Rabies in Animals, Texas - 2016

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 2016, 751 (7%) of 11,485 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% decrease in cases from the 952 cases confirmed in 2015. In 2016, there were 65 positive rabies cases per 1,000 specimens tested, which was down from 77 positive rabies cases per 1,000 specimens tested in 2015. Yearly totals for 1994 through 2016 are illustrated in Figure 1.

During 2016, the highest monthly number of laboratory-confirmed rabies cases (105) occurred in March with skunks (56) being the predominant rabid species reported; April had the second highest number of cases (94) with bats (42) being the predominant rabid species. In contrast, April of 2015 had the highest number of reported cases (153, including 81 skunks), while March had the second highest number (116, including 77 skunks). Cases of rabies were confirmed in

116 of the 254 Texas counties (Figure 2) compared with 115 counties with reported cases in 2015. Travis County had the highest number of reported rabies cases per county statewide with 116 cases in 2016, 114 of which were bats; Williamson County had the second highest number of cases with 101 (92 of which were bats). Similarly, in 2015, Travis County had the highest number of reported cases (104, including 101 bats) and Williamson County had the second highest (93, including 85 bats).

Rabid wildlife accounted for 705 (94%) of the confirmed cases throughout the state in 2016; in 2015, rabid wildlife accounted for 901 (95%) of the confirmed cases (Table 1). Bats were the primary source of positive cases reported in 2016 (57% of all positive cases). During 2016, 430 bats were positive for rabies compared with 418 (44% of all positive cases) in 2015. Of all bats tested for rabies, 14% were positive in 2016 and 14% were positive in 2015. Rabies in bats is enzootic (endemic in animals) in Texas; there are numerous bat variants of rabies virus throughout the state. In 2016, there was one identified case in which there was spillover of a bat rabies virus variant to a terrestrial animal (a fox in Travis County).

During 2016, skunks had the second highest number of confirmed rabies cases with 237 (32% of all positive cases) compared with 431 (45% of all positive cases) in 2015. Of all skunks tested for rabies, 38% were positive in 2016 and 42% were positive in 2015. South-central skunk (SCS) remains an established variant of terrestrial rabies virus in Texas. Rabies cases in 2016 in which the SCS rabies virus variant could be confirmed included 237 skunks, 23 cats, 17 foxes, 17 raccoons, 10 dogs, 9 bovines, 2 equines, 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 2016, there were 46 reported rabies cases in domestic animals (6% of all positive cases); of these rabies cases, 24 were cats and 10 were dogs (Table 2). In 2015, there were 51 reported rabies cases in domestic animals (5% of all positive cases); of these rabies cases, 16 were cats and 13 were dogs.

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 2016. 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 2016. 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 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 implemented 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 eventually

eliminate the epizootics. Immunization is accomplished by aerial distribution of edible baits containing oral rabies vaccine. The programs have continued annually and are now combined into a border maintenance zone 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 variant from Texas, plus the control of the TF variant, the ORVP now serves as an ongoing barrier to prevent reintroduction from Mexico.

In 2016, the skunk ORVP expanded-study area to determine the effectiveness against the skunk variant of the rabies virus was continued in all or part of seventeen counties in East-Central Texas. Analysis of the results indicated that less than 50% of skunks developed detectable levels of rabies neutralizing antibodies; the skunk project has been suspended until a more effective strategy is developed.

Figure 1. Positive Animal Rabies Cases: Texas 1994 - 2016

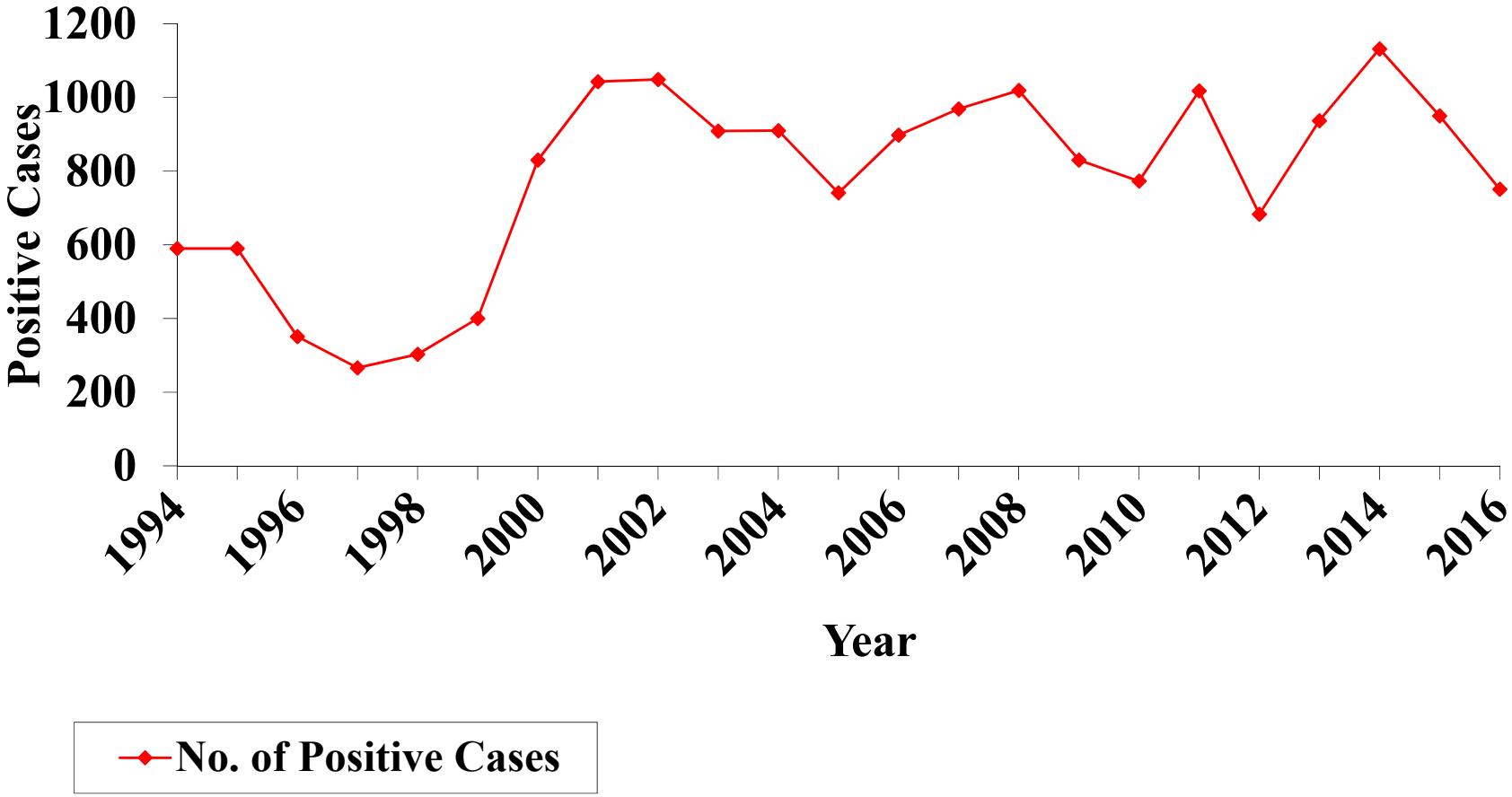

Figure 2. Confirmed Cases of Animal Rabies (all species) by County, 2016

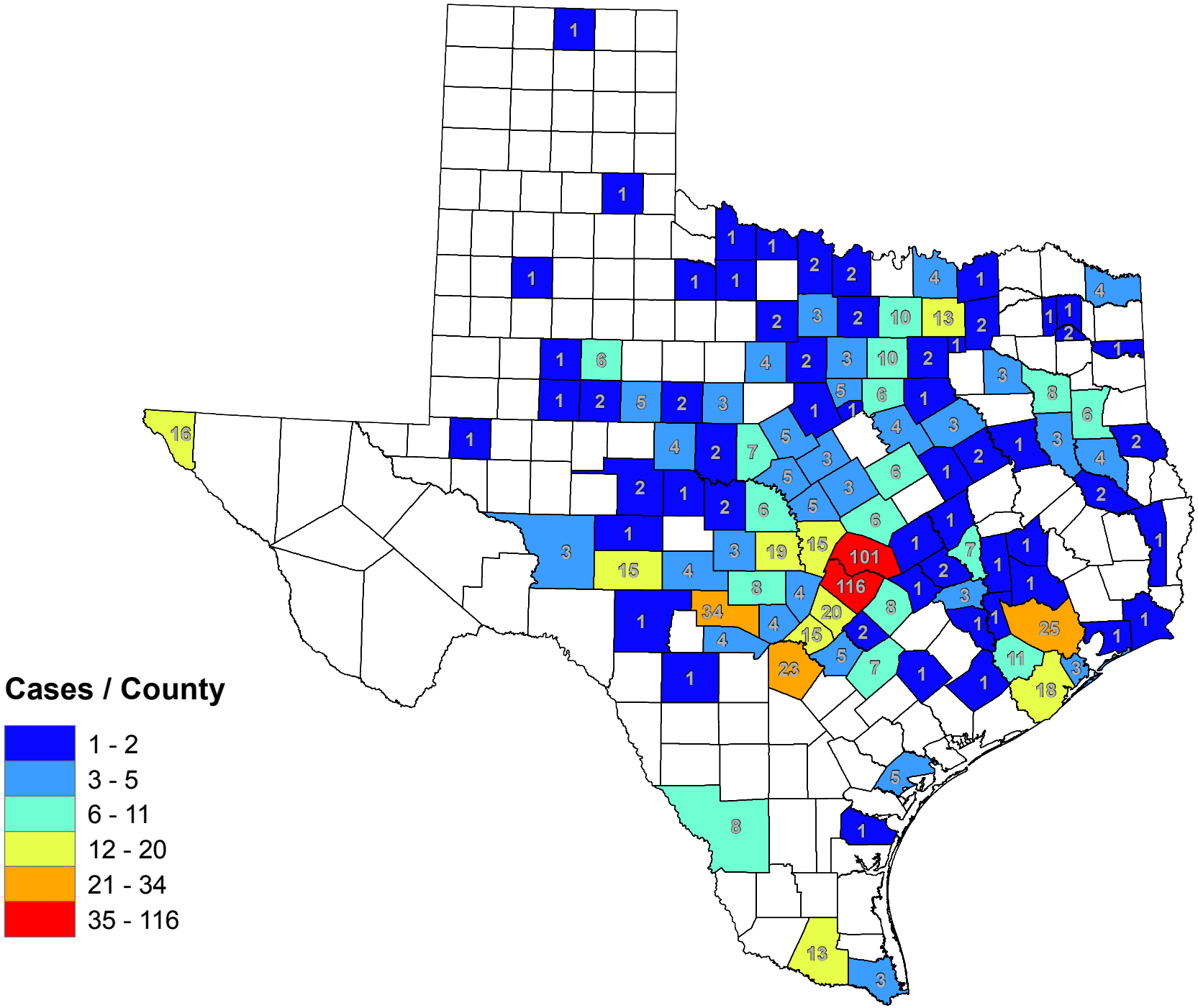

Table 1. Confirmed Cases of Rabies in Wild Animal Species: Texas 2015 and 2016

Species	2015	2016
Bats	418	430
Bobcat	0	1
Bushbuck (antelope)	0	1
Coyote	1	0
Foxes	18	18
Raccoons	33	18
Skunks	431	237
Total	**901**	**705**

Table 2. Confirmed Cases of Rabies in Domestic Animal Species: Texas 2015 and 2016

Species	2015	2016
Bovines	16	9
Cats	16	24
Dogs	13	10
Equines	3	2
Goats	1	1
Pig	1	0
Rabbit	1	0
Total	**51**	**46**