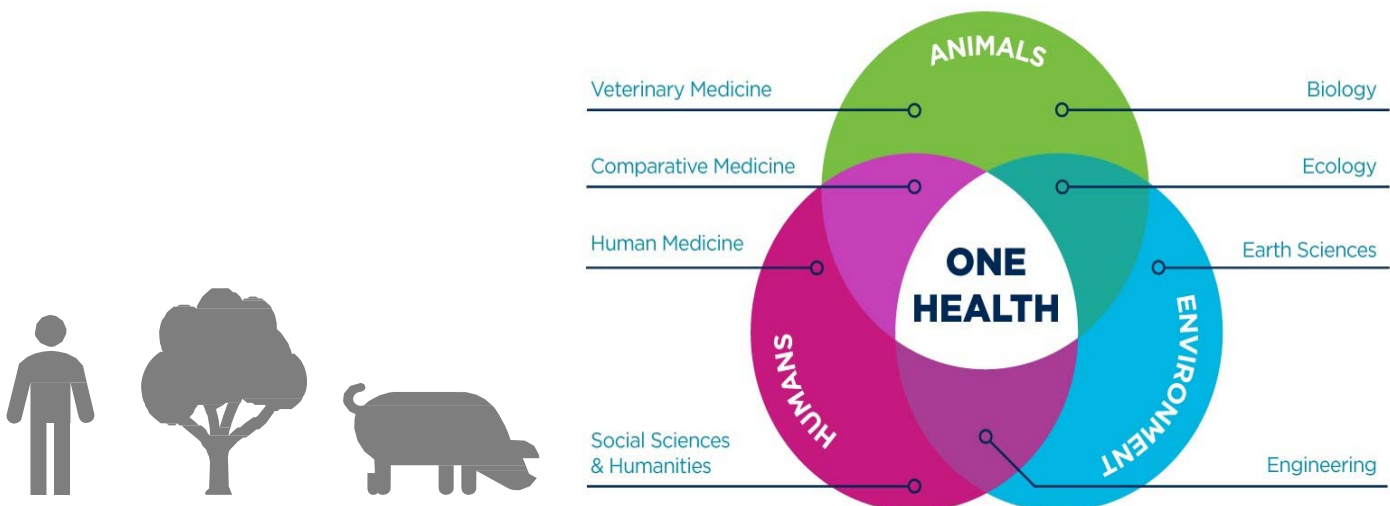


State Public Health Veterinarian Report

Zoonotic diseases are diseases that can be transmitted between animals and humans directly or through a vector (mosquitos, ticks, etc.). They can be caused by viruses, bacteria, parasites, and fungi. About 60% of infectious diseases in humans are transmitted from animals and 75% of emerging infectious diseases are zoonotic.

Zoonotic diseases develop and are spread within complex cycles involving people, animals, vectors, and the environment. Thus, it is essential for healthcare providers, veterinarians, public health officials, and environmental scientists to work together in the identification, prevention, treatment, and control of disease. This collaborative initiative is known as One Health.

This report provides a summary of epidemiologic information for select zoonotic and vector-borne diseases in Arkansas.



Laura K. Rothfeldt, DVM, DACVPM



Zoonotic Diseases in Arkansas

5 Year Table

Disease	2014	2015	2016	2017	2018
<i>Bird-Associated</i>					
Psittacosis	0	0	0	0	0
<i>Livestock-Associated</i>					
Q Fever, acute	5	3	4	3	2
Q Fever, chronic	0	0	1	0	0
<i>Mosquito Borne</i>					
Chikungunya virus	7	4	1	0	0
Dengue Fever	4	1	3	0	2
Encephalitis, Eastern Equine	0	0	0	0	0
Encephalitis, St. Louis	0	0	0	0	0
Encephalitis, Western Equine	0	0	0	0	0
Malaria	7	9	6	5	2
West Nile Virus	11	18	9	18	8
Yellow Fever	0	0	0	0	0
Zika	0	3	16	2	0
<i>Multi-Mode Zoonoses</i>					
Brucellosis	0	1	3	1	2
Rickettsial disease - Typhus	3	2	1	1	0
Toxoplasmosis	9	2	11	12	14
Tularemia	43	24	33	32	56
<i>Public Health Pest</i>					
American Trypanosomiasis (Chagas Disease)	1	0	2	0	0
<i>Rabies and Animal Bites</i>					
Rabies, Animal	151	73	23	43	32
Rabies, Human	0	0	0	0	0
<i>Tick Borne</i>					
<i>Anaplasma phagocytophilum</i>	15	16	14	6	8
Babesiosis, <i>Babesia microti</i>	0	0	1	0	2
Ehrlichiosis, <i>Ehrlichia chaffeensis</i>	236	193	200	198	167
Ehrlichiosis, <i>Ehrlichia ewingii</i>	1	1	4	9	5
Heartland Virus	0	0	0	2	1
Lyme Disease	0	1	7	6	4
Rickettsial Disease – Spotted Fever	827	891	821	1,218	1,062

Reported Cases in People



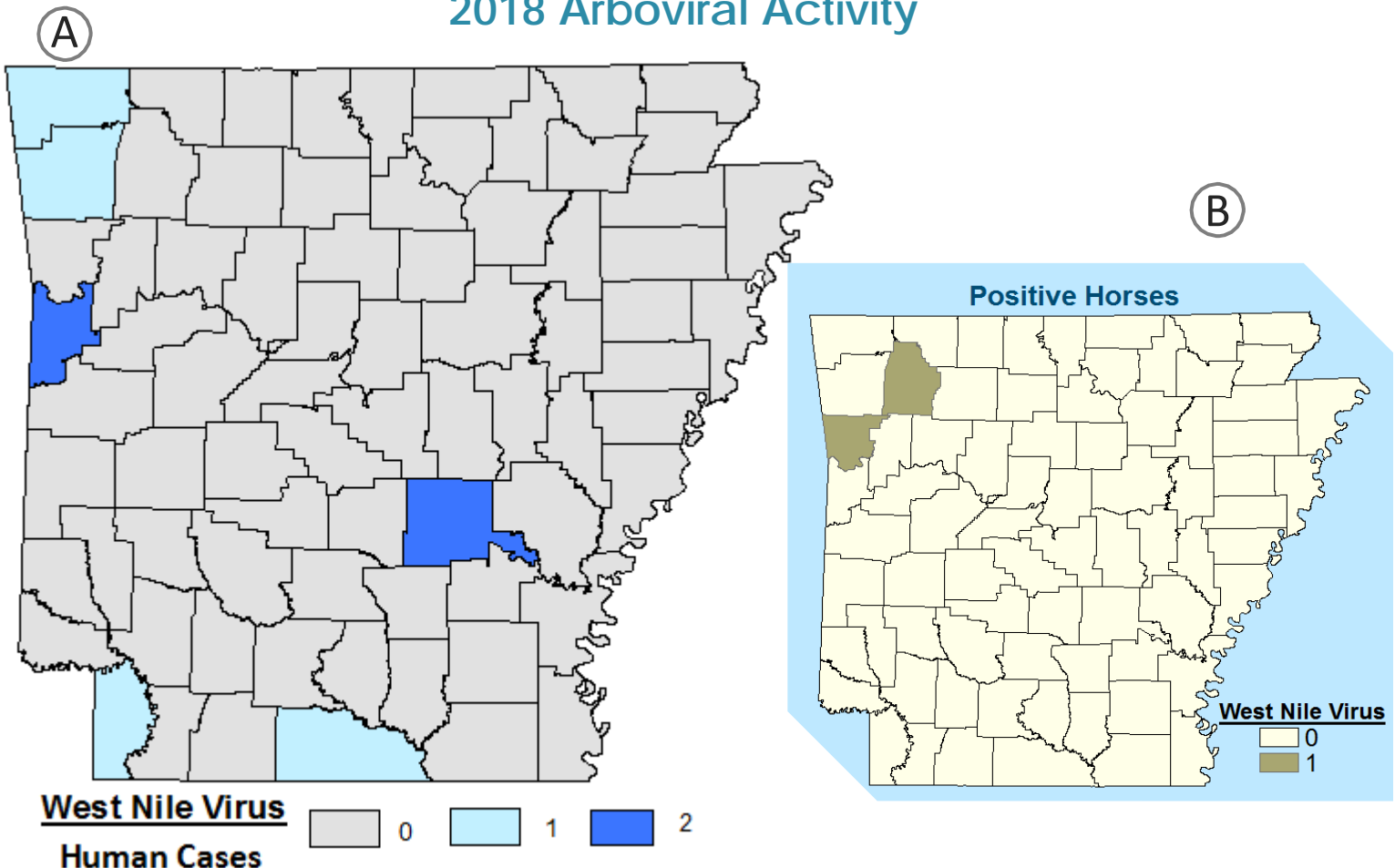
WEST NILE VIRUS & EASTERN EQUINE ENCEPHALITIS

West Nile Virus (WNV) is a potentially serious mosquito-borne disease is transmitted to humans most often by the bite of an infected mosquito. Other modes of WNV transmission have been described, including organ transplant, blood transfusions, breastfeeding and intrauterine transmission.

More than 30,000 people in the U.S. have been infected with WNV since 1999. In 2018, Arkansas reported eight cases of WNV, including six cases of neuroinvasive (e.g., meningitis, encephalitis) disease with one associated death, and two cases of non-neuroinvasive disease.

There were no human cases of Eastern Equine Encephalitis (EEE) in 2018.

2018 Arboviral Activity



2018 Arkansas Arboviral Map Key

- A) **Map of WNV Positive Human Cases:** Number of confirmed and probable human WNV cases by county of residence
- B) **Map of WNV and EEE Positive Horses:** Number of horses tested positive for WNV and EEE by county



TICKBORNE DISEASES

Tickborne Disease (TBD) is a type of zoonotic disease (an infectious disease transmitted between animals and humans) that is transmitted by ticks, a member of the arachnid family. In Arkansas, ticks are responsible for more human disease than any other arthropod vector, but not all ticks transmit disease. Of the many different tick species found in Arkansas, only a select few bite and transmit disease to humans.

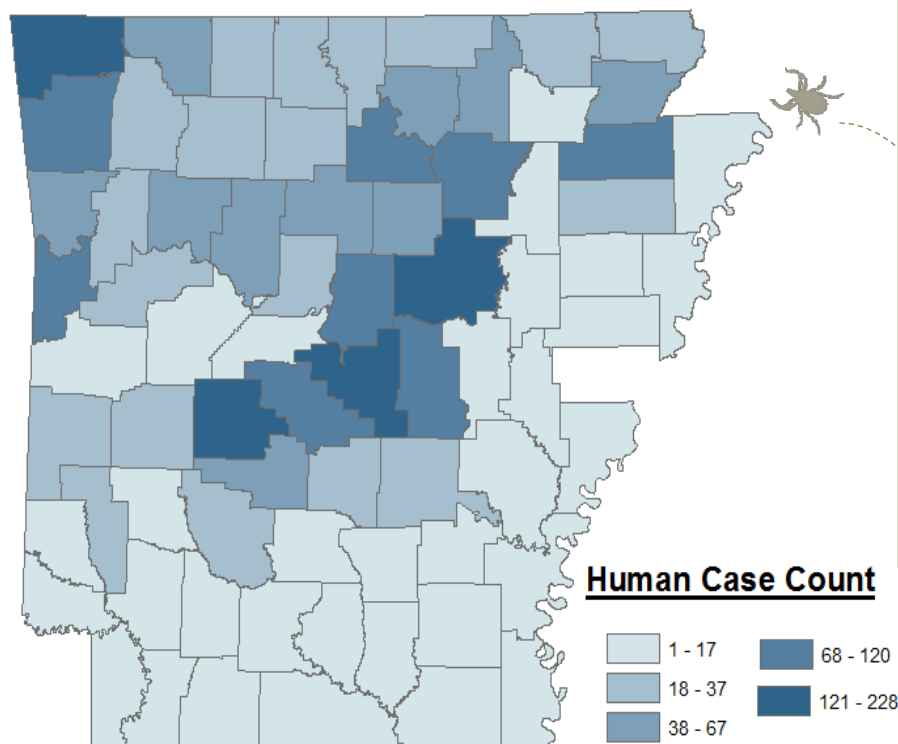
The tickborne rickettsial disease (TBRD), including Rocky Mountain Spotted Fever (RMSF), Ehrlichiosis (HME), and Anaplasmosis (HGA) are caused by *Rickettsia rickettsii*, *Ehrlichia chaffeensis*, and *Anaplasma phagocytophilum*, respectively. These pathogens are maintained in nature by interactions of wild mammals with hard-bodied (ixodid) tick and are the most frequently reported diseases among the zoonotic disease found in Arkansas

1,062



In 2018, 1,062 human cases of spotted fever group (SFG) rickettsioses were reported in Arkansas

2018 Human Tickborne Rickettsial Diseases by County of Residence



Counties with the highest number of cases of TBRD:

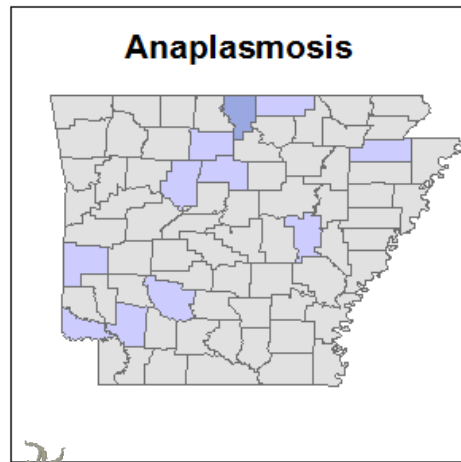
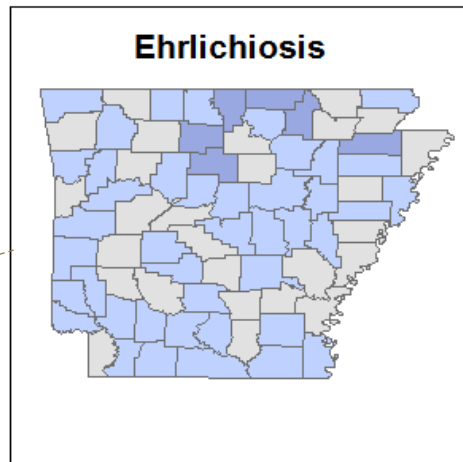
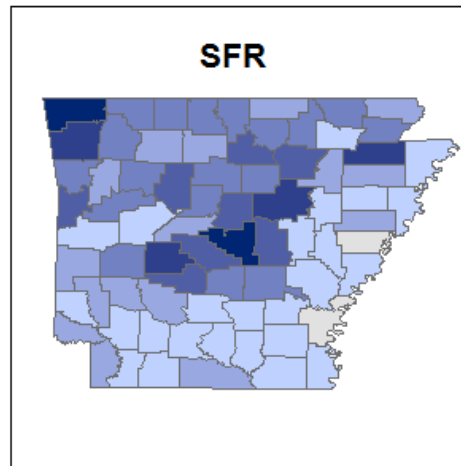
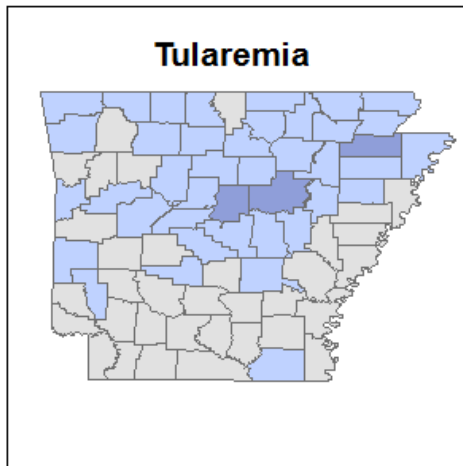
- Benton – 228 cases
- Pulaski – 165 cases
- Garland – 162 cases
- White – 137 cases
- Washington – 120 cases



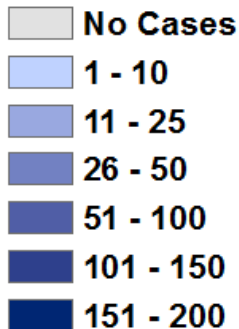
ARKANSAS
DEPARTMENT OF HEALTH

TICKBORNE DISEASES

Tickborne Disease Activity in Arkansas, 2018



Tickborne Disease Case Counts



RABIES

Rabies is a deadly but preventable viral disease of mammals most often transmitted through a bite from an infected animal. The rabies virus is transmitted when saliva from an infected animal is exposed to broken skin or mucous membranes. Rabies infects the central nervous system, which causes disease in the brain and death in almost 100% of symptomatic cases.

In Arkansas, the State Public Health Veterinarian and the Zoonotic Epidemiologists coordinate positive animal rabies follow-up, including the quarantines for domestic animals and the risk assessments of people exposed to rabid animals.

Additionally, the State Public Health Veterinarian coordinates the recommendation for Post-Exposure Prophylaxis (PEP) for all animal bites and exposures, whether the rabies status is known or not. Arkansas Department of Health (ADH) Environmental Health Specialists (EHS) conduct quarantine monitoring in instances of animal exposures throughout the year.

The data collected on rabies is from a passive surveillance system. The data is dependent on informed veterinarians, animal control officers, and citizens submitting specimens of suspect animals. Surveillance is incomplete, and the incidence of rabies is likely to be underestimated.

In Arkansas, most rabies cases occur in wild animals such as bats and skunks. In 2018, 874 animals were tested for rabies. Thirty-two animals tested positive, including 17 skunks, 13 bats, 1 dog and 1 cow.

In 2018...



874

animals were submitted for rabies testing.



8.4%

of bats submitted for testing were infected with rabies.



1

dog tested positive for rabies.

17 skunks tested positive for rabies



