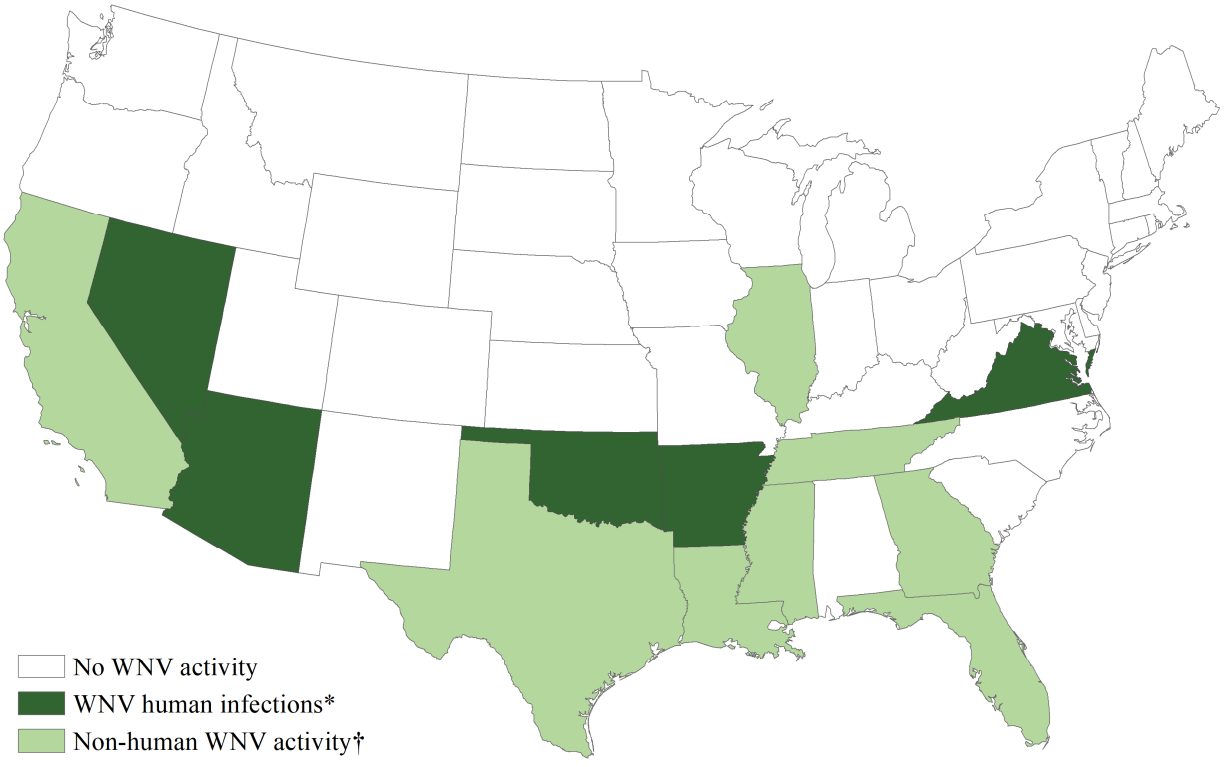
West Nile virus and other domestic arboviral activity -- United States, 2019
Provisional data reported to ArboNET
Tuesday, June 11, 2019

This update from the CDC Arboviral Disease Branch includes provisional data reported to ArboNET for **January 1–June 11, 2019** for West Nile virus and selected other nationally notifiable domestic arboviruses. Additional resources for ArboNET and arboviral diseases are provided on page 8.

West Nile virus (WNV) activity in 2019

As of June 11th, 29 counties from 13 states have reported WNV activity to ArboNET for 2019, including five states with reported WNV human infections (i.e., disease cases or viremic blood donors) and eight additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) **[Figure 1]**.

Figure 1. West Nile virus (WNV) activity reported to ArboNET, by state — United States, 2019 (as of June 11, 2019)



*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

Reported WNV disease cases

To date, eight human WNV disease cases have been reported from seven counties in five states **[Table 1]**. Dates of illness onset for cases ranged from January–May **[Figure 2]**.

Of the eight reported cases, five (63%) were classified as neuroinvasive disease (e.g., meningitis or encephalitis) and three (37%) were classified as non-neuroinvasive disease **[Figure 3]**.

Presumptive viremic donors (PVDs)

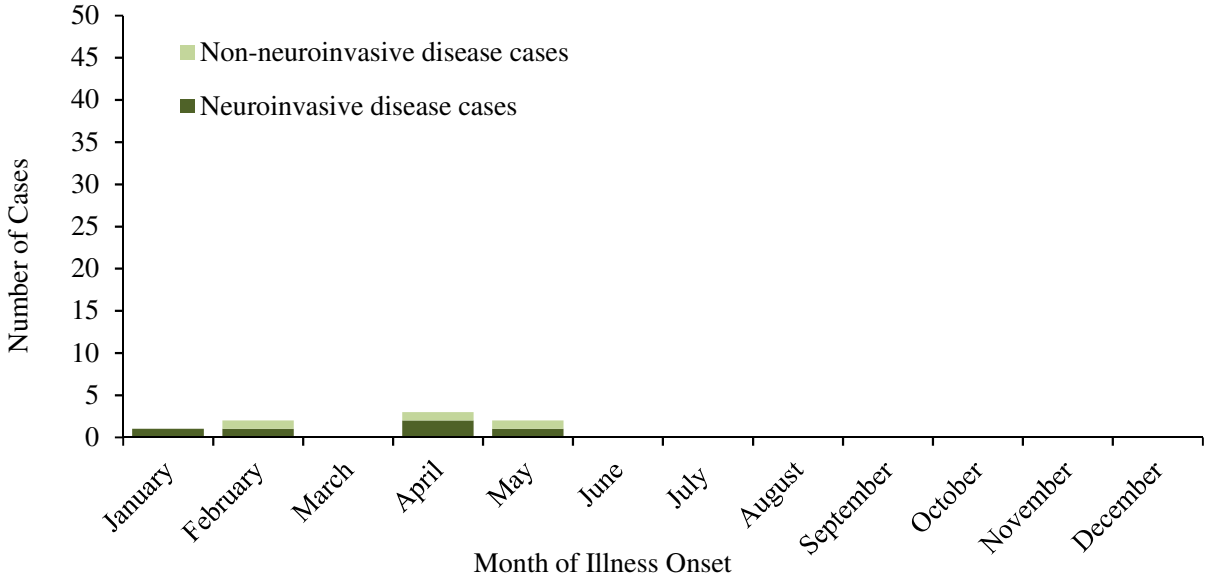
Overall, one WNV PVD have been reported from one state (Arizona) **[Table 1]**.

Table 1. West Nile virus infections in humans reported to ArboNET, 2019

	Human disease cases reported to CDC*				Presumptive viremic blood donors
State	**Neuroinvasive**	**Non-neuroinvasive**	**Total**	**Deaths**	
Arizona	2	0	2	0	1
Arkansas	1	0	1	1	0
Nevada	1	0	1	0	0
Oklahoma	1	2	3	0	0
Virginia	0	1	1	0	0
Totals	**5**	**3**	**8**	**1**	**1**

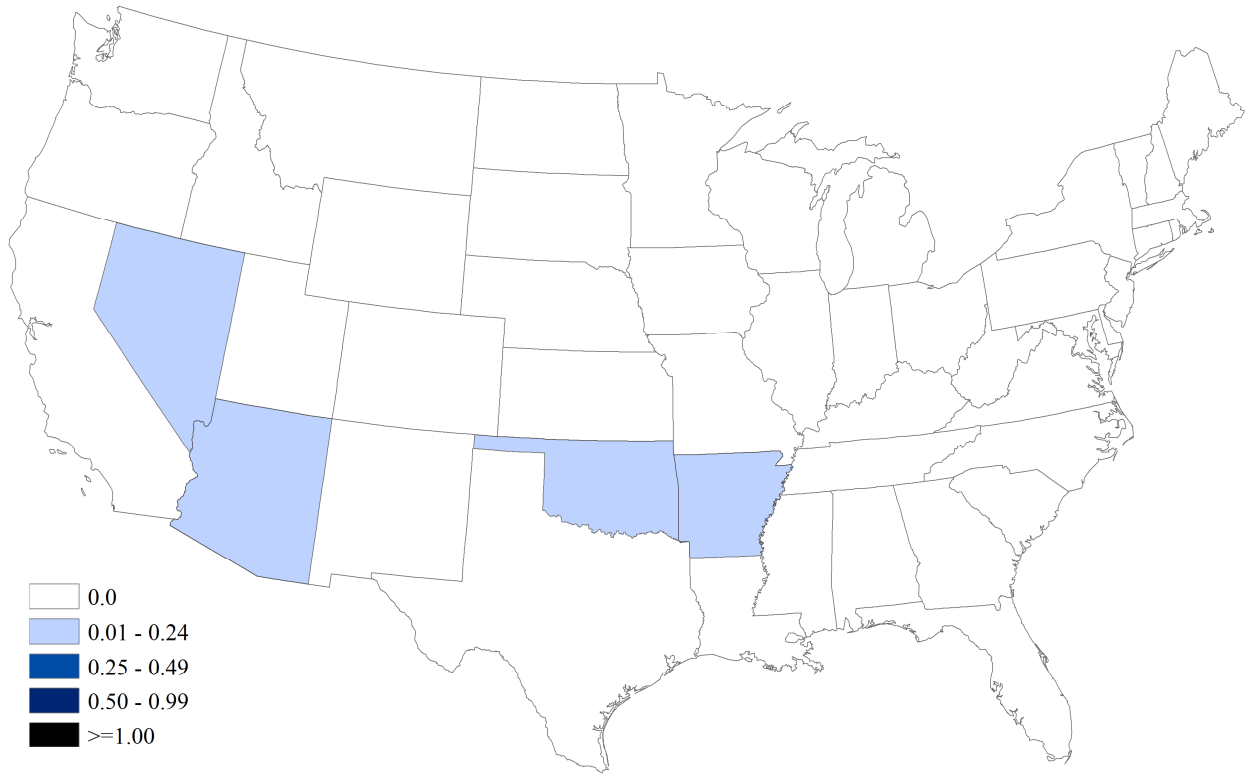
*Includes confirmed and probable cases

Figure 2. West Nile virus disease cases reported to ArboNET, by month of onset* — United States, 2019 (as of June 11, 2019)



*Cases missing onset date (n=2)

Figure 3. West Nile virus (WNV) neuroinvasive disease incidence* reported to ArboNET, by state — United States, 2019 (as of June 11, 2019)

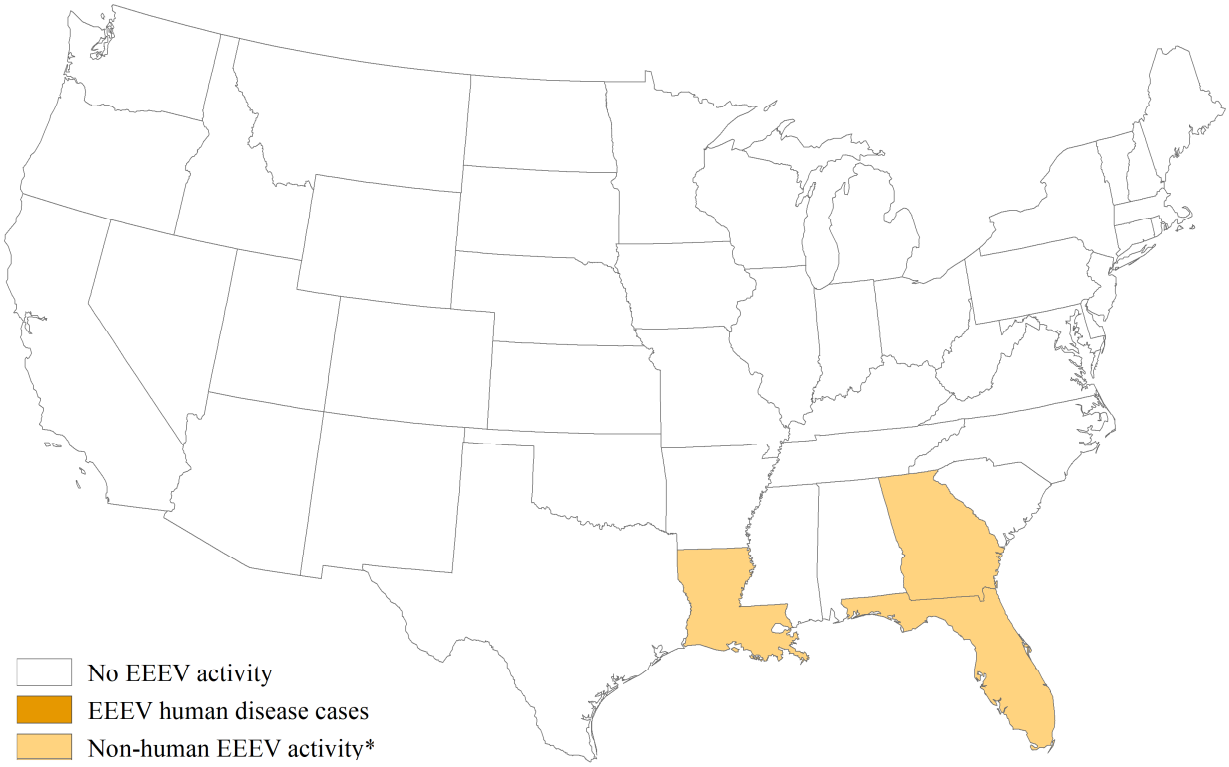


*Incidence per 100,000 population

Eastern equine encephalitis virus (EEEV) activity in 2019

As of June 11th, 17 counties in Florida, Georgia, and Louisiana have reported EEEV activity in non-human species to ArboNET for 2019 **[Figure 2]**. To date, no human cases of EEEV disease have been reported.

Figure 2. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state — United States, 2019 (as of June 11, 2019)



*EEEV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Jamestown Canyon virus (JCV) activity in 2019

As of June 11th, no human cases of JCV disease or JCV activity in non-human species have been reported to ArboNET for 2019.

La Crosse encephalitis virus (LACV) activity in 2019

As of June 11th, no human cases of LACV disease or LACV activity in non-human species have been reported to ArboNET for 2019.

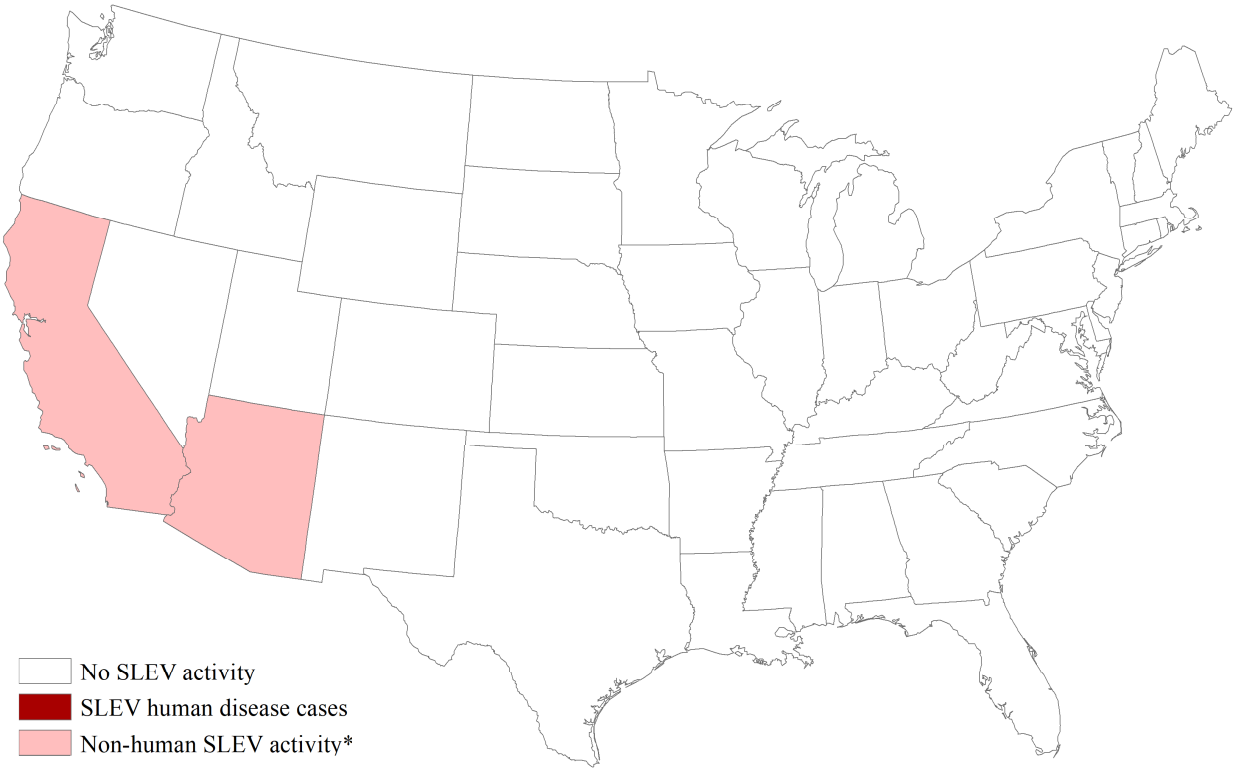
Powassan virus (POWV) activity in 2019

As of June 11th, no human cases of POWV disease have been reported to ArboNET for 2019.

St. Louis encephalitis virus (SLEV) activity in 2019

As of June 11th, three counties in Arizona and California have reported SLEV activity in non-human species to ArboNET for 2019 **[Figure 3]**. To date, no human cases of SLEV disease have been reported.

Figure 3. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state — United States, 2019 (as of June 11, 2019)



*SLEV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

About ArboNET

ArboNET is a national arboviral surveillance system managed by CDC and state health departments. In addition to human disease, ArboNET maintains data on arboviral infections among presumptive viremic blood donors (PVDs), veterinary disease cases, mosquitoes, dead birds, and sentinel animals. As with other national surveillance data, ArboNET data has several limitations that should be considered in analysis, interpretation, and reporting **[Box]**.

Box: Limitations of ArboNET data

The following should be considered in the analysis, interpretation, and reporting of ArboNET data:

1. ArboNET is a passive surveillance system. It is dependent on clinicians considering the diagnosis of an arboviral disease and obtaining the appropriate diagnostic test, and reporting of laboratory-confirmed cases to public health authorities. Diagnosis and reporting are incomplete, and the incidence of arboviral diseases is underestimated.
2. Reported neuroinvasive disease cases are considered the most accurate indicator of arboviral activity in humans because of the substantial associated morbidity. In contrast, reported cases of nonneuroinvasive arboviral disease are more likely to be affected by disease awareness and healthcare-seeking behavior in different communities and by the availability and specificity of laboratory tests performed. Surveillance data for nonneuroinvasive disease should be interpreted with caution and generally should not be used to make comparisons between geographic areas or over time.

Additional resources

For additional arboviral disease information and data, please visit the following websites:

- CDC's Division of Vector-Borne Diseases:
  http://www.cdc.gov/ncezid/dvbd/

- National Notifiable Diseases Surveillance System:
  http://wwwn.cdc.gov/nndss/conditions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive/case-definition/2015/

- CDC Disease Maps
  https://wwwnd.cdc.gov/arbonet/Maps/ADB_Diseases_Map/index.html

- AABB (American Association of Blood Banks):
  www.aabb.org/programs/biovigilance/Pages/wnv.aspx