

# Vector-Borne Disease

## 2020 Monthly Surveillance Report

Iowa Department of Public Health | Center for Acute Disease Epidemiology | [West Nile Virus Website](#)

All data presented in this report are provisional and may change as additional reports are received

Date Issued: February 2, 2021

### West Nile Virus (WNV)

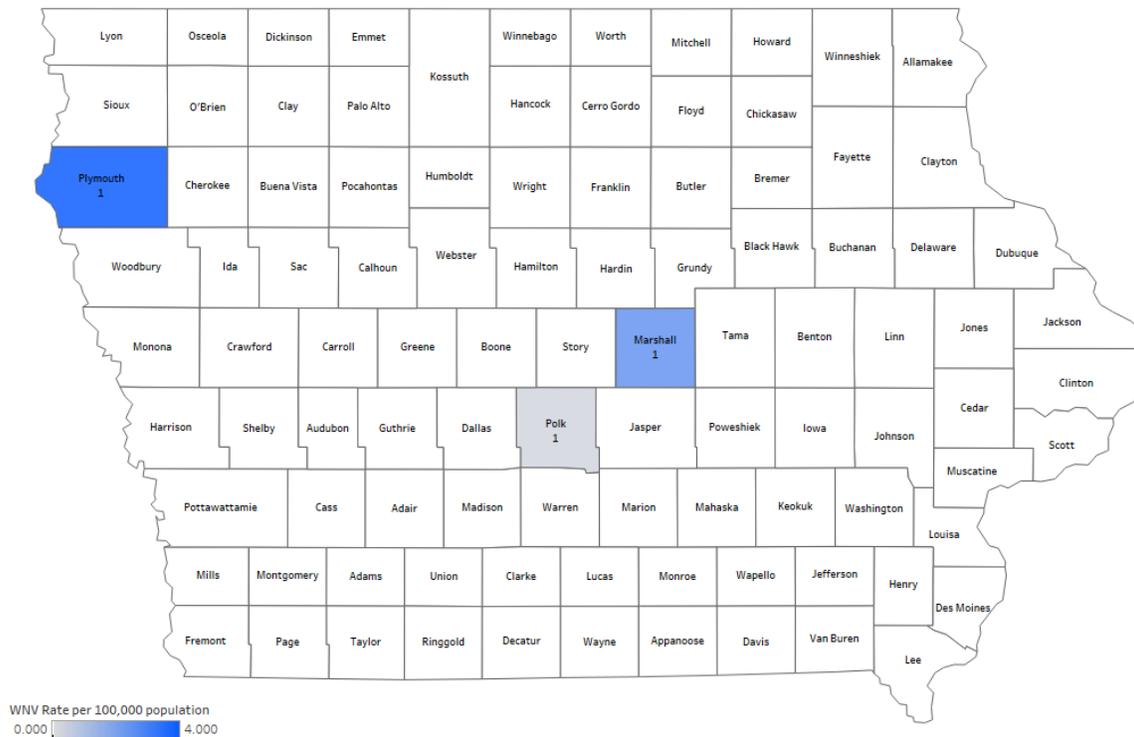
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

In 2019, five human cases were identified. In 2020, three human cases of WNV were identified and 58 mosquito samples have tested positive for WNV [Table 1].

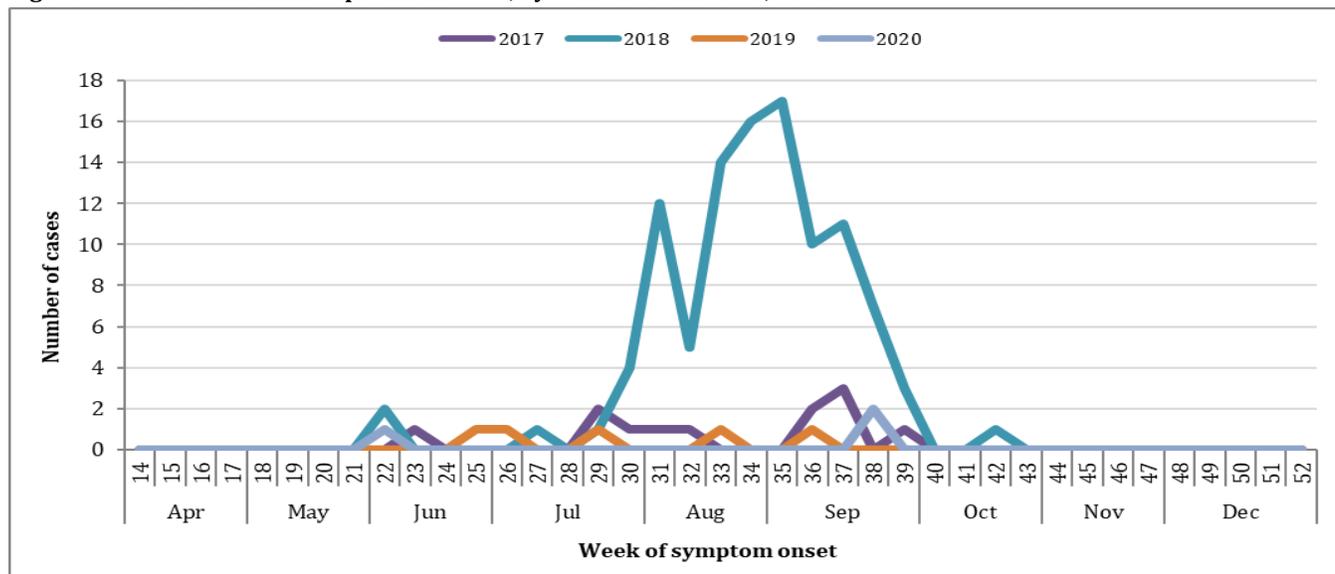
**Table 1. Human /Equine Surveillance, 2020 Positive Samples**

County	Human	Blood Donor	Horse	Mosquitoes				
				<i>Culex erraticus</i>	<i>Culex pipiens</i>	<i>Culex pipiens</i> group	<i>Culex restuans</i>	<i>Culex tarsalis</i>
Black Hawk	0	0	0	0	12	2	2	0
Fremont	0	0	0	0	0	1	2	0
Marshall	1	0	0	0	0	0	0	0
O'Brien	0	0	0	0	0	2	1	5
Plymouth	1	0	0	0	0	0	0	0
Polk	1	0	0	1	10	5	14	0
Woodbury	0	0	0	0	0	1	0	0
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>22</b>	<b>11</b>	<b>19</b>	<b>5</b>

**Figure 1. 2020 West Nile virus case count and incidence rate by county of residence.**



**Figure 2. WNV disease cases reported to IDPH, by week of onset-Iowa, 2020**



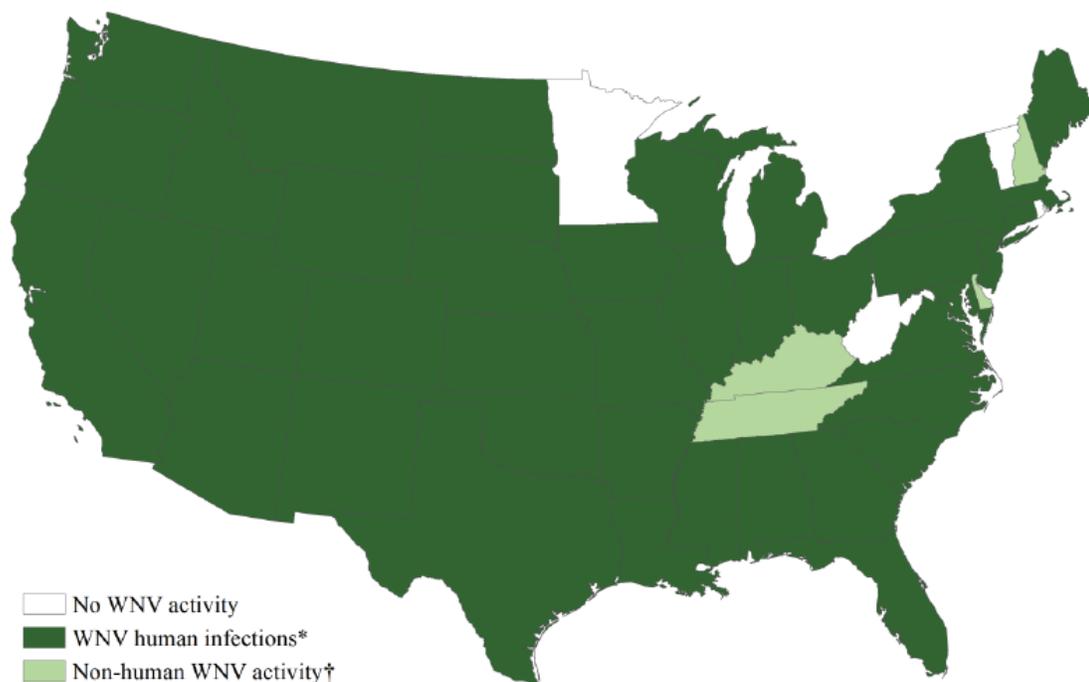
**National WNV Activity:**

As of January 5<sup>th</sup>, 410 counties from 44 states have reported WNV activity to ArboNET for 2020, including 40 states with reported WNV human infections (i.e., disease cases or viremic blood donors) and four additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) [Figure 3].

To date, 557 human WNV disease cases have been reported from 180 counties in 40 states. Of the 557 reported cases, 422 (76%) were classified as neuroinvasive disease (e.g., meningitis or encephalitis) and 135 (24%) was classified as non-neuroinvasive disease [Figure 4]. Dates of illness onset for cases ranged from January-November [Figure 5].

One hundred and thirty WNV presumptive viremic donors have been reported from 16 states.

**Figure 3. WNV activity reported to ArboNET, by state – United States, 2020 (as of January 5, 2021)**



\*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals



IDPH in collaboration with Iowa State University (ISU) and local public environmental health partners conducts ecological surveillance in 14 counties across the state by monitoring mosquitoes and testing for WNV infected populations.

**Table 2. 2020 mosquitoes tested for West Nile virus**

Species	# of Samples Tested	WNV Negative	WNV Positive
<i>Cx. erraticus</i>	14	13	1
<i>Cx. pipiens</i>	372	350	22
<i>Cx. pipiens group</i>	304	293	11
<i>Cx. tarsalis</i>	79	74	5
<i>Cx. restuans</i>	312	293	19
<i>Cx. territans</i>	37	37	0
<i>Cx. salinarius</i>	5	5	0
<i>Cx. species</i>	1	1	0
<b>Total</b>	<b>1124</b>	<b>1066</b>	<b>58</b>

### Chikungunya

Chikungunya is a viral disease that is spread to people by the bite of an infected *Aedes aegypti* and *Aedes albopictus* mosquito. Mosquitoes become infected when they feed on a person already infected with this virus.

Two cases of chikungunya virus disease have been reported in Iowa. Cases are in travelers and immigrants returning from parts of the world where chikungunya transmission occurs. In 2019, two cases of chikungunya were reported in Iowa.

### Dengue Fever

Dengue is a disease caused by any one of four related viruses, which are passed by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. Infection with one of the four viruses does not protect against the others and consecutive infections put people at greater risk of developing dengue hemorrhagic fever (DHF).

Dengue is not found in Iowa. Cases are in travelers and immigrants returning from parts of the world where dengue transmission occurs. One case of dengue has been reported in Iowa in 2020. In 2019, nine cases of dengue were reported to IDPH.

### Malaria

Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects *Anopheles* mosquitoes. Malaria is spread to humans by the bite of the infected female mosquito. Only *Anopheles* mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected person.

Five cases of malaria have been reported in Iowa. Cases are in travelers and immigrants returning from parts of the world where malaria transmission occurs. In 2019, 23 cases of malaria were reported to IDPH.

### Rocky Mountain spotted fever (RMSF)

American dog ticks are carriers of *Rickettsia rickettsii*, the bacteria that causes RMSF. The American dog tick is the most common species of tick in Iowa and can be found in every county in the state. The tick is most active late March through August.

Four cases of RMSF have been reported in Iowa. In 2019, 11 cases of RMSF were reported to IDPH.

### Ehrlichiosis/Anaplasmosis

There are at least three species of bacteria responsible for ehrlichiosis/anaplasmosis in the United States: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, and *Anaplasma phagocytophilum*. Ehrlichiae are transmitted by the bite of an infected lone star tick (*Amblyomma americanum*) which is found in Iowa. *A. phagocytophilum* is transmitted by the bite of an infected blacklegged tick (or deer tick, *Ixodes scapularis*) in Iowa. The clinical signs and symptoms of these infections are similar.

Nine cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2019, 34 cases of ehrlichiosis/anaplasmosis were reported to IDPH.

## Lyme

Lyme disease is caused by *Borrelia burgdorferi* and in Iowa is transmitted to humans by the bite of an infected tick, the blacklegged tick (or deer tick, *Ixodes scapularis*). Ticks are most likely to spread the Lyme disease bacterium during their pre-adult stage (nymph). They are most common between May and July and found in tall grasses and brush of wooded areas.

As of February 1<sup>st</sup>, 189 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 6]. In 2019, 304 cases of Lyme disease were reported to IDPH.

**Figure 6. 2020 Lyme disease case count and incidence rate by county of residence.**

