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ENZOOTIC PATTERNS IN FOX RABIES SURVEILLANCE DATA FROM TEXAS. Craig A. Ramey and Keith A. Clark, USDA/APHIS, Denver Wildlife Research Center, Denver, CO 80225, and Texas Department of Health, Zoonosis Control Division, Austin, TX 78756.

Fox rabies surveillance data from the Texas Department of Health (TDH) were analyzed for temporal and spatial patterns in enzootic rabies in Texas from 1922 to the present. Specimens were submitted by the public based on a TDH policy of testing only those animals that had potential for exposing man and/or domestic animals to rabies. Although rabid foxes were not identified by fox species, most were believed to be gray foxes (Urocyon cinereoargenteus) (>99%) with a very few red foxes (Vulpes vulpes). Rabid foxes were identified using either the histopathology of Negri bodies up through 1961 or immunofluorescence assay of brain tissues thereafter. Location data for nearly 2,600 rabid foxes were obtained from the case files. They were initially sorted by year and plotted by county. Between 1922 and 1945, fox rabies was almost nonexistent in the state with only 12 cases recorded. However, a fox epizootic began in 1946, along the border with Louisiana, in Sabine County. Although rabies spread centrifugally from this location, it moved predominantly westward into the Edwards Plateau in the 1960s while regressing from the eastern portion of the state. During the 1970s and early 1980s, fox rabies became enzootic in the Edwards Plateau in southwestern Texas. Presently, Texas may be in the early stages of another epizootic that began from a record annual low of 4 rabid foxes in 1985 to 182 positives reported in the first 6 months of 1994. Since 1922, the epidemiological pattern seems to suggest two epizootics have occurred between 1946 - 1960 and from 1993 to the present. Our knowledge of patterns in the spread of rabies during epizootics should be useful not only for understanding the epidemiology of the disease, but also the importance of interactions with other epidemiological factors such as population dynamics, habitat characteristics, fox biology, and spillover reservoirs. These data may be used in models to aid in spatially and temporally focusing vaccination campaigns in front of the predicted movement of the epizootic wave. In addition, delineation of enzootic foci, during inter-epizootic periods should facilitate more cost-effective monitoring and control (e.g. oral immunization campaigns) of rabies and the possible establishment of rabies-free zones.