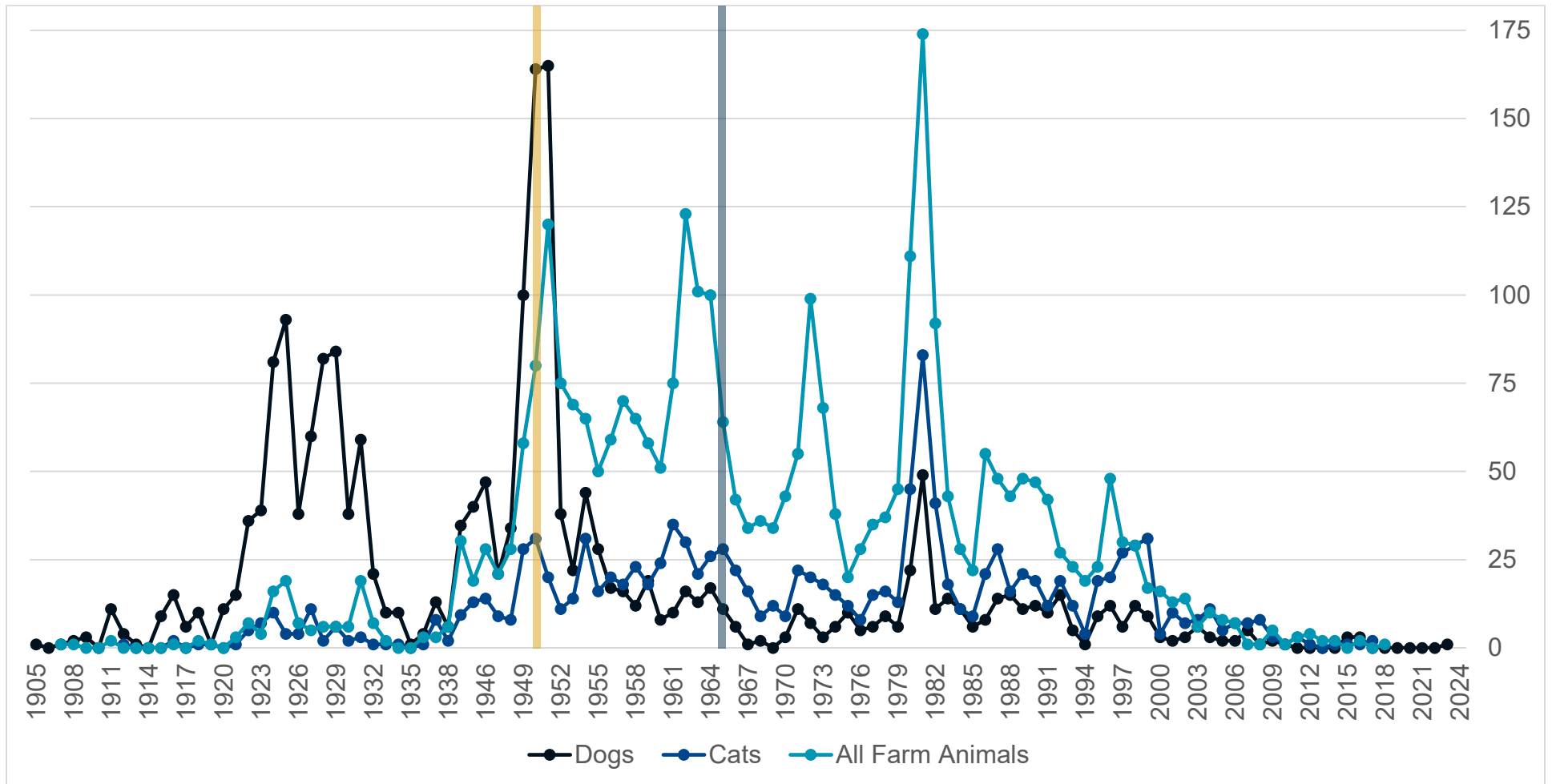
The next two pages present trends from all available Iowa data covering 1905 through 2024. They show the two wildlife species most frequently found with rabies in the state, bats and skunks, and combine all farm animals into a single aggregated category.

Following these trendlines is a decade-by-decade breakdown moving backwards from the 2010s to the 1970s. Because cattle have historically made up more than 75 percent of farm animal rabies detections in Iowa, cattle are shown as a separate category for each decade. For each decade the report also shows the estimated financial value of cattle lost, expressed in 2025 inflation-adjusted dollars, with valuation assistance from the Center for Agricultural and Rural Development at Iowa State University. These loss estimates reflect only sales value and do not include additional costs such as veterinary care, disposal, or replacement, for which consistent data is not available. They also do not account for cattle that developed rabies and died without testing; therefore, the estimates should be treated as a minimum estimate on the financial impact to Iowa.

Rabid Wildlife Counts 1905-2024



Rabid Domestic Animal Counts 1905-2024

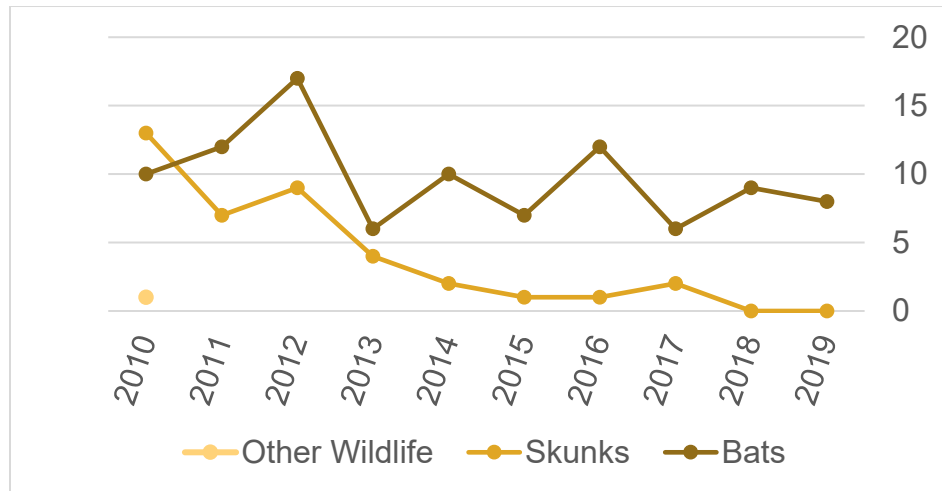


1950: City of Des Moines Ordinance for vaccination of dogs

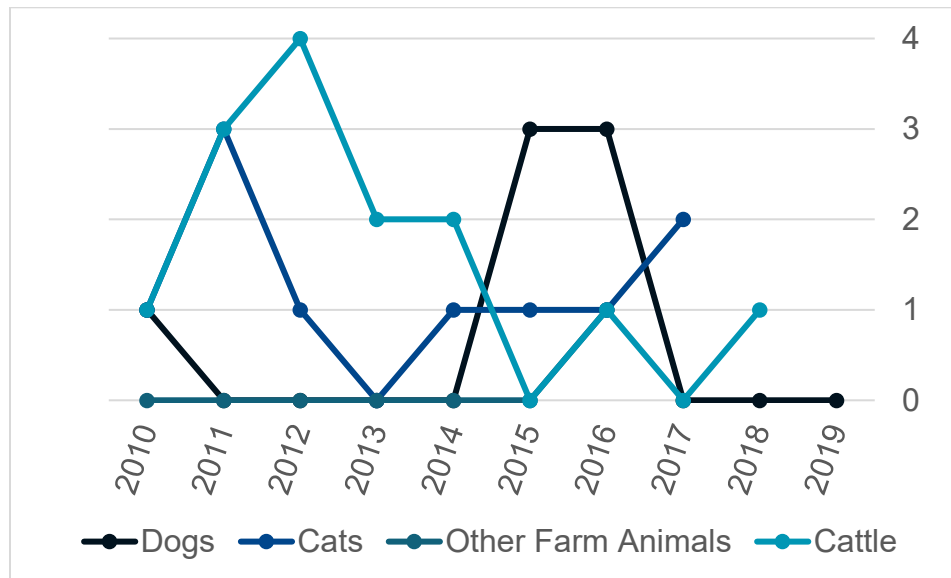
1965: Iowa Code for statewide vaccination of dogs

Rabies in the 2010s

Rabid Wildlife Counts 2000-2009

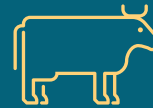


Rabid Domestic Animal Counts 2000-2009



Bats

- Most rabid wildlife
- 96 tested positive



Cattle

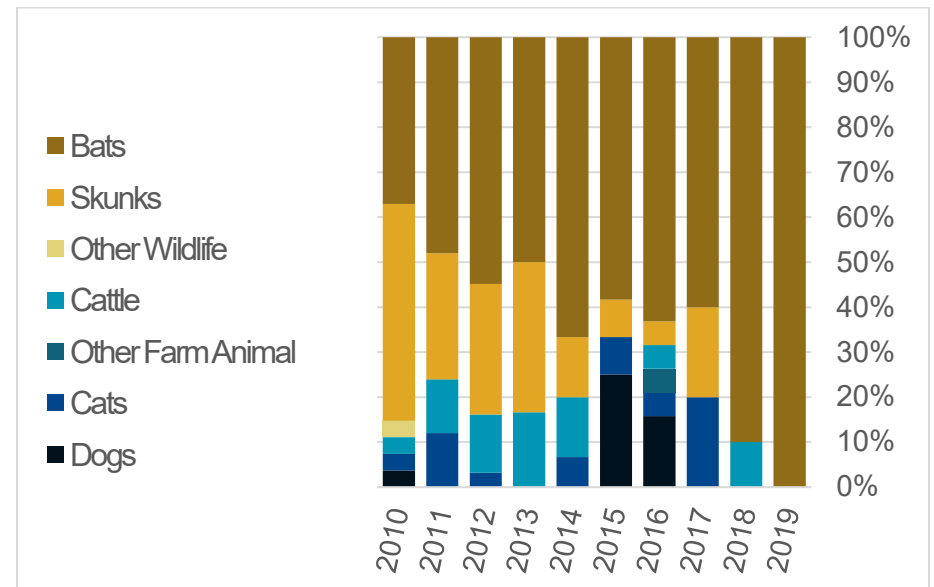
- Most rabid domestic animal
- 14 tested positive



\$18,457.65

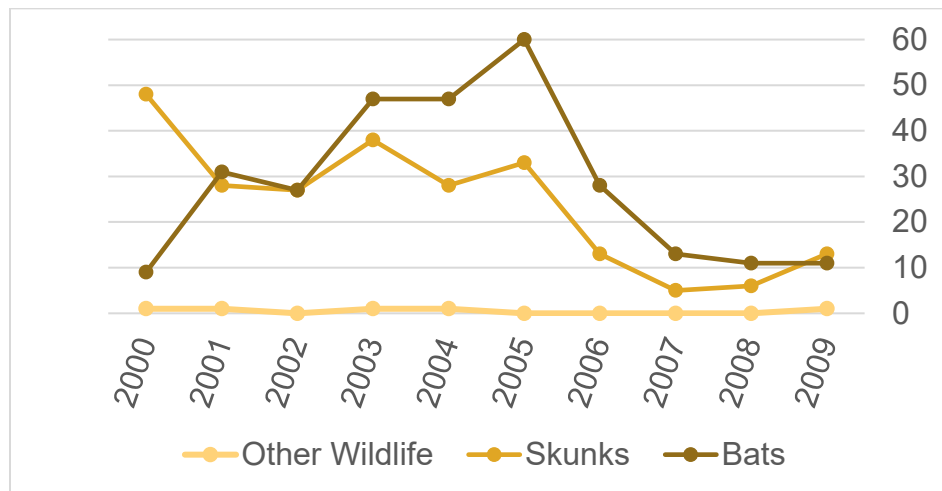
Market value of total cattle lost as measured in 2025 inflation-adjusted dollars

Proportion Positive of Total Positives 2000-2009

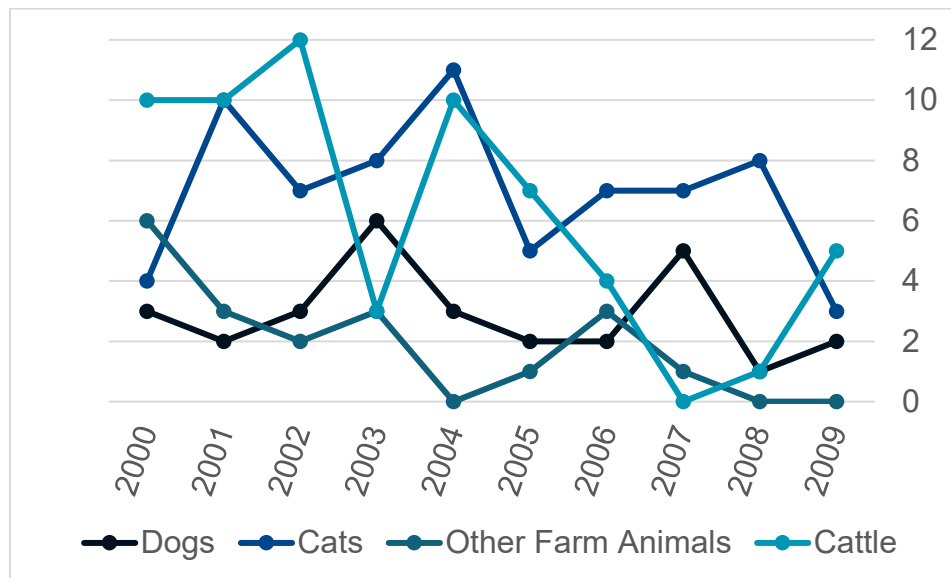


Rabies in the 2000s

Rabid Wildlife Counts 2000-2009



Rabid Domestic Animal Counts 2000-2009



Bats

- Most rabid wildlife
- 283 tested positive



Cats

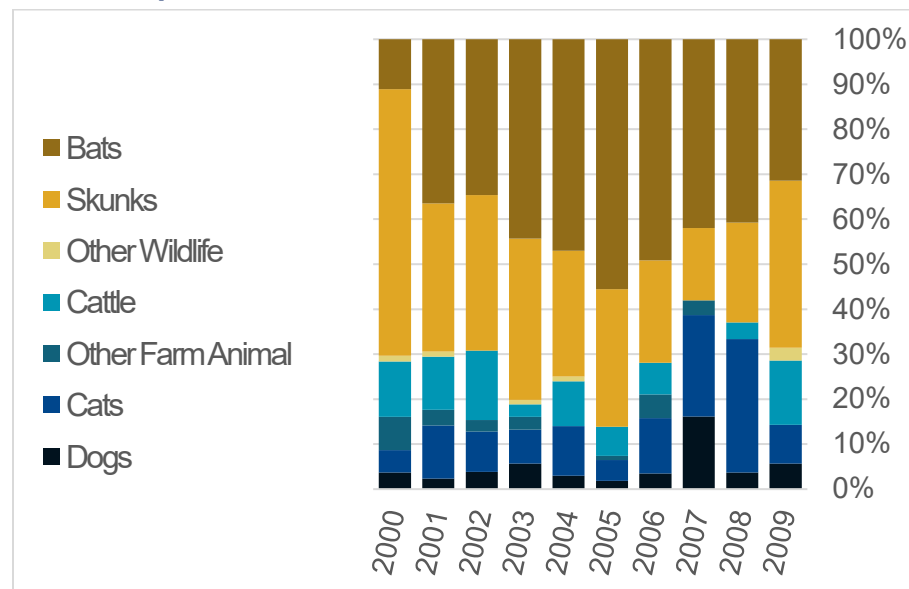
- Most rabid domestic animal
- 70 tested positive



\$53,798.49

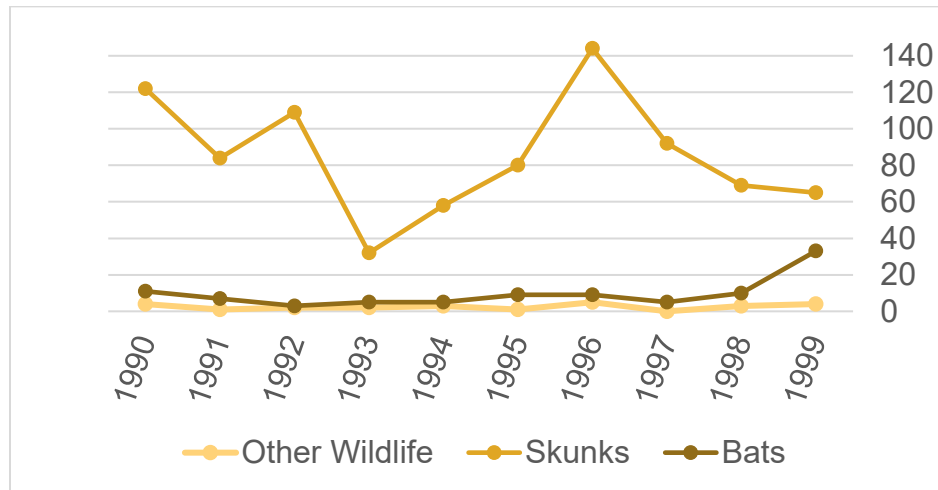
Market value of total cattle lost as measured in 2025 inflation-adjusted dollars

Proportion Positive of Total Positives 2000-2009

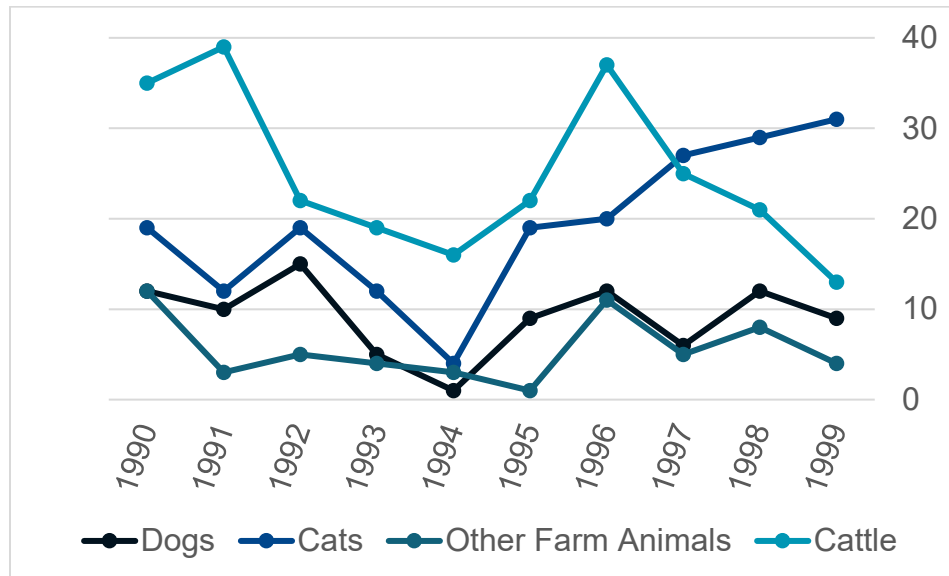


Rabies in the 1990s

Rabid Wildlife Counts 1990-1999

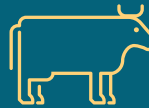


Rabid Domestic Animal Counts 1990-1999



Skunks

- Most rabid wildlife
- 855 tested positive



Cattle

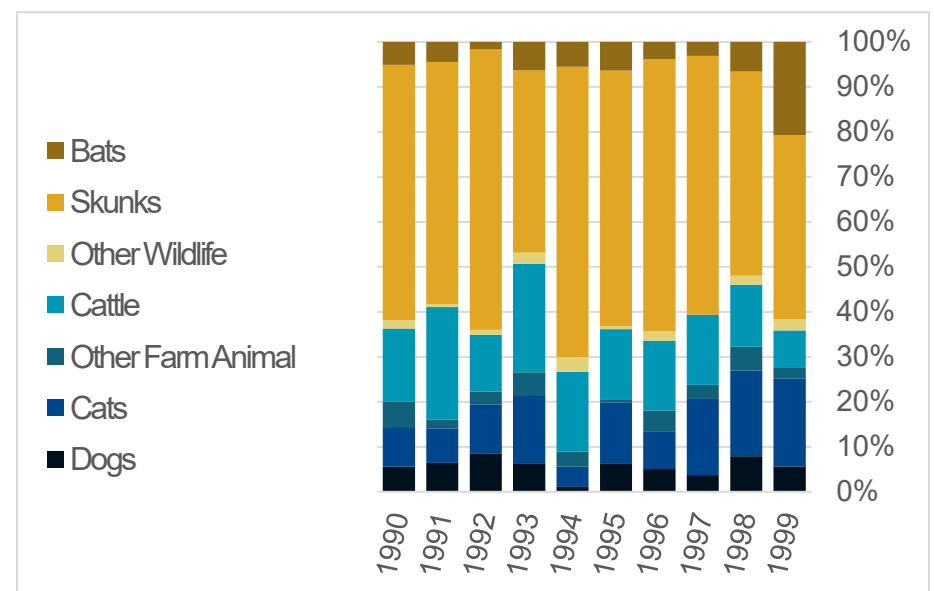
- Most rabid domestic animal
- 249 tested positive



\$220,255.57

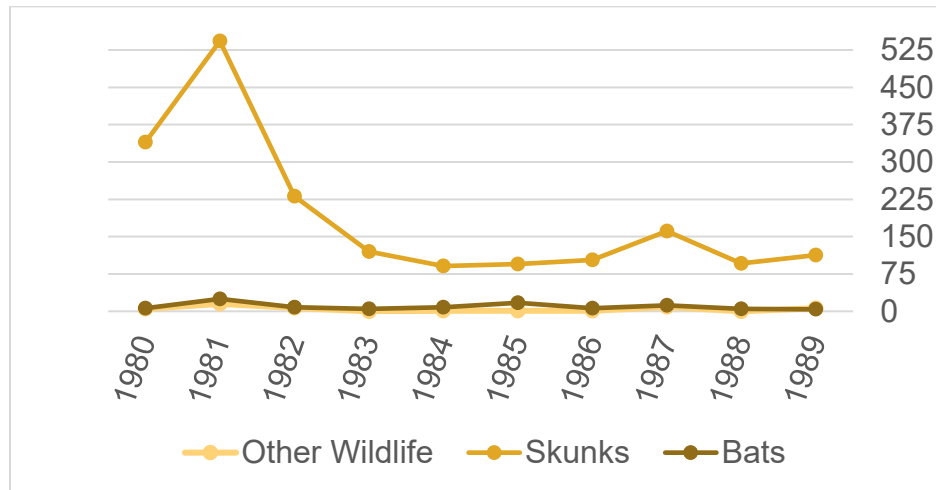
Market value of total cattle lost as measured in 2025 inflation-adjusted dollars

Proportion Positive of Total Positives 1990-1999

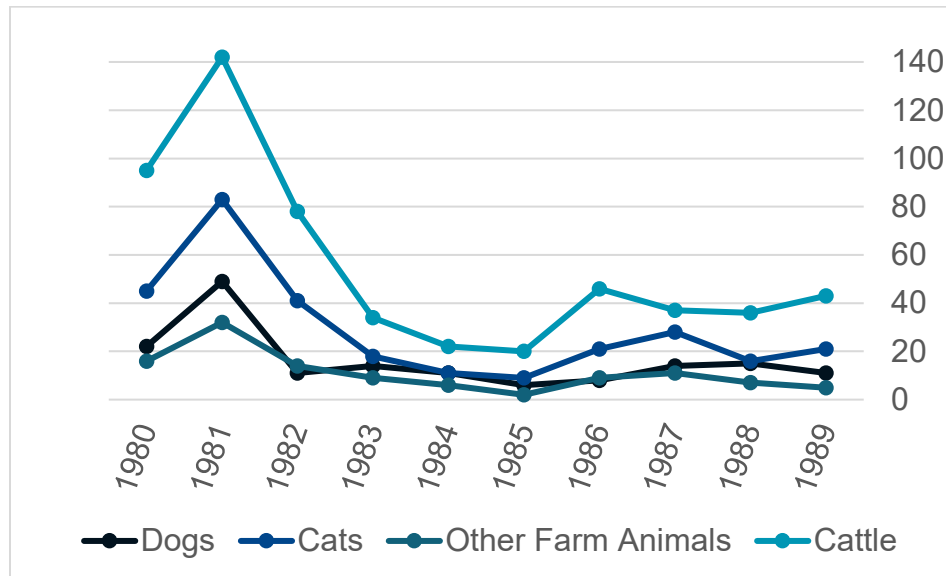


Rabies in the 1980s

Rabid Wildlife Counts 1980-1989

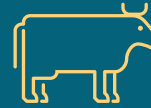


Rabid Domestic Animal Counts 1980-1989



Skunks

- Most rabid wildlife
- 1,888 tested positive



Cattle

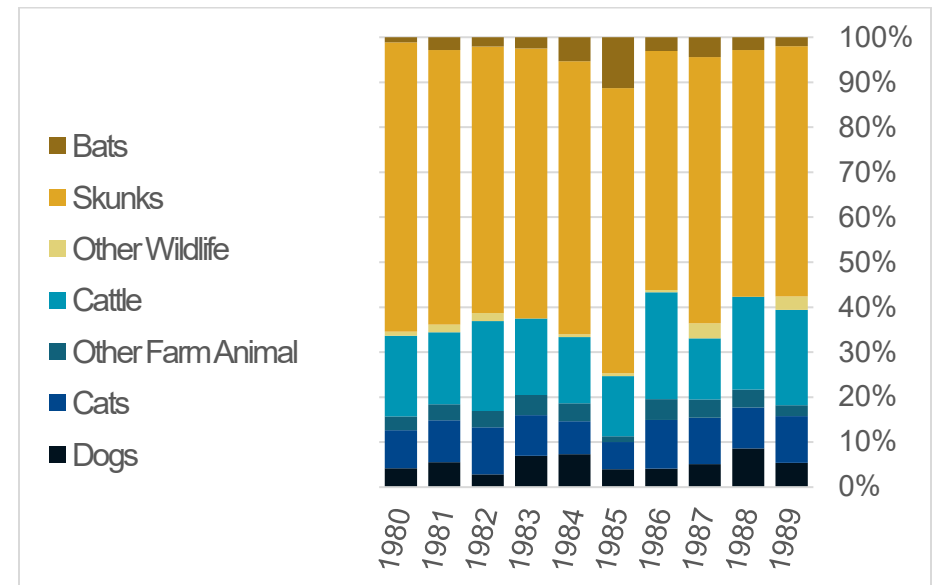
- Most rabid domestic animal
- 554 tested positive



\$554,235.62

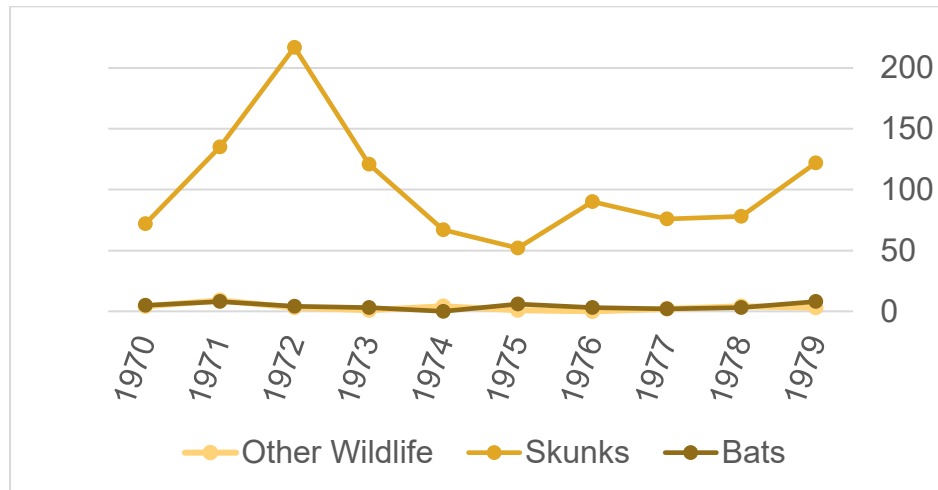
Market value of total cattle lost as measured in 2025 inflation-adjusted dollars

Proportion Positive of Total Positives 1980-1989

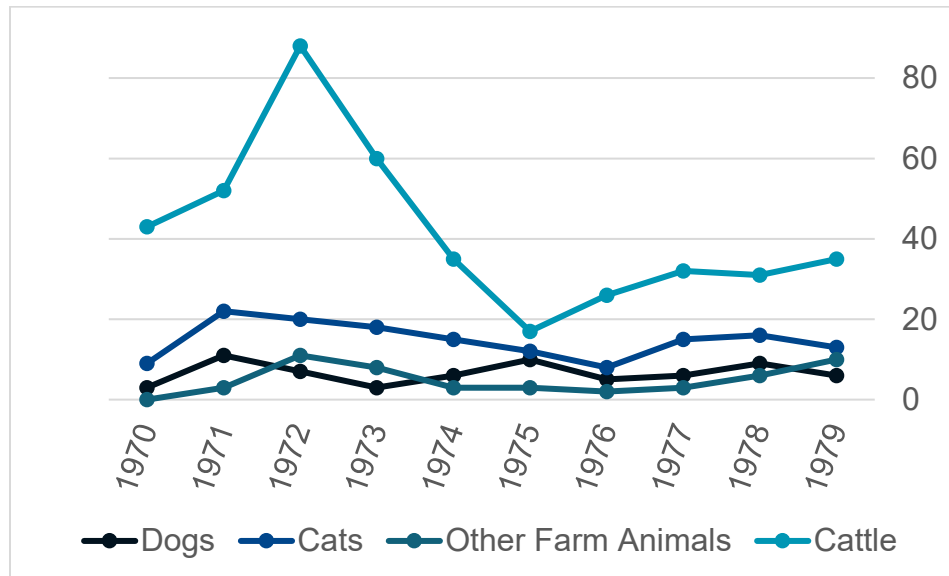


Rabies in the 1970s

Rabid Wildlife Counts 1970-1979

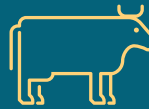


Rabid Domestic Animal Counts 1970-1979



Skunks

- Most rabid wildlife
- 1,030 tested positive



Cattle

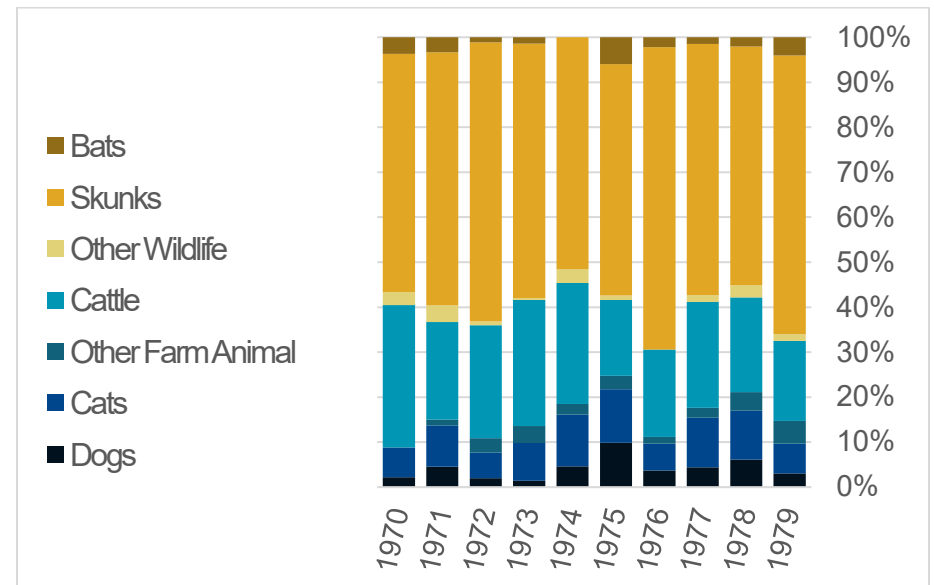
- Most rabid domestic animal
- 419 tested positive



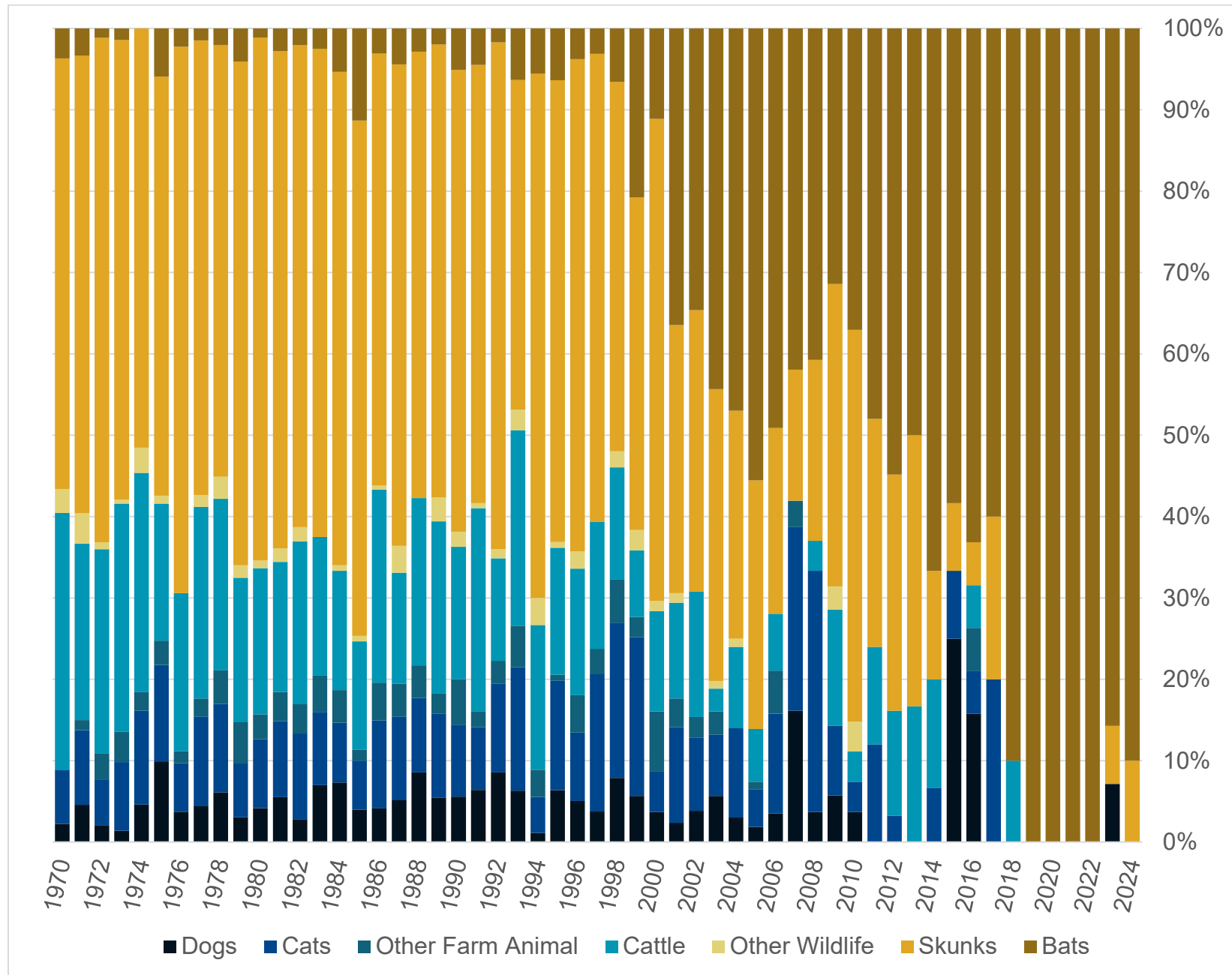
\$505,593.16

Market value of total cattle lost as measured in 2025 inflation-adjusted dollars

Proportion Positive of Total Positives 1970-1979



Proportion Positive of Total Positives 1970-2024



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Official historic annual Iowa rabies summaries are available from Iowa Publications Online, maintained by the State Library of Iowa (<https://publications.iowa.gov/>).

Acknowledgements

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