



Highlights

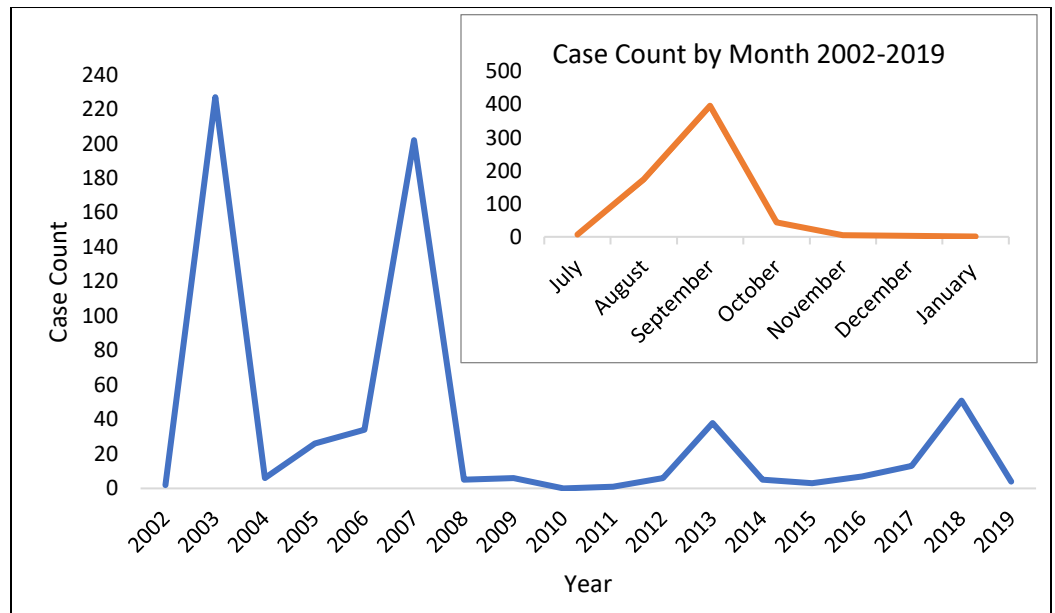
- Nationally, 570 cases of neuroinvasive WNV were reported, while a total of 302 cases of non-neuroinvasive WNV were reported during the 2019 WNV season.
- Although Montana did not report any deaths related to WNV in the 2019 season, a total of 46 deaths were reported nationally.

In Montana:

- Since WNV surveillance began in 2002, the 2019 season was the **fourth lowest** in terms of the number of WNV cases reported in Montana.
- **100% (3)** of cases reported in the 2019 WNV season occurred in individuals over 60 years of age.
- **100% (3)** of cases reported in 2019 were neuroinvasive cases of WNV.
- **67% (2)** of symptomatic cases were hospitalized.
- There have been a total of **14** deaths in Montana related to WNV since 2002.

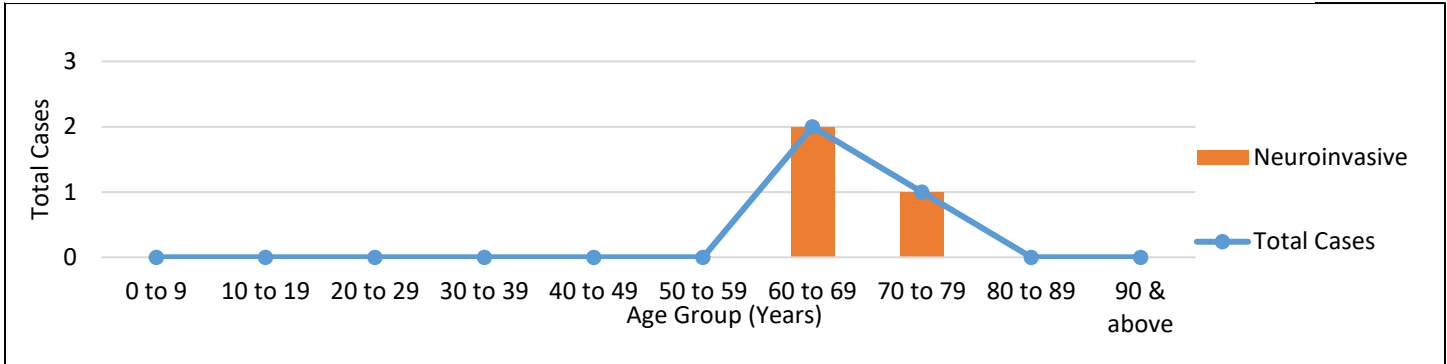
Overview. West Nile Virus (WNV) is the leading cause of arboviral disease in Montana. WNV is a vector-borne disease meaning that for individuals to become infected, they must be bitten by an infected mosquito. Four out of five individuals infected with WNV will not develop any symptoms and will become immune. An estimated one in five individuals infected will develop symptoms which can include fever, headache, body aches, nausea and rashes. Serious symptoms can develop in rare cases with approximately 1 in 150 of those infected developing infections in or around the brain, also known as neuroinvasive disease. In 2019, there were a total of three neuroinvasive cases, one asymptomatic viremic blood donor case, and two equine cases of WNV reported. Since surveillance began in 2002, case counts have varied widely each year. In 2002 when WNV was first reported in Montana, there were two cases, while one year later, in 2003, there were 227 cases reported (Figure 1). The 18-year average, which includes two outbreak years consisting of over 200 cases, is 35 cases.

Figure 1. Seasonality of human cases of West Nile Virus – Montana, 2002-2019



Seasonality and Risk Factors for Severe Disease. Since 2002, most cases of WNV occurred between July and October, which is when mosquito activity peaks in Montana. Over half of the cases (67%) are reported during September (Figure 1). Individuals over the age of 65 years and those that are immunocompromised are more likely to develop severe or fatal infection. All symptomatic cases reported during the 2019 WNV season occurred in individuals 60 years and older. (Figure 2).

Figure 2. Symptomatic West Nile Virus cases by age group and disease severity---Montana, 2019 (n=3)

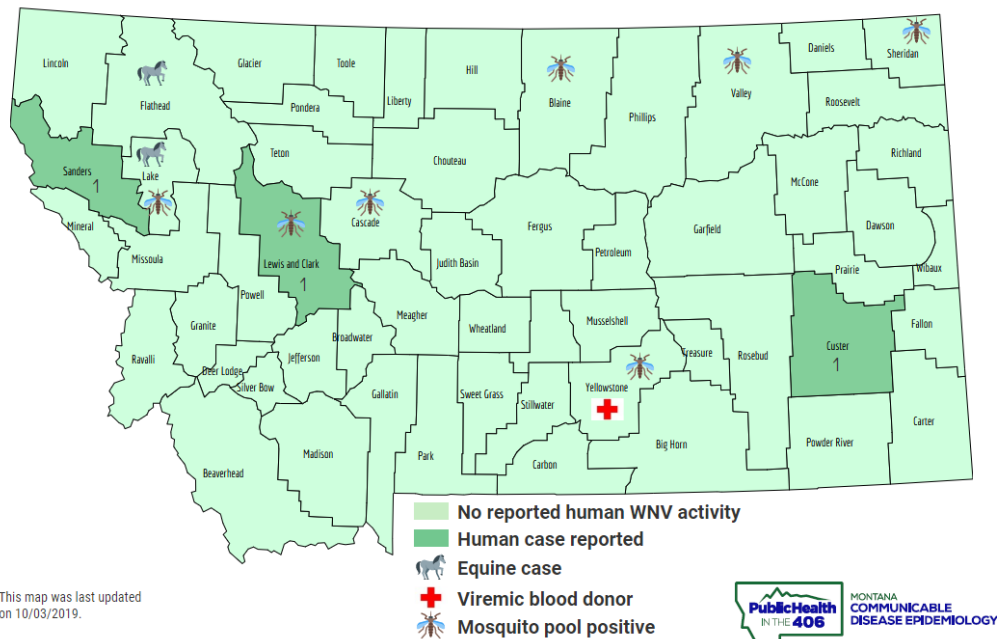


Geography. In 2019, a total of four counties had at least one case of West Nile Virus reported in a human. Case counts for counties are as follows: Custer (1), Lewis and Clark (1), Sanders (1), and Yellowstone (1)*.

*viremic (blood donor) cases included

Surveillance Efforts. In addition to reporting symptomatic human cases, blood donors (asymptomatic), positive equine cases, and positive mosquito pools are tracked. Based upon the limited testing of counties performing mosquito surveillance, there were seven counties with positive mosquito pools in 2019. Only two equine cases were reported during the 2019 WNV season. Below is a map (Figure 3) summarizing the 2019 WNV activity in Montana.

Figure 3. West Nile Virus Activity by County---Montana, 2019



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