NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Public Health

North Carolina Mosquito Surveillance Update

Weeks 39 – 40: 09/27/2026 – 10/10/2026

Table 1. Mosquito Surveillance Summary

Key Points

- To date in 2026, North Carolina has reported 21 human cases of endemic mosquito-borne diseases (WNV and LACV) and 47 non-endemic cases (malaria, CHIKV, DENV, and SLEV).
- One SLEV case had a history of travel, and the location of exposure could not be determined. This is the first SLEV case reported by NC since 2008.
- No blood donation samples in NC residents were confirmed positive for WNV during the past two weeks. See page two for additional information.
- All malaria, CHIKV, and DENV cases reported in 2026 have been associated with international travel. See page three for additional information.
- Out of 153 mosquito samples tested for WNV at the North Carolina State Laboratory of Public Health in the past two weeks, four were positive. See pages five and six for additional information.
- No human EEE cases nor any equine cases of WNV or EEE, have been reported in 2026.
    - No human EEE cases have been reported in NC since 2024.
- No WNV-positive wastewater samples have been detected in NC since testing began in 2025. However, New York and Kentucky have reported positive samples since September 27.

Surveillance Measure	Weeks 39-40	Year-to-Date
West Nile Virus (WNV) Neuroinvasive Cases	0	15
WNV-Positive Viremic Blood Donors	0	7
La Crosse Virus (LACV) Neuroinvasive Cases	0	6
Eastern Equine Encephalitis (EEE) Cases	0	0
St. Louis Encephalitis Virus (SLEV) Cases	0	1
Imported Malaria Cases	1	34
Imported Dengue Virus (DENV) Cases	0	10
Imported Chikungunya (CHIKV) Cases	0	2
Equine WNV or EEE Cases	0	0
Number of Mosquito Samples Tested (1-50 individual mosquitoes per sample)	153	1217
WNV-Positive Mosquito Samples	4	65

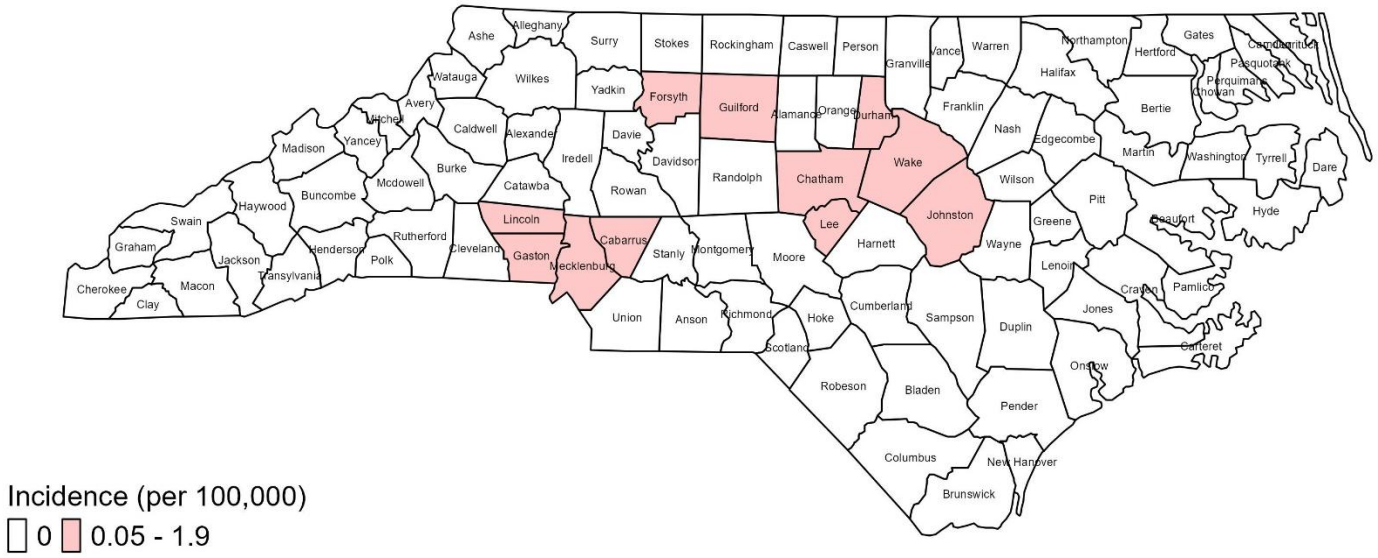
Report specifications:

- Abundance is measured as the total number of mosquitoes collected divided by the total number of trap nights. Local vector control programs funded by the State of North Carolina have 30 days to submit mosquito surveillance data, which may result in fluctuations in reported counts.
- NC reports only neuroinvasive disease caused by WNV, EEE, or LACV and therefore, total case numbers may not be directly comparable with other states that also report non-neuroinvasive disease.
- Cases include those classified as confirmed or probable, per the surveillance case definitions, and are only among NC residents.
- County data are based on the patient's home address at the time of reporting, not necessarily the county or state where they were infected.
- Additional data can be found on the North Carolina Disease Data Dashboard (NCD3) and in previous annual surveillance summaries.
- Annual North Carolina population estimates as of July 1, 2025, were obtained from the U.S. Census Bureau.
- Please note that case classification criteria are subject to change and counts may fluctuate based on these changes.
- Case counts are subject to change as cases remain under investigation. Case counts are assigned according to a hierarchy that uses the earliest available date: symptom onset date, specimen collection date, or the date of initial reporting to public health. As additional information becomes available, the total number of reported cases may increase from what is presented here.

Note: Refer to the appendix on page 12 for information on the medically important mosquito species of North Carolina, as well as distribution maps of mosquito disease vectors.

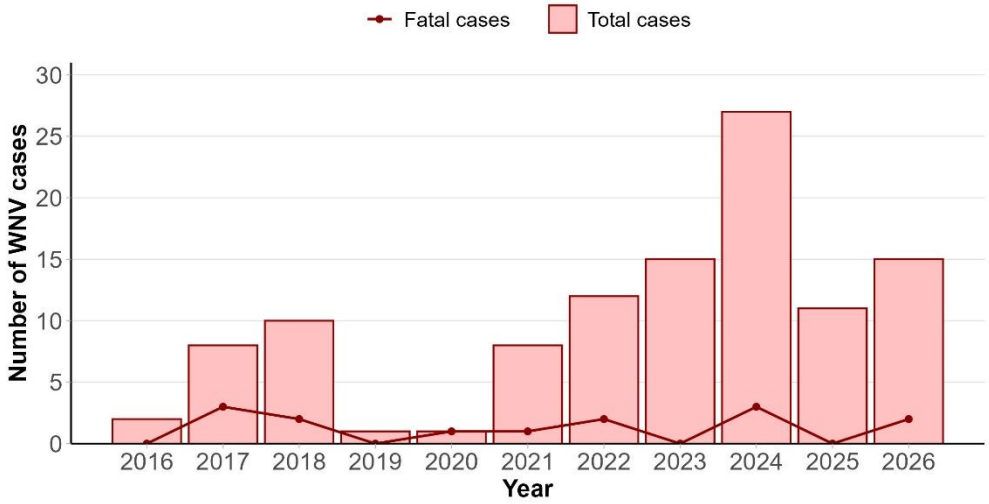
Mosquito-Borne Disease Cases

Neuroinvasive West Nile Virus (WNV) Incidence Rate* by County, NC, 2026



Neuroinvasive WNV cases have been reported from 11 counties to date in 2026, with Mecklenburg County having the highest number of cases (n=4). There are currently no human vaccines or specific treatments available for West Nile virus. The most effective protection is prevention.

NC Total and Fatal Neuroinvasive WNV Cases, 2016-2026

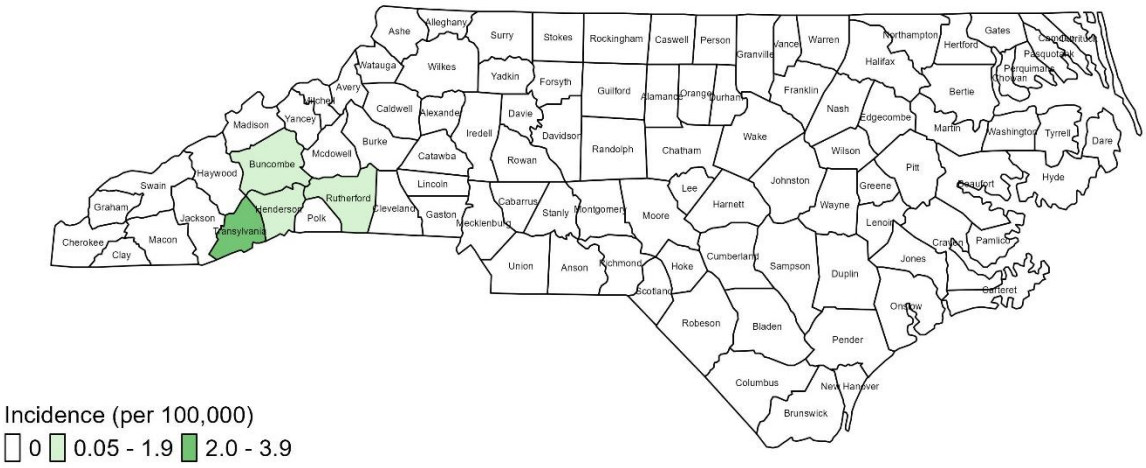


Two adults from central North Carolina have died in 2026 after contracting WNV. Older adults and individuals with underlying health conditions are at increased risk for severe outcomes and death. Additionally, CDC has released a Health Alert Notice highlighting a higher risk of severe mosquito-borne disease among patients using B cell-depleting or B cell-modulating medications. This year's fatality rate of 13.3% is the highest recorded since 2022, when it reached 16.7%.

*Rate calculated per 100,000 residents

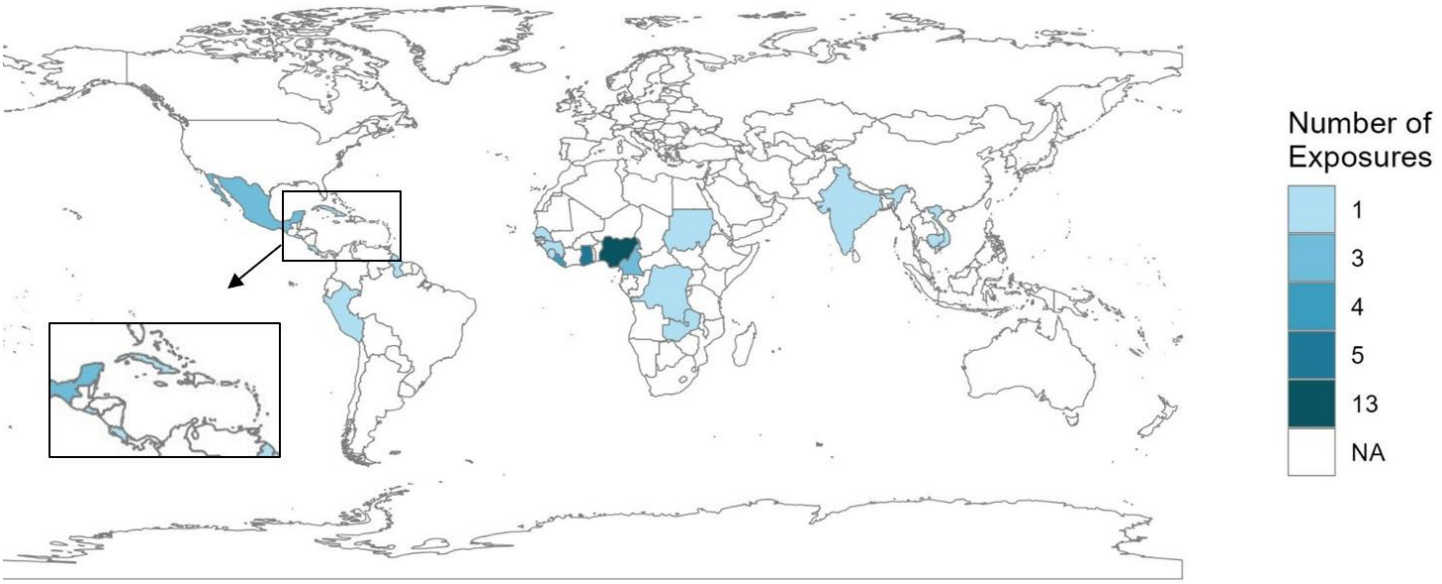
Mosquito-Borne Disease Cases

Neuroinvasive La Crosse Virus (LACV) Incidence Rate* by County, NC, 2026



Neuroinvasive LACV cases have been reported from four counties to date in 2026, with Buncombe County having the highest number of cases (n=3). Swain, Transylvania and Jackson counties have the three highest LACV incidence rates* in the country between 2003 and 2025. Most NC cases occur in southwest counties along the Tennessee and Georgia borders where the virus is amplified through transmission between mosquitoes and wildlife reservoirs, such as squirrels and chipmunks.

Imported Disease Exposure Countries, NC Cases, 2026

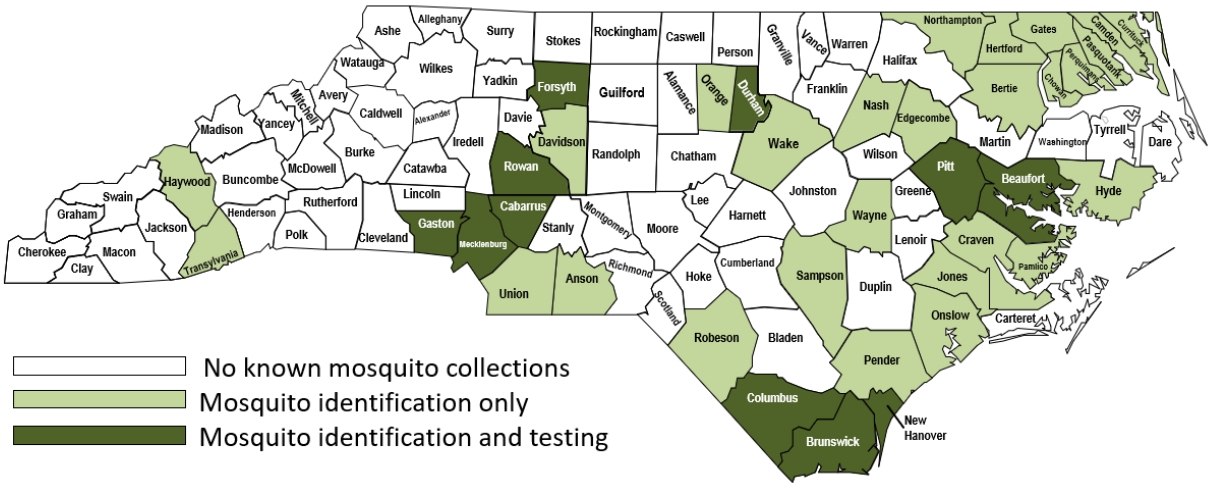


All malaria, dengue virus (DENV), and Chikungunya virus (CHIKV) cases reported in 2026 have been associated with international travel. Mexico has been the primary exposure location for DENV cases (n=3), whereas Nigeria has been the primary exposure location for malaria cases (n=13). As of September 2nd, Cuba meets the criteria for high DENV transmission, and several other countries are reporting above-average DENV case counts. The two NC CHIKV cases report exposure in Vietnam and Costa Rica. A CHIKV outbreak has been reported in multiple countries, including Costa Rica. No Zika virus cases have been reported among NC residents since 2024, but there is a level-two travel notice for Bali, Indonesia due to Zika identified in returning travelers.

*Rate calculated per 100,000 residents

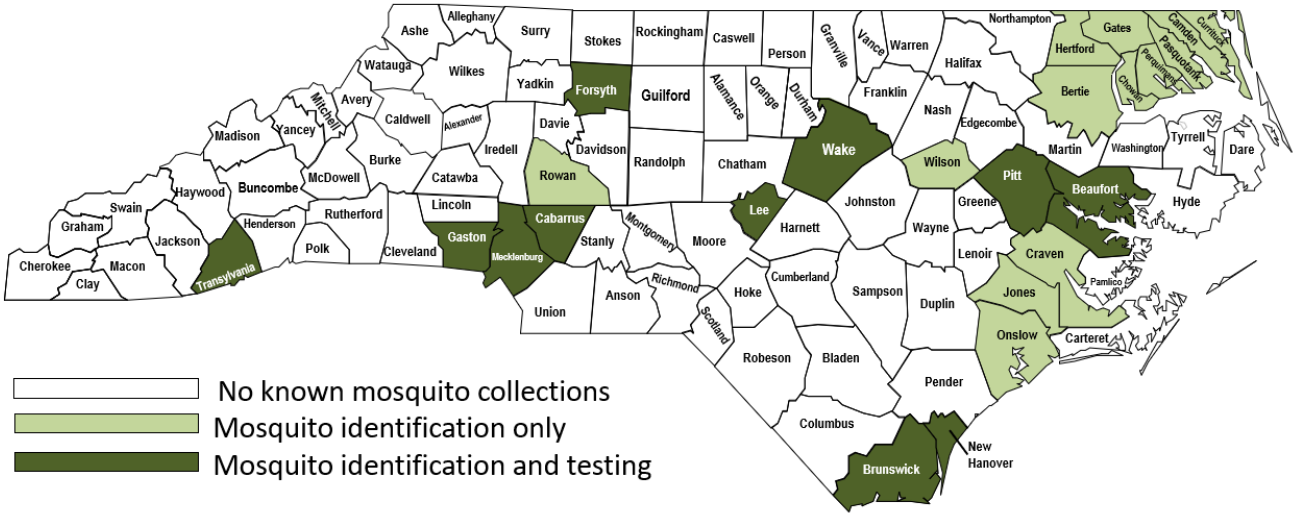
Mosquito Surveillance

NC Counties Collecting Mosquito Surveillance Data, 2021-2025



Mosquito identification is primarily done by counties with established vector control programs, but surveillance is also done on a case-by-case basis during disease outbreaks. Counties may receive state funding to collect and identify mosquitoes each month. State and federal funding also supports mosquito testing at the North Carolina State Laboratory of Public Health (NCSLPH); the number of counties that participate in this activity and the number of mosquitoes tested each year varies. All mosquito samples submitted to the NCSLPH are tested for West Nile Virus (WNV). Testing for additional pathogens (such as LACV and Eastern Equine Encephalitis [EEE]) is performed only at the request of the Local Health Department.

NC Counties Conducting Mosquito Surveillance, 2026

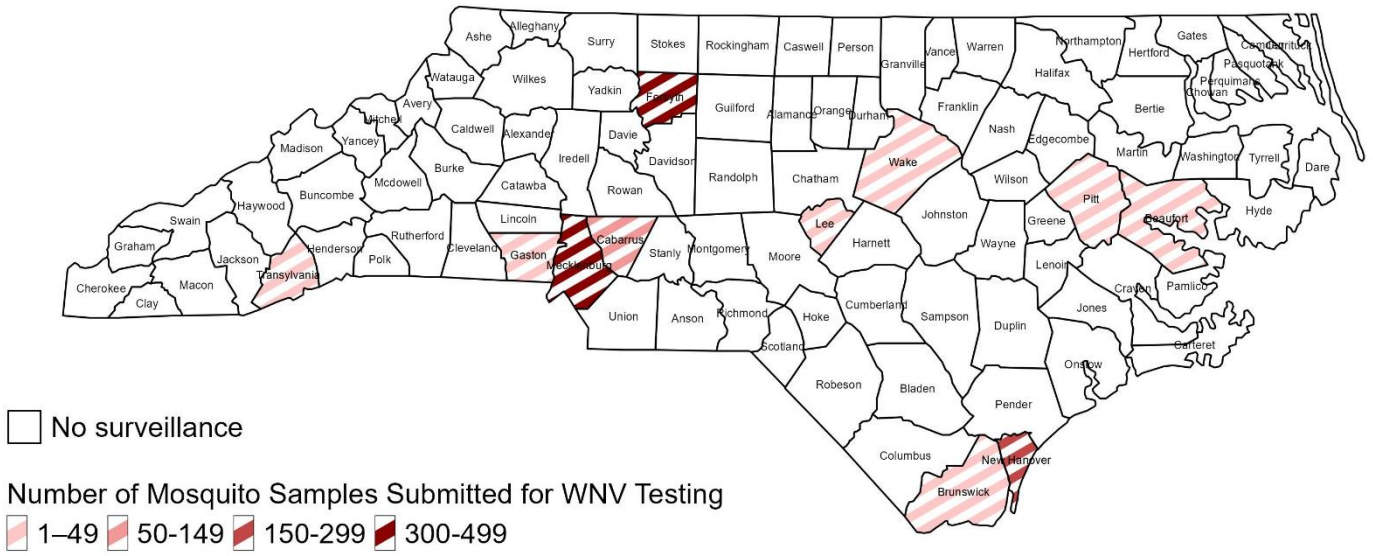


Since mosquito testing for the 2026 season began in July, nine counties have sent mosquito samples to the NCSLPH for testing, Transylvania County has submitted samples for testing to Western Carolina University (WCU) and New Hanover County tests its own samples. Thirteen additional counties have collected mosquitoes for identification only.

Source: NCDHHS

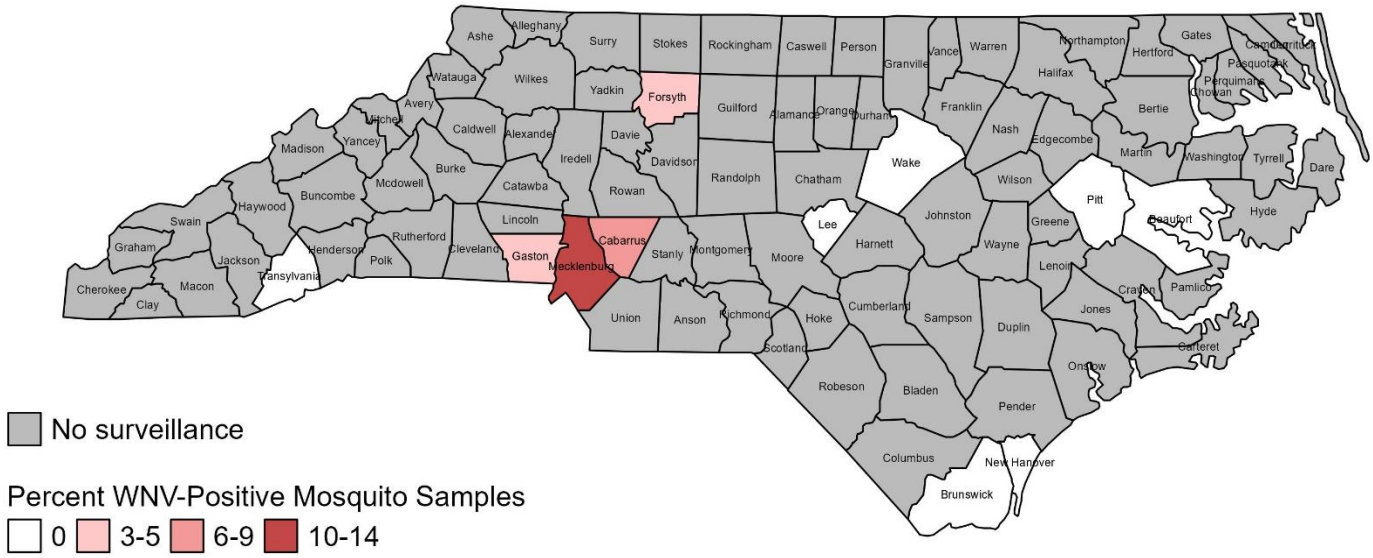
Mosquito Surveillance

WNV Mosquito Surveillance Testing Submissions, NC, 2026



To date in 2026, 1217 samples (each containing 1–50 mosquitoes) have been tested for WNV. Tested mosquitoes were collected from June 2, 2026, through October 6, 2026. Forsyth County has submitted the highest number of samples so far this year for WNV testing (n=453).

WNV Mosquito Surveillance Testing Results, NC, 2026



Mecklenburg County has the highest proportion of WNV-positive mosquito samples to date in 2026 with 12.7% of 353 samples testing positive. The statewide* year-to-date WNV positivity rate of 5.3% suggests elevated vector infection activity compared with the 2021–2025 statewide* year-to-date positivity rate range of 0.8% in 2021 to 2.5% in 2025. However, a greater number of mosquito samples have been tested in 2026 compared with previous years (995 samples tested at this point in 2025).

* Refer to the maps on page 3 for the corresponding counties included.

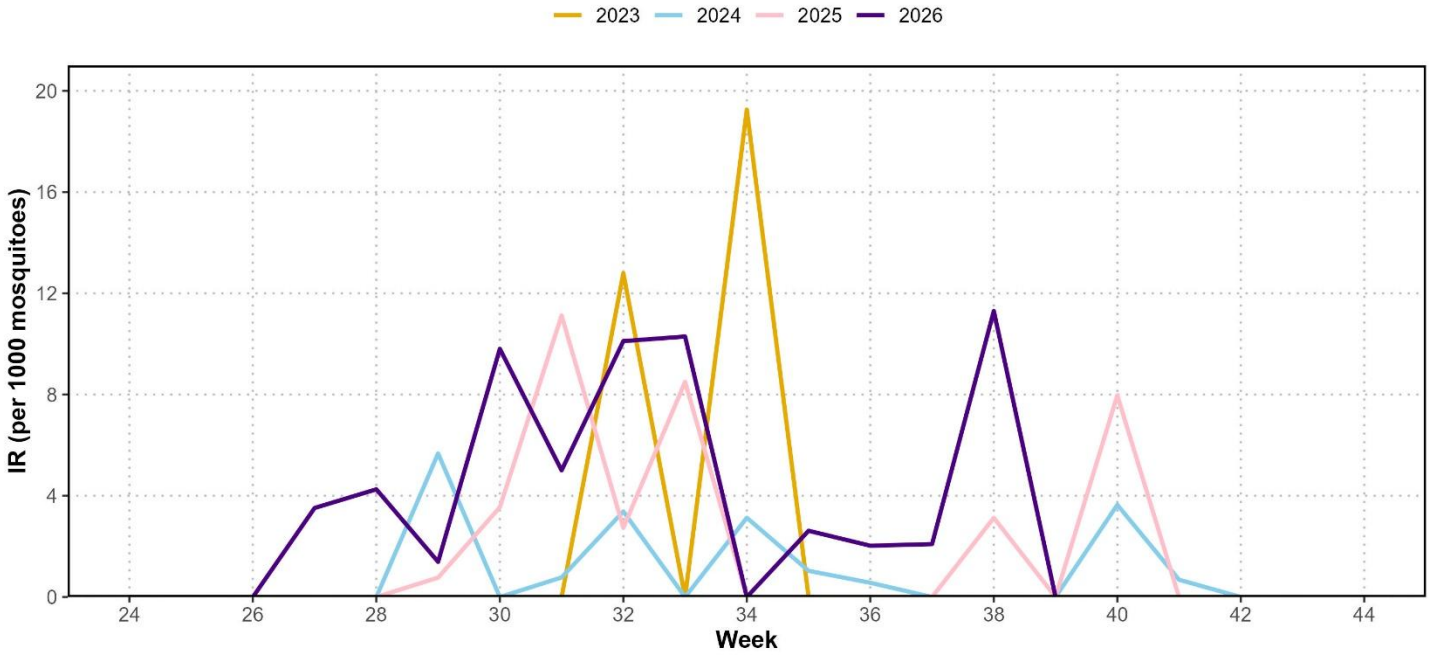
Mosquito Surveillance

Positive WNV Mosquito Samples by County, NC, 2026

County	Site Code	Collection Date	Test Date	Trap Type	Species	Mosquitoes in Sample
Mecklenburg	000000	9/22/2026	10/1/2026	GRVD-CDC	Culex pipiens	50
Mecklenburg	000000	9/22/2026	10/1/2026	GRVD-CDC	Culex pipiens	50
Mecklenburg	000000	9/22/2026	10/1/2026	GRVD-CDC	Culex pipiens	24
Mecklenburg	000000	9/22/2026	10/1/2026	GRVD-CDC	Aedes albopictus	3

The table above shows the collection and testing dates, species, and trap types for mosquito samples that tested positive for WNV in the past two weeks. No sample tested positive between October 5 – 9. For details on earlier positive mosquito samples, please refer to previous reports.

NC Statewide* WNV Infection Rate by Mosquito Collection Date, 2023-2026

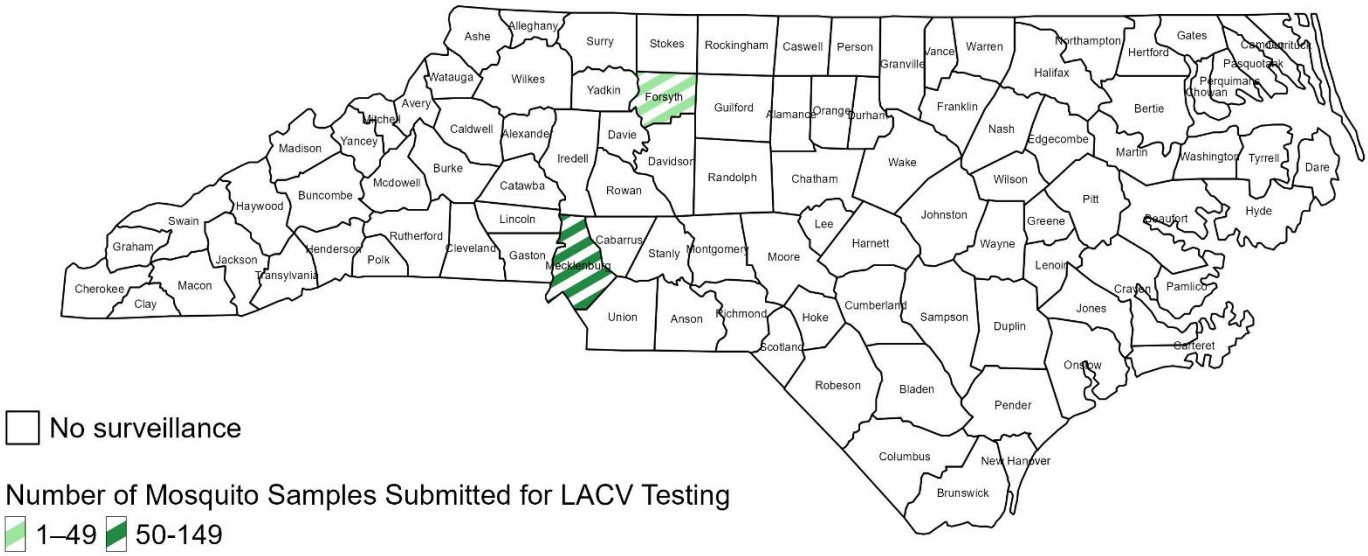


The statewide* infection rate (IR), calculated weekly based on mosquito collection dates, reflects the number of expected WNV-positive mosquitoes per 1,000 tested. The IR in 2026 has been the highest since 2023 in eight separate weeks and the second highest in all other weeks, except weeks 34 and 39. No mosquito samples collected in week 39 tested positive for WNV. This graph is limited to weeks 24-44 because WNV-positive samples have never been detected outside this period. Bias-corrected maximum likelihood estimates (MLE) were used for IR calculations.

* Refer to the maps on page 3 for the corresponding counties included.

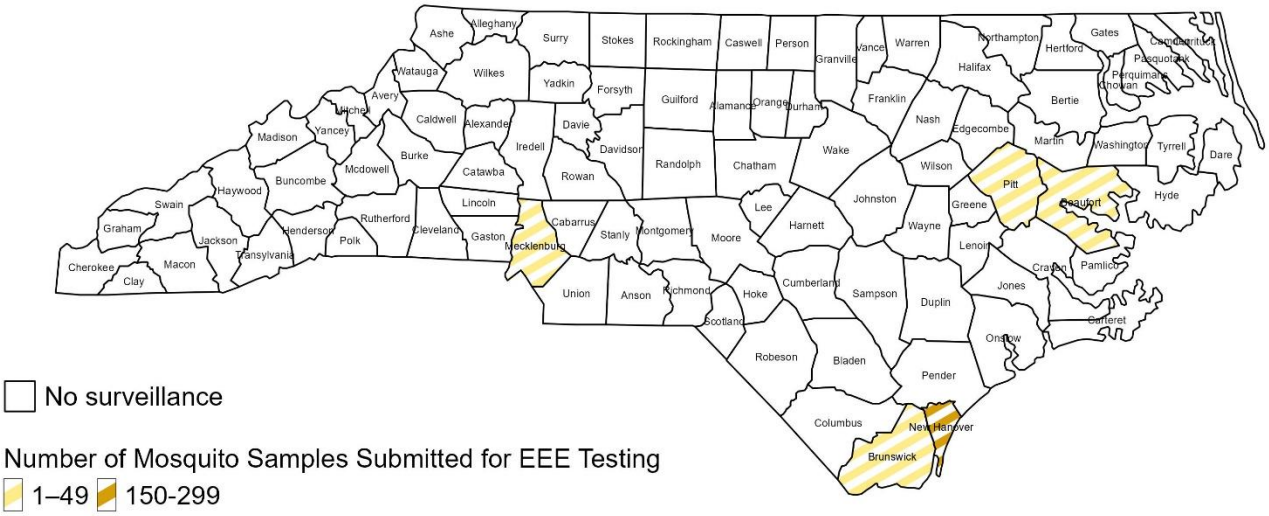
Mosquito Surveillance

LACV Mosquito Surveillance Testing Submissions and Results, NC, 2026



To date in 2026, 87 mosquito samples (1-50 individual mosquitoes per sample) have been tested at the NCSLPH for LACV. Three samples were tested for LACV over the past two weeks, and no LACV-positive mosquito samples have been detected this year. This result is expected, as LACV infection rates in mosquitoes are typically below 0.1% statewide*.

EEE Mosquito Surveillance Testing Submissions and Results, NC, 2026

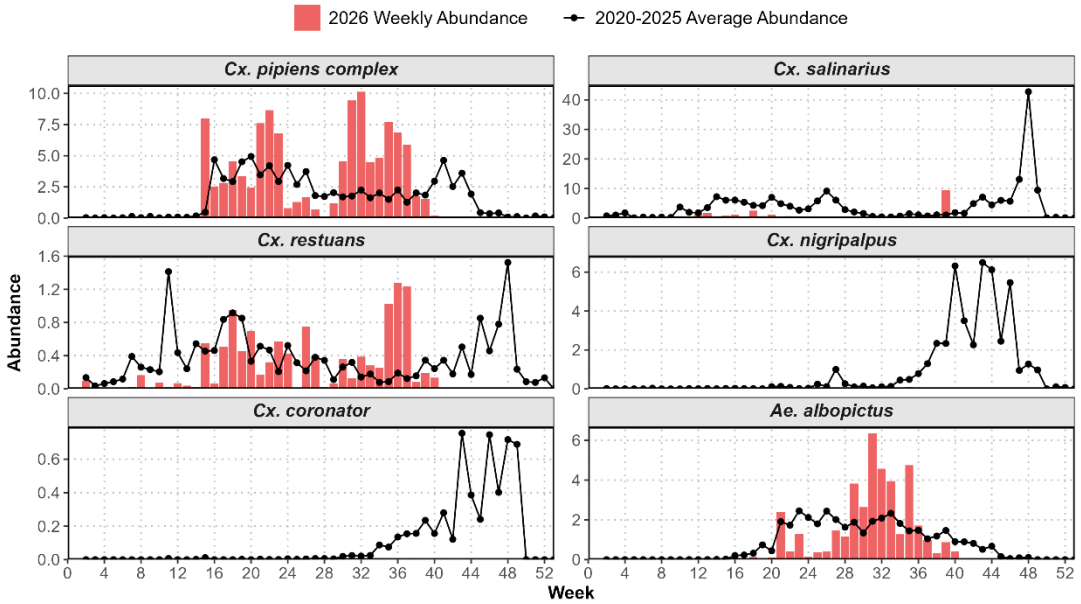


To date in 2026, 330 mosquito samples (1-50 individual mosquitoes per sample) have been tested for EEE, including 36 samples during the past two weeks. Most of these samples were tested by New Hanover County (n=230). No EEE-positive mosquito samples have been detected so far this year, which is expected since the most recent EEE-positive sample was reported in 2021.

* Refer to the maps on page 3 for the corresponding counties included.

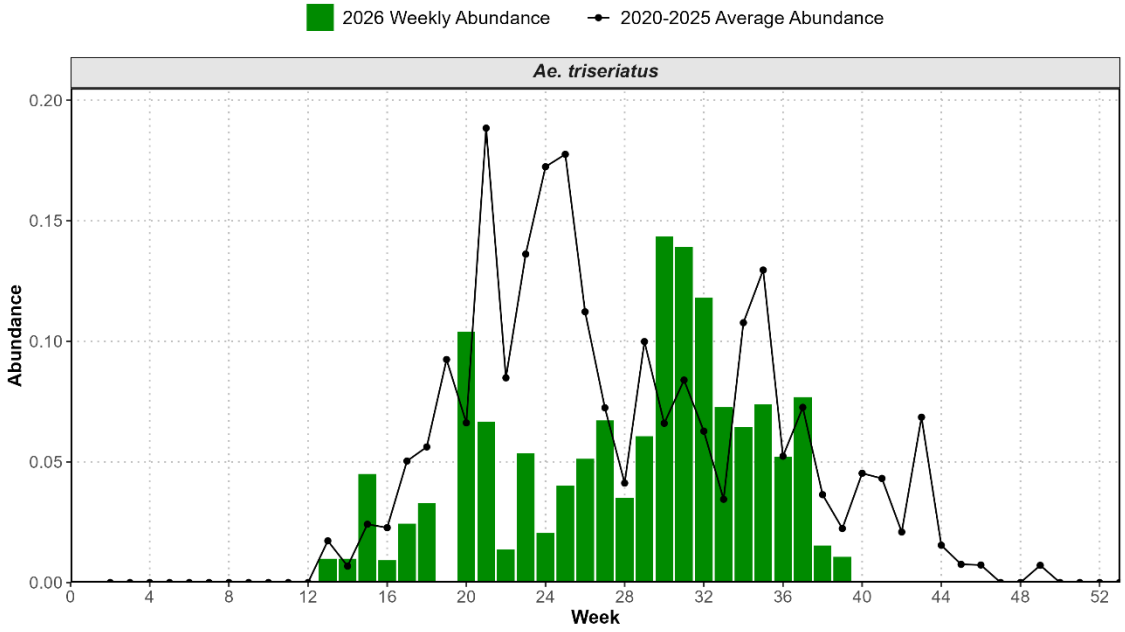
Disease-Specific Endemic Mosquito Species

NC Statewide* Weekly and 5-Year Average Abundance of WNV Vector Mosquitoes



Year-to-date collections (may or may not be tested) suggest reduced activity of *Culex restuans, Cx. coronator*, *Cx. salinarius*, and *Cx. nigripalpus* in NC compared with the previous five years. In contrast, *Cx. pipiens* complex and *Aedes albopictus* have exhibited increased activity so far this year. Mosquito abundance during weeks 39 and 40 of 2026 was at or below the five-year average for every species except *Cx. salinarius*, which exhibited an atypical increase in week 39.

NC Statewide* Weekly and 5-Year Average Abundance of LACV Vector Mosquitoes

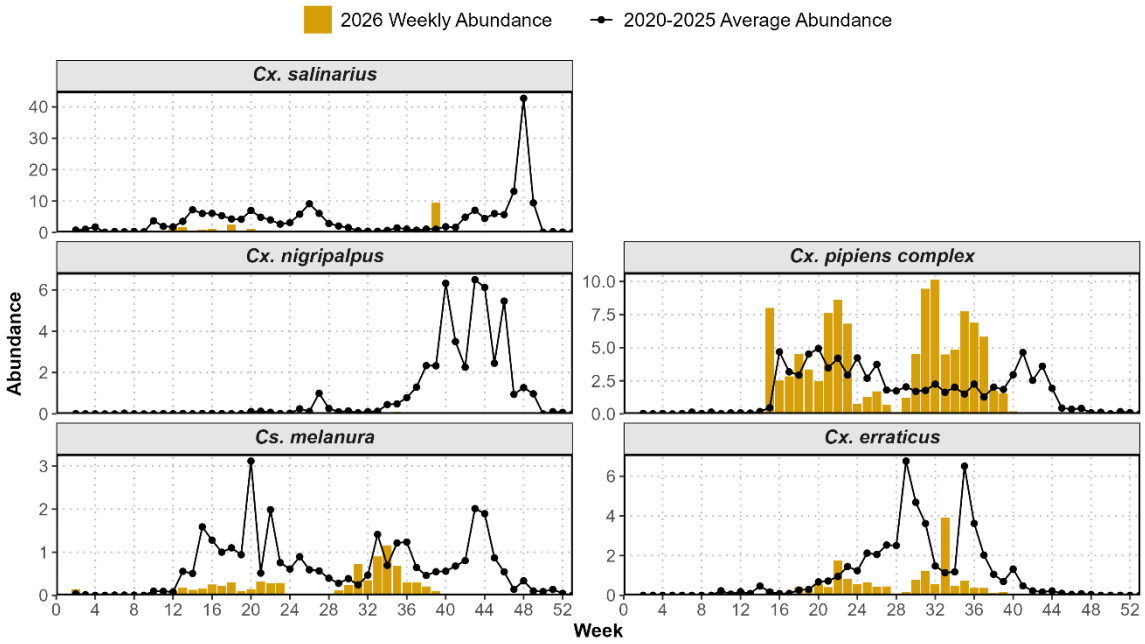


Year-to-date collections (may or may not be tested) of the LACV vector, *Aedes triseriatus,* suggest reduced activity in NC compared with the previous five years. Mosquito abundance was below average in weeks 39 and 40 of 2026. *Aedes triseriatus* demonstrated atypical peaks in abundance during weeks 30-32 this year.

* Refer to the maps on page 3 for the corresponding counties included.

Disease-Specific Endemic Mosquito Species

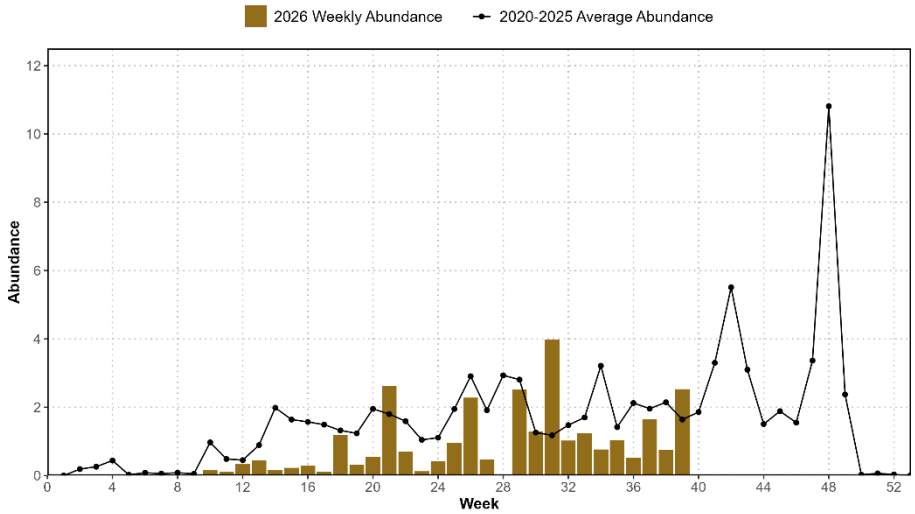
NC Statewide* Weekly and 5-Year Average Abundance of EEE Vector Mosquitoes



Year-to-date collections (may or may not be tested) suggest decreased activity among most EEE vector species in NC compared with the past five years, except for *Culex pipiens* complex, which shows increased activity. Mosquito abundance during weeks 39 and 40 of 2026 was at or below the five-year average for all species except *Cx. salinarius*, which exhibited an atypical increase in week 39.

Habitat-Specific Endemic Mosquito Species

NC Statewide* Weekly and 5-Year Average Abundance of Saltmarsh Habitat Mosquitoes



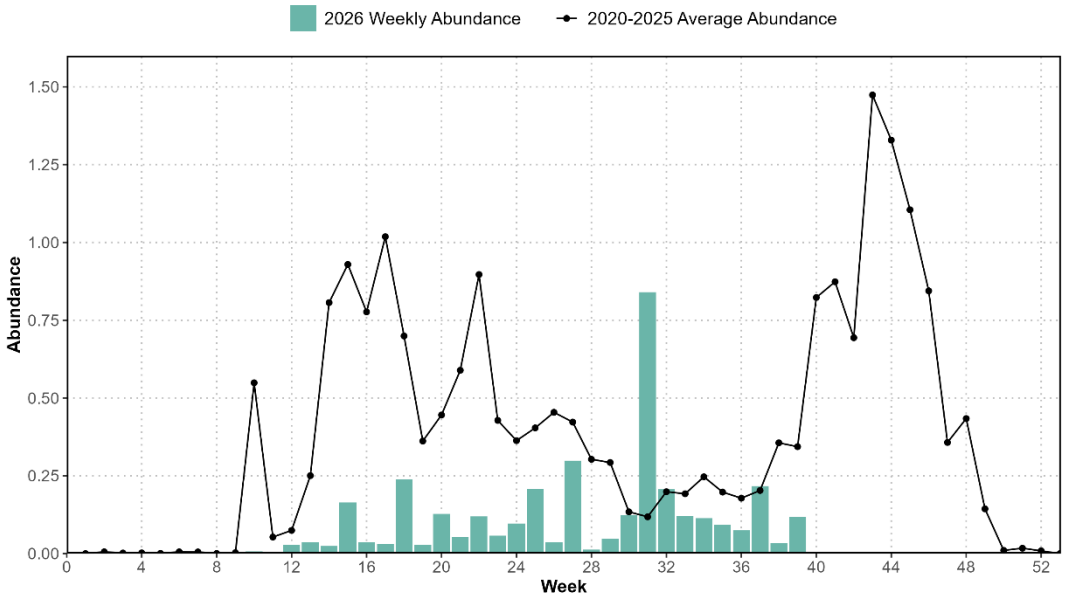
Saltmarsh Habitat Species:
Ae. cantator
Ae. sollicitans
Ae. taeniorhynchus
An. bradleyi
Cx. salinarius

Salt marshes are coastal wetlands that flood and drain with ocean tides. Mosquito abundance was slightly above average in week 39 of 2026 but dropped below average in week 40. The overall saltmarsh mosquito abundance this year is lower than the previous five years.

* Refer to the maps on page 3 for the corresponding counties included.

Habitat-Specific Endemic Mosquito Species

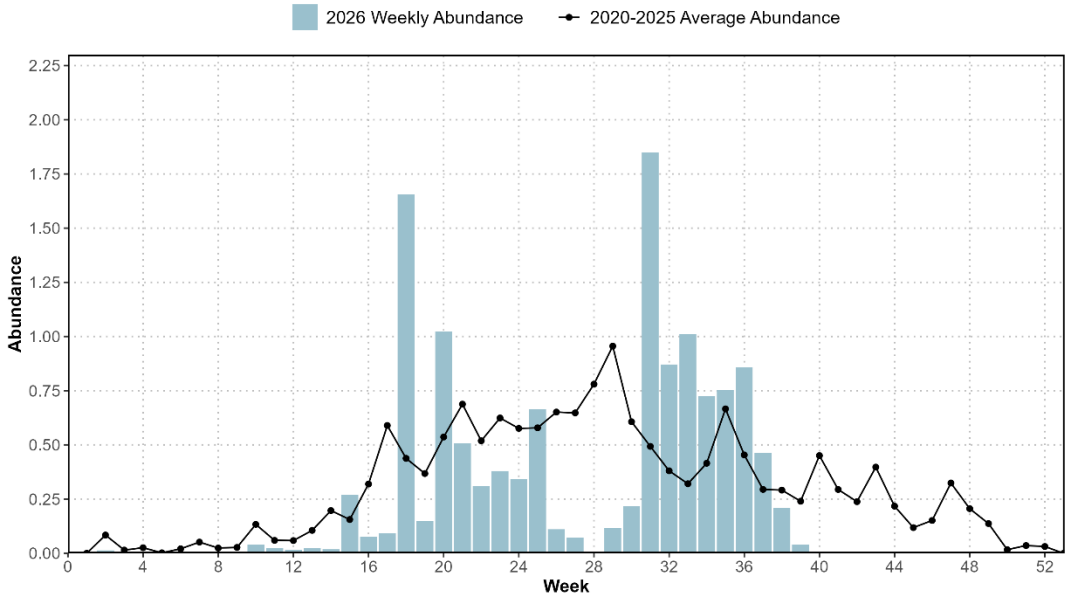
NC Statewide* Weekly and 5-Year Average Abundance of Floodwater Habitat Mosquitoes



Floodwater Habitat Species:
Ae. mitchellae
Ae. sticticus
Ae. trivittatus
Ae. vexans
An. diluvialis
Cx. nigripalpus
Ps. ciliata
Ps. columbiae
Ps. cyanescens
Ps. discolor
Ps. howardii

Floodwater habitats are flat to uneven landscapes, such as pastures, roadside ditches and neighborhood detention basins, that often flood. Mosquito abundance was below average in weeks 39 and 40 of 2026. Despite an atypical peak in week 31, the overall floodwater mosquito abundance this year is lower than the previous five years.

NC Statewide* Weekly and 5-Year Average Abundance of Standing Water Habitat Mosquitoes



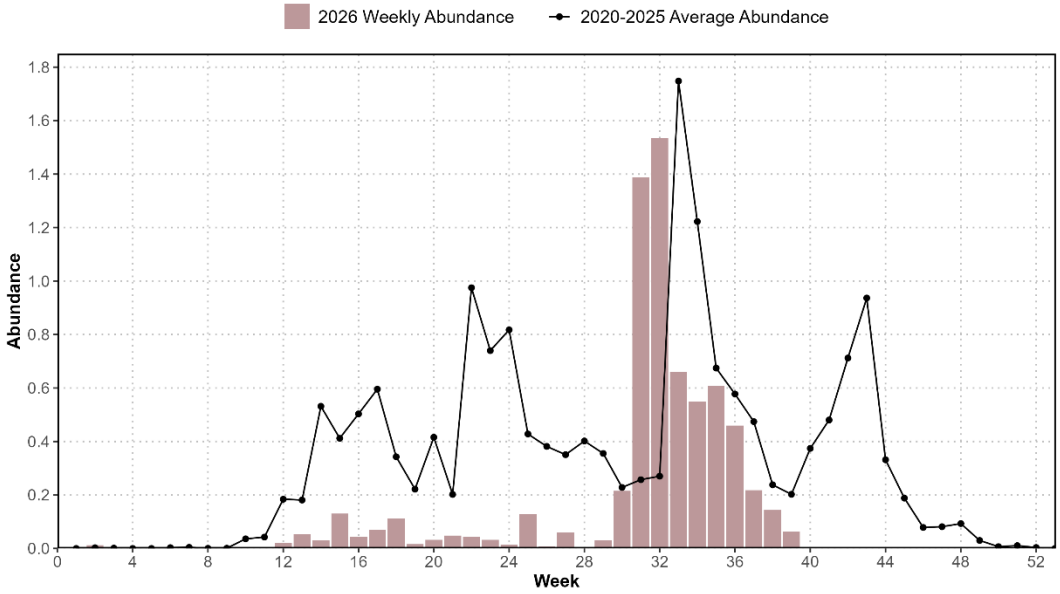
Standing Water Habitat Species:
Ae. cinereus
An. atropos
An. crucians
An. georgianus
An. maverlius
An. punctipennis
An. quadrimaculatus
An. smaragdinus
An. walkeri
Cq. perturbans
Cs. inornata
Cx. coronator
Cx. erraticus
Cx. peccator
Cx. pilosus
Cx. territans
Ur. lowii
Ur. sapphirina

Standing water habitats are permanent or semi-permanent stagnant bodies of water. Mosquito abundance was below average in weeks 39 and 40 of 2026. Although abundance was above average from weeks 31 through 37, the overall standing water mosquito abundance this year is lower than the previous five years.

* Refer to the maps on page 3 for the corresponding counties included.

Habitat-Specific Endemic Mosquito Species

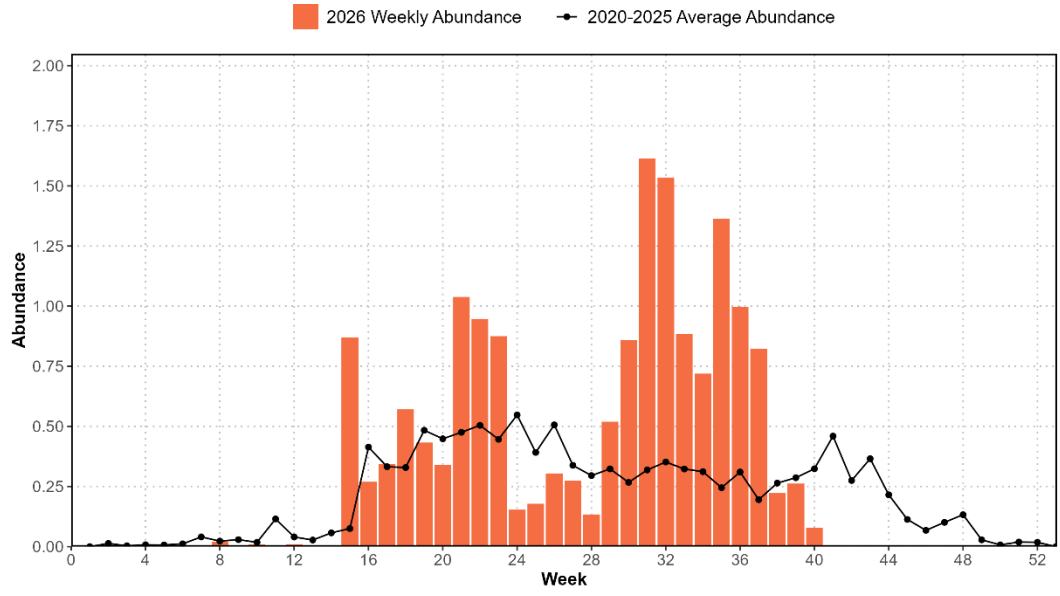
NC Statewide* Weekly and 5-Year Average Abundance of Woodland Pool Habitat Mosquitoes



Woodland Pool Habitat Species:
Ae. atlanticus
Ae. atlanticus/ tormentor
Ae. aurifer
Ae. canadensis
Ae. dupreei
Ae. fulvus pallens
Ae. grossbecki
Ae. infirmatus
Ae. thibaulti
Ae. tormentor
Cs. melanura
Ps. ferox
Ps. horrida
Ps. mathesoni

Woodland pools are small, seasonal forest wetlands that hold water in spring or fall but usually dry by late summer or during droughts. Mosquito abundance was below average in weeks 39 and 40 of 2026. The overall woodland pool mosquito abundance this year is lower than the previous five years.

NC Statewide* Weekly and 5-Year Average Abundance of Manmade Container Habitat Mosquitoes



Manmade Container Habitat Species:
Ae. aegypti
Ae. albopictus
Ae. atropalpus
Ae. hendersoni
Ae. japonicus
Ae. triseriatus
An. barberi
An. perplexens
Cx. pipiens complex
Cx. restuans
Or. alba
Or. signifera
Tx. rutilus rutilus
Tx. rutilus septentrionalis

Container habitats include natural or man-made containers commonly found in residential areas. Mosquito abundance was below average in weeks 39 and 40 of 2026. However, the overall manmade container mosquito abundance this year is higher than the previous five years.

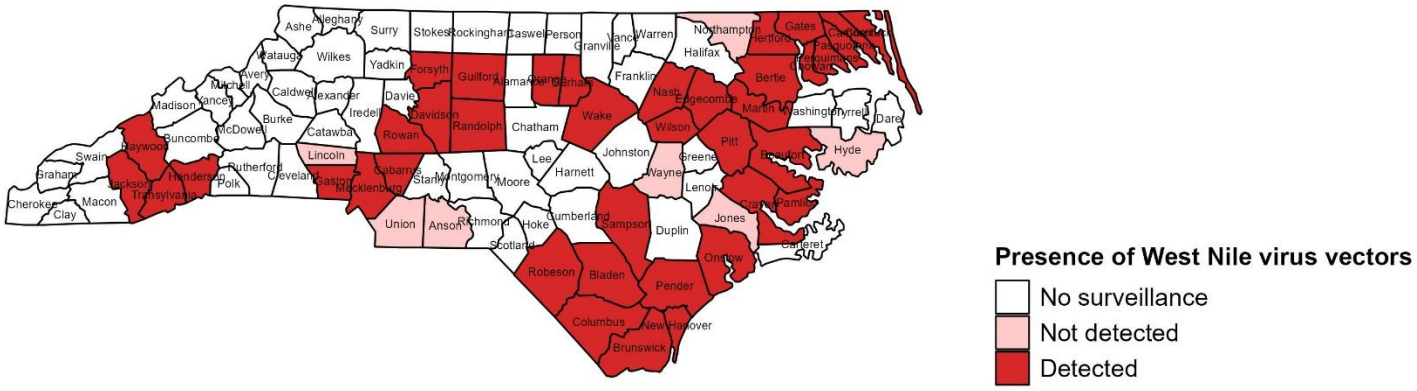
* Refer to the maps on page 3 for the corresponding counties included.

Appendix

Medically Important Mosquito Species of NC

Mosquito Species	Disease(s)	Primary Hosts	Adult Habitat	Larval Habitat	Biting Time
Eastern Treehole Mosquito *(Aedes triseriatus)*	LACV	Small mammals, humans	Hardwood forest & residential	Treeholes & small man-made containers	Daytime
Asian Tiger Mosquito *(Aedes albopictus)*	WNV & LACV	Humans, birds, mammals & other (opportunistic)	Thick vegetation; urban to rural	Small natural and man-made containers	Daytime
Northern and Southern House Mosquito *(Culex pipiens complex)*	WNV & EEE	Birds, mammals, and humans	Urban; suburban; homes	Small stagnant pools; Man-made containers	Dusk & night
Florida SLE Mosquito *(Culex nigripalpus)*	WNV & EEE	Birds, mammals, humans, & reptiles	Thick vegetation; urban to rural	Large stagnant vegetated pools	Dusk to dawn
Unbanded Saltmarsh Mosquito *(Culex salinarius)*	WNV & EEE	Birds, humans, mammals & other	Lowland forest, open marshes; homes	Large fresh to brackish pools and marshes	Sunset to early night
Culex erraticus	WNV & EEE	Birds in spring; mammals and humans in late summer and fall	Thick vegetation; urban to rural	Large stagnant pools with heavy vegetation	Dusk to dawn
Black-tailed Mosquito *(Culiseta melanura)*	EEE	Passerine birds	Hardwood swamps	Acidic stagnant pools in swamps or bogs	Sunset to sunrise
White-dotted Mosquito (*Culex restuans*)	WNV	Birds in spring; mammals and humans in late summer and fall	Hardwood forest & residential	Shaded stagnant water with decaying vegetation	Two hours past dusk to dawn

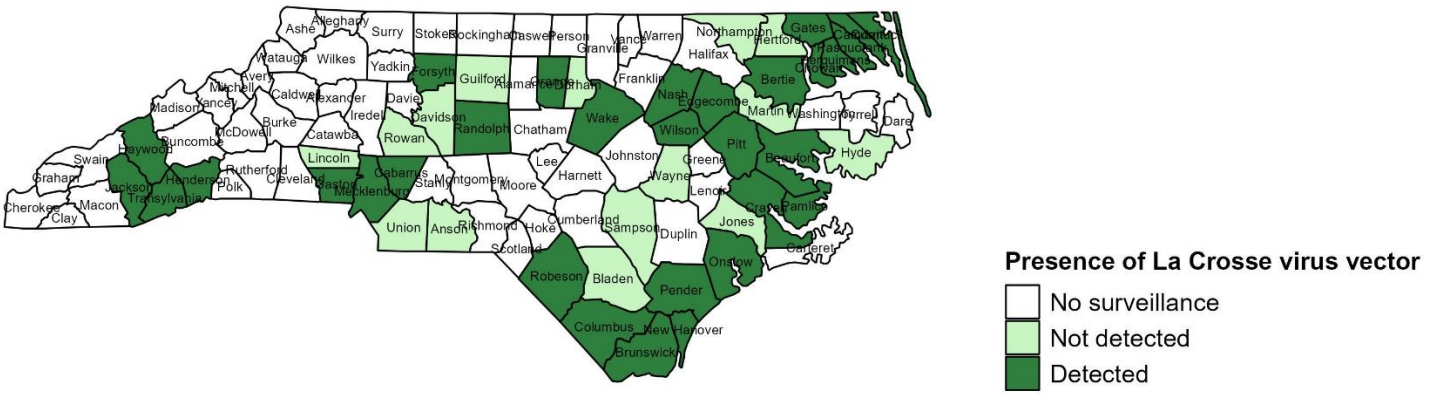
NC Distribution of WNV Mosquito Vectors, 2017-2025



Mosquito species capable of transmitting WNV to humans, consisting of *Aedes albopictus, Cx. pipiens complex, Cx. nigripalpus, Cx. salinarius, Cx. coronator,* and *Cx. restuans*, have been documented statewide in reports published through 2010. Since 2017, at least one of these species has been detected in 39 of the 46 counties conducting active surveillance.

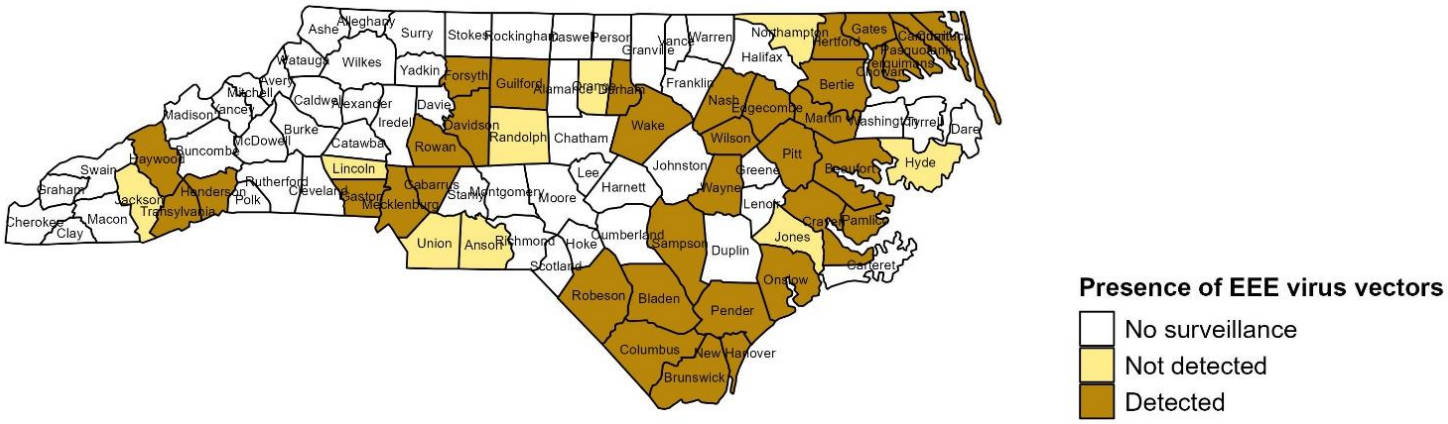
Medically Important Mosquito Species of NC

NC Distribution of LACV Mosquito Vectors, 2017-2025



The primary LACV mosquito vector (*Aedes triseriatus*) has been detected in every region of the state since 2017. However, mosquitoes from western NC counties with the highest LACV human disease rates are not routinely collected or tested because county-level vector surveillance programs are limited in this region.

NC Distribution of EEE Mosquito Vectors, 2017-2025



Mosquito species capable of transmitting EEE in humans, consisting of *Culex erraticus, Cx. nigripalpus, Cx. pipiens complex, Cx. salinarius*, and *Culiseta melanura* (primary vector), have been detected in 37 of the 46 counties conducting active surveillance from 2017 to 2025. The virus primarily affects the Tidewater and Inner Coastal Plain regions, where favorable habitats support viral amplification in local bird populations.