

## Rabies in Animals, Texas - 2014

### Department of State Health Services Zoonosis Control

Rabies is a viral zoonosis affecting the central nervous system of warm-blooded animals.

Transmission occurs when saliva containing rabies virus is introduced into an opening in the skin, usually via the bite (or possibly scratch) of a rabid animal. Though rare, transmission can also occur through contamination of mucous membranes. Animals considered to be high risk for transmitting rabies in Texas include bats, skunks, foxes, coyotes, and raccoons. Bats and skunks are the primary reservoirs 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.

In 2014, 1,132 (9%) of 12,356 animal specimens in Texas that were tested (this report refers only to specimens confirmed as positive or negative) were positive for rabies. This was a 21% increase in cases from the 937 cases confirmed in 2013. In 2014, there were 92 positive rabies cases per 1,000 specimens tested, which was up from 78 positive rabies cases per 1,000 specimens tested in 2013. Yearly totals for 1994 through 2014 are illustrated in Figure 1.

During 2014, the highest monthly number of laboratory-confirmed rabies cases (165) occurred in April with skunks (105) being the predominant rabid species reported; September had the second highest number of cases (145) with bats (107) being the predominant rabid species. Cases of rabies were confirmed in 130 of the 254 Texas counties (Figure 2) compared with 123 counties with reported cases in 2013. Williamson County had the highest number of reported rabies cases

per county statewide with 163 cases in 2014, 154 of which were bats. In 2013, Williamson County also had the highest number of reported cases with 132 (130 of which were bats).

Rabid wildlife accounted for 1,069 (94%) of the confirmed cases throughout the state in 2014; in 2013, rabid wildlife accounted for 876 (93%) of the confirmed cases (Table 1). Bats were the primary source of positive cases reported in 2014 (45% of all positive cases). During 2014, 512 bats were positive for rabies compared with 437 (47% of all positive cases) in 2013. Of all bats tested for rabies, 17% were positive in 2014 and 14% were positive in 2013. Rabies in bats is enzootic in Texas; there are numerous bat variants of rabies virus throughout the state. In 2014, there was one identified case in which there was spillover of a bat rabies virus variant to a terrestrial animal; this case involved a fox with Brazilian free-tailed bat rabies virus variant.

Skunks had the second highest number of confirmed rabies cases with 504 (45% of all positive cases) in 2014 compared with 402 (43% of all positive cases) in 2013. Of all skunks tested for rabies, 46% were positive in 2014 and 48% were positive in 2013. South-central skunk (SCS) remains an established variant of terrestrial rabies virus in Texas. Rabies cases in 2014 in which the SCS rabies virus variant could be confirmed included 501 skunks, 26 raccoons, 22 cats, 21 foxes, 15 bovines, 14 dogs, 11 equines, 2 coyotes, 1 bobcat, and 1 goat.

Rabid domestic animals continue to be a concern because they are more likely to have contact with humans than are rabid wildlife. In 2014, there were 63 reported rabies cases in domestic animals (6% of all positive cases); of these rabies cases, 22 were cats and 14 were dogs (Table 2). In 2013, there were 61 reported rabies cases in domestic animals (7% of all positive cases);

of these rabies cases, 23 were cats and 16 were dogs.

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 2014. The last reported case with the DDC rabies virus variant was in March 2004.

Similarly, a Texas gray fox rabies epizootic also 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 2014. The last reported case with the TF rabies virus variant was in May 2013; previous to this case, the last reported case was in May 2009.

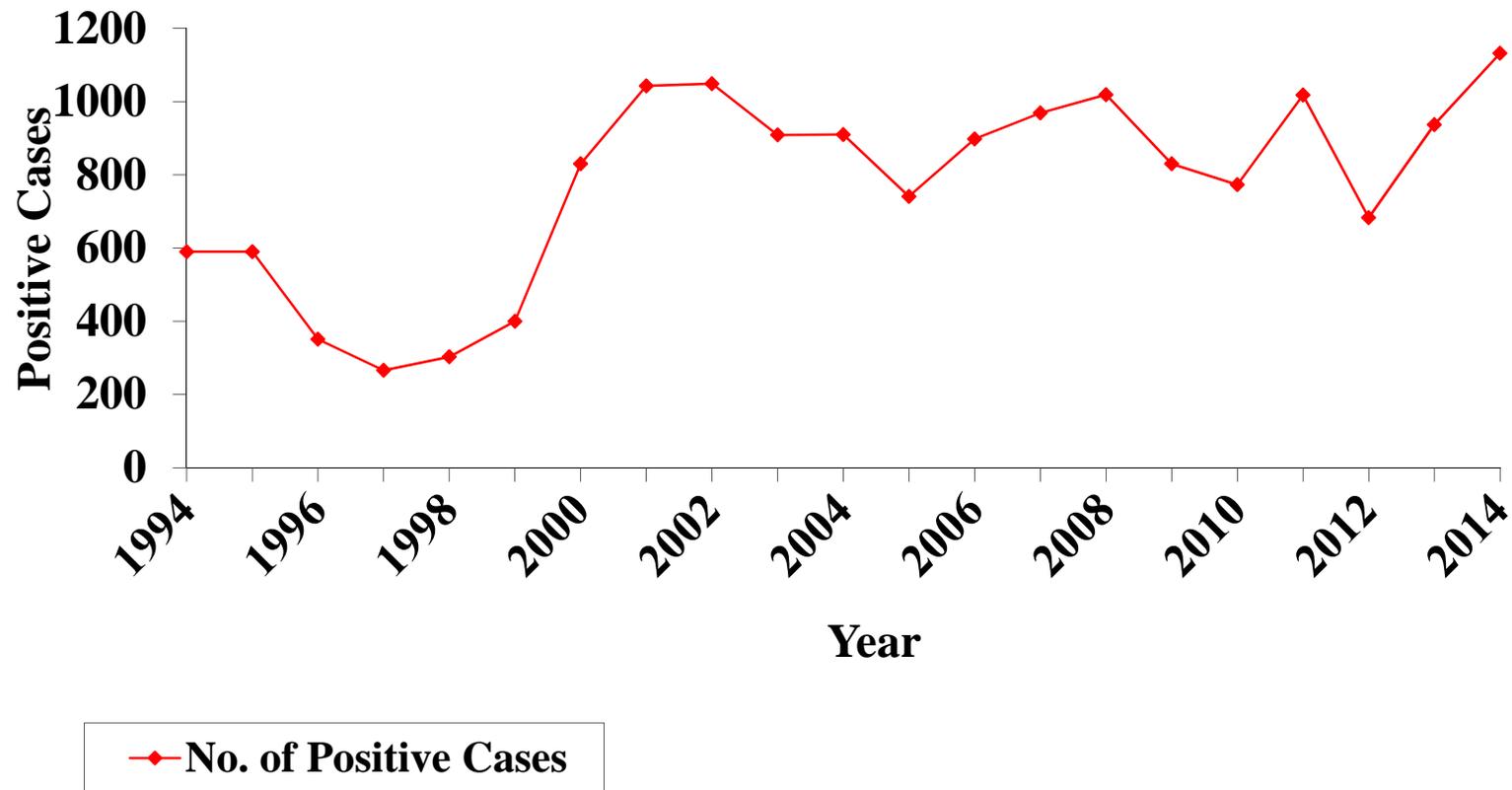
To implement control of the canine and gray fox rabies epizootics, the Oral Rabies Vaccination Program (ORVP) for coyotes in South Texas was initiated in February 1995, and the ORVP for gray foxes in West-Central Texas was initiated in January 1996; the programs have continued annually. These programs target reservoir species for the DDC and TF variants of the rabies virus, specifically coyotes and gray foxes, respectively. Immunization is accomplished by aerial distribution of edible baits containing oral rabies vaccine. 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 eventually eliminate the epizootics. With the elimination of the DDC variant from Texas, the ORVP now serves as an ongoing barrier to prevent reintroduction from Mexico. The program targeting the TF variant currently consists of a border maintenance zone and a contingency zone around the

May 2013 case in a bovine from Concho County.

In 2014, the skunk ORVP study area to determine the effectiveness against the skunk variant of the rabies virus was expanded from the three counties in the 2012 and 2013 proof-of-concept projects to all or part of seventeen counties in East-Central Texas. Analysis of the results is ongoing.

As part of the monitoring and evaluation of the ORVP, brainstems and other samples from target species are collected for enhanced surveillance and post-ORVP surveillance. During 2014, 673 brainstems were tested for rabies; four (2 skunks, 1 raccoon, and 1 fox) tested positive. All four were infected with the SCS rabies virus variant and are included in the totals reported for 2014. Due to only the brainstems being tested for the remaining 669 animals, these specimens did not meet the criteria to be included among the confirmed negatives reported for 2014.

Figure 1. Positive Animal Rabies Cases:  
Texas 1994 - 2014





**Table 1. Confirmed Cases of Rabies in Wild Animal Species:  
Texas 2013 and 2014**

<b>Species</b>	<b>2013</b>	<b>2014</b>
Bats	437	512
Bobcat	0	1
Coyotes	0	2
Foxes	10	22
Raccoons	27	28
Skunks	402	504
<b>Total</b>	<b>876</b>	<b>1,069</b>

**Table 2. Confirmed Cases of Rabies in Domestic Animal Species:  
Texas 2013 and 2014**

<b>Species</b>	<b>2013</b>	<b>2014</b>
Bovines	13	15
Cats	23	22
Dogs	16	14
Equines	7	11
Goats	2	1
<b>Total</b>	<b>61</b>	<b>63</b>