TEXAS Health and Human Services | Texas Department of State Health Services

Rabies in Animals, Texas - 2022

Prepared by Zoonosis Control

Purpose

This annual report provides clinical and epidemiological backgrounds on rabies, presents current and historical case data for rabies testing in Texas, and describes preventive measures implemented by the Texas Department of State Health Services for rabies containment.

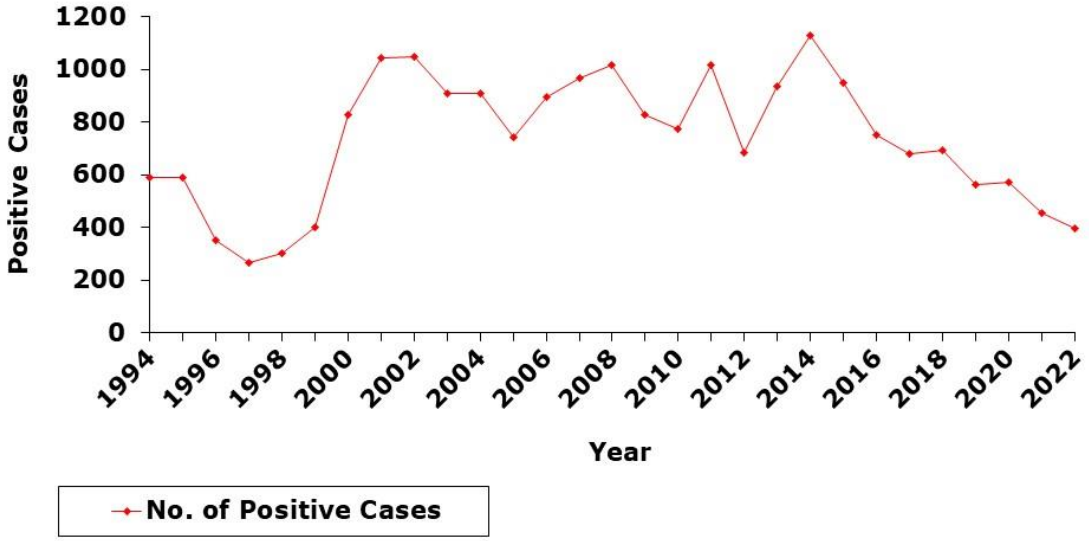
Background Summary

Zoonoses are diseases transmitted between animals and people. Rabies is a zoonotic disease in which the rabies virus infects the central nervous system of warm-blooded animals and almost universally results in death if postexposure prophylaxis (immunizing products to prevent disease) is not prescribed by a physician and administered with urgency. Transmission occurs when saliva containing the rabies virus is introduced into an opening in the skin, usually via the bite (or less likely a scratch) of a rabid animal. Though rare, exposure can also occur through infected saliva contacting mucous membranes. As defined in Texas law, high-risk animals for rabies include bats, skunks, foxes, raccoons, and coyotes. Bats and skunks are the primary reservoirs (hosts) for specific rabies virus variants (types) in Texas. Rabies infection in a species other than the reservoir species for the variant is considered "spillover." An example of spillover would be a cat infected with a skunk variant of rabies virus.

Case Analysis

In 2022, 395 (4%) of 8,976 animal specimens in Texas that were tested were positive for rabies (this report refers only to specimens confirmed as positive or negative). This was a 13% decrease in cases from the 455 cases confirmed in 2021. In 2022, there were 44 positive rabies cases per 1,000 specimens tested, which was down from 52 positive rabies cases per 1,000 specimens tested in 2021. The reason for yearly fluctuations in statewide rabies cases is difficult to assess. There are a variety of variables that can affect trends for the number of laboratory-confirmed rabid animals. Yearly totals for 1994 through 2022 are illustrated in Figure 1.

Figure 1. Positive Animal Rabies Cases:
Texas 1994 - 2022



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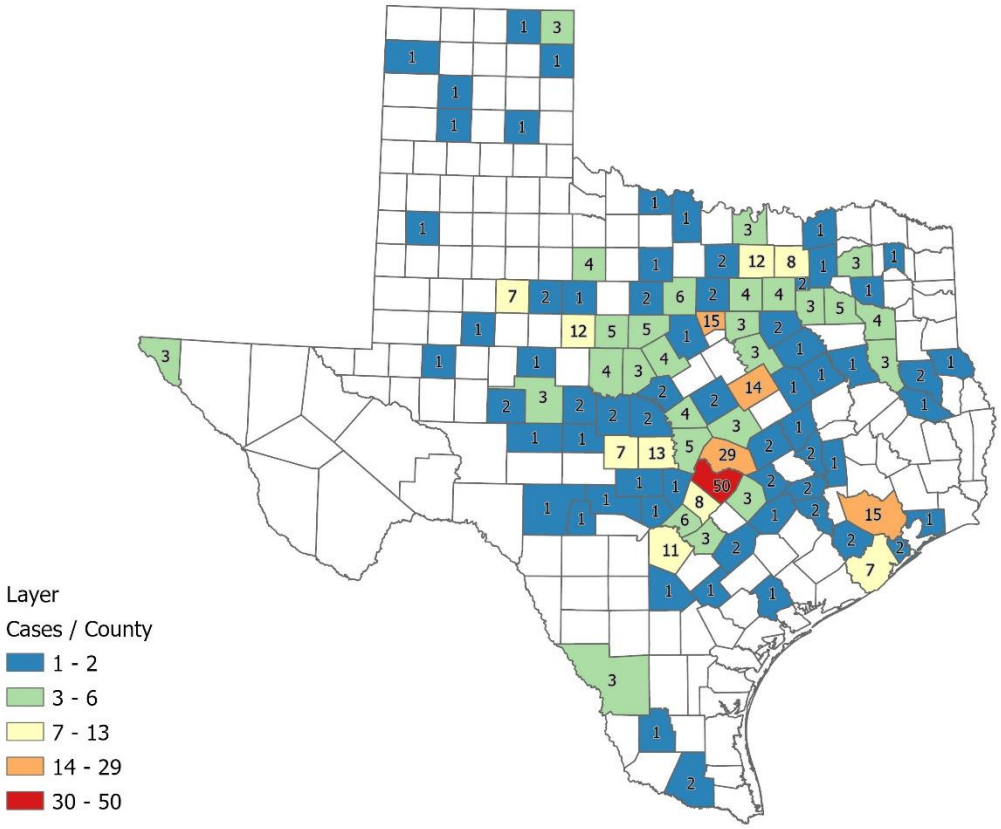
Discussion

During 2022, the highest monthly number of laboratory-confirmed rabies cases (63) occurred in April with skunks (29) being the predominant rabid species reported; May had the second highest number of cases (60) with skunks (24) being the predominant rabid species. For 2021, April also had the highest number of reported cases (67, including 38 skunks), and June and September had the second highest number (49 each, including 14 skunks and 30 bats, respectively, being the predominant rabid species).

Cases of rabies in 2022 were confirmed in 104 of the 254 Texas counties as shown in Figure 2 compared with 111 counties with reported cases in 2021. Travis County had the highest number of reported rabies cases per county statewide with 50 cases (49 of which were bats) in 2022; Williamson County had the second highest number of cases with 29 (16 of which were bats). In 2021, Travis County again had the highest number of reported cases with 41 (39 of which were bats), and Bexar County had the second highest with 23 (22 of which were bats).

Figure 2. Confirmed Cases of Animal Rabies (all species) by County, 2022



Rabid wildlife accounted for 345 (87%) of the confirmed cases throughout Texas in 2022; in 2021, rabid wildlife accounted for 401 (88%) of the confirmed cases (refer to Table 1).

Table 1. Confirmed Cases of Rabies in Wild Animals: Texas 2021 and 2022

	2021	2022
Bat	163	156
Bobcat	0	1
Cervid (Deer)	1	0
Fox	24	17
Raccoon	39	20
Skunk	174	151
Total	**401**	**345**

Bats were the primary source of positive cases reported in 2022 (40% of all positive cases). During 2022, 156 bats were confirmed positive for rabies compared with 163 (36% of all positive cases) in 2021. Of all bats tested for rabies, 10% were positive in 2022 and 9% were positive in 2021. Rabies in bats is enzootic (endemic in animals) in Texas; there are numerous bat variants of the rabies virus throughout the state.

During 2022, skunks had the second highest number of confirmed rabies cases with 151 (38% of all positive cases) compared with 174 (38% of all positive cases) in 2021. Of all skunks tested for rabies, 39% were positive in 2022 and 38% were positive in 2021. South-central skunk (SCS) remains an established variant of the terrestrial rabies virus in Texas. In 2022, rabies cases in which the SCS rabies virus variant could be confirmed included 149 skunks, 20 raccoons, 19 cats, 17 foxes, 16 dogs, 9 bovines, 2 equines, 1 caprine, and 1 rabbit.

Rabid domestic animals continue to be a concern because they are more likely to have contact with humans than rabid wildlife. In 2022, there were 50 reported rabies cases in domestic animals (13% of all positive cases); of these rabies cases, 20 were cats and 17 were dogs. In 2021, there were 54 reported rabies cases in domestic animals (12% of all positive cases); of these rabies cases, 28 were cats and 5 were dogs (refer to Table 2). Rabies vaccination of dogs and cats is required by state law in Texas; vaccination is also recommended for ferrets, wolf-dog hybrids, and livestock (vaccination is strongly advised for equines and other livestock that have frequent contact with people).

Table 2. Confirmed Cases of Rabies in Domestic Animals: Texas 2021 and 2022

	2021	2022
Bovine	17	9
Caprine	1	1
Cat	28	20
Dog	5	17
Equine	3	2
Rabbit	0	1
Total	**54**	**50**

Oral Rabies Vaccination Program

A canine rabies epizootic (an epidemic in animals) began in 1988 and ultimately involved 21 counties in South Texas. Statewide there were no reported cases with the domestic dog/coyote (DDC) variant of the rabies virus in 2022. The last reported case with the DDC rabies virus variant was in March 2004.

Similarly, a Texas gray fox rabies epizootic began in 1988, but it eventually involved 53 counties in West-Central Texas. Statewide there were no reported cases with the Texas fox (TF) variant of the rabies virus in 2022.

The last reported case with the TF rabies virus variant was in a bovine in May 2013; previous to this case, the last reported case was in May 2009.

To control the canine and gray fox rabies epizootics, the Texas Department of State Health Services initiated the Oral Rabies Vaccination Program (ORVP) for coyotes in South Texas in February 1995 and for gray foxes in West-Central Texas in January 1996. The goals of the ORVP were to create zones of vaccinated coyotes and gray foxes across the epizootic areas or, at a minimum, along the leading edges of the areas where these rabies variants were detected in order to halt the geographic spread of those variants and eventually eliminate the epizootics. Immunization was accomplished by aerial distribution of edible baits containing oral rabies vaccine. The programs have continued annually and are now combined into a maintenance zone along the Texas-Mexico border targeting reservoir species for the DDC and TF variants of the rabies virus, specifically coyotes and gray foxes, respectively. With the elimination of the DDC and TF variants from Texas, the ORVP now serves as an ongoing barrier to prevent reintroduction from Mexico.

Conclusion

Rabies in Texas is enzootic in animals with bats and skunks typically being the primary sources of positive cases. A yearly decrease in the number of reported cases, which can be caused by multiple variables, is not necessarily indicative that rabies cases are perpetually diminishing. Rabies is a disease of significant public health concern because it can be transmitted between animals and people. Education and awareness of the existence of rabies and how it is transmitted is paramount as it is nearly 100% fatal if administration of postexposure prophylaxis is not achieved in an urgent manner. State law requires vaccination against rabies for dogs and cats and recommends it for ferrets, wolf-dog hybrids, and livestock. The ORVP, which has coyotes and gray foxes as its target species, has successfully eliminated the DDC and TF rabies virus variants in Texas and continues to serve as a barrier for their reestablishment in the state.