Vector-borne Surveillance Report

CDC Week 34: Aug 20 - 26, 2023

Report Highlights:

- ***NJDOH is reporting three cases of West Nile virus (WNV) infection in Camden, Bergen, and Middlesex counties.***
- ***There are 83 positive WNV pools in Week 34, for a total of 444 mosquito pools this year. The number of positive pools for week 34 is higher than last year and is at the 5-year average. Bergen County has the highest total number of positive pools, followed by Hudson County. The vector index is highest this week in Hunterdon and Somerset counties.***
- ***Two EEE positive mosquito pools were detected in week 34 in Atlantic and Camden counties, for a total of 3 positive pools this year, which is less than the 5-year average. There have been no human or animal cases of EEE in 2023.***
- ***The number of human babesiosis cases continues to rise and has already reached 85% of the 2022 total. The number of anaplasmosis cases is almost at 2022 levels.***
- ***The number of tick-related emergency department visits continues to decline and is below with the 5-year average.***
- ***The number of Lyme disease cases continued to decline but is slightly higher than this week last year.***
- ***N.J. vector-borne disease data is available online: https://dashboards.doh.nj.gov/views/public_dashboard/Intro and can be accessed on the "Fight the Bite N.J." webpage: https://www.nj.gov/health/cd/topics/vectorborne.shtml.***

Vector-borne Disease Case Summary

N.J.A.C.8:57 mandates public health reporting of communicable diseases. 2023 data reflect cases that have been approved by NJDOH and do not include cases under investigation. Due to the time needed for public health investigation, the number of tickborne diseases (with the exception of Lyme disease) may be significantly lower than actual counts and should be interpreted with caution. All 2023 numbers are preliminary and subject to change. "Presumptive positive" cases are pending additional testing. Case counts for 2022 reflect the annual total for that year.

Mosquito-borne diseases			Tickborne Diseases/Conditions		
	2023	2022		**2023**	2022
Chikungunya	**8**	2	Alpha-gal syndrome	**103**	234
Dengue	**19**	35	Anaplasmosis	**120**	125
Eastern equine encephalitis	**-**	-	Babesiosis	**248**	292
Jamestown Canyon	**-**	-	*Borrelia miyamotoi*	**2**	6
Malaria	**41**	86	Ehrlichiosis (*chaffeensis, ewingii*)	**75**	115
West Nile	**3**	20	Lyme disease*	**5,119**	5,897
Zika	**-**	-	Powassan	**-**	2
			Spotted fever group rickettsioses	**16**	35
			Tularemia	**2**	1

* Lyme disease surveillance transitioned to laboratory-based surveillance in 2022.

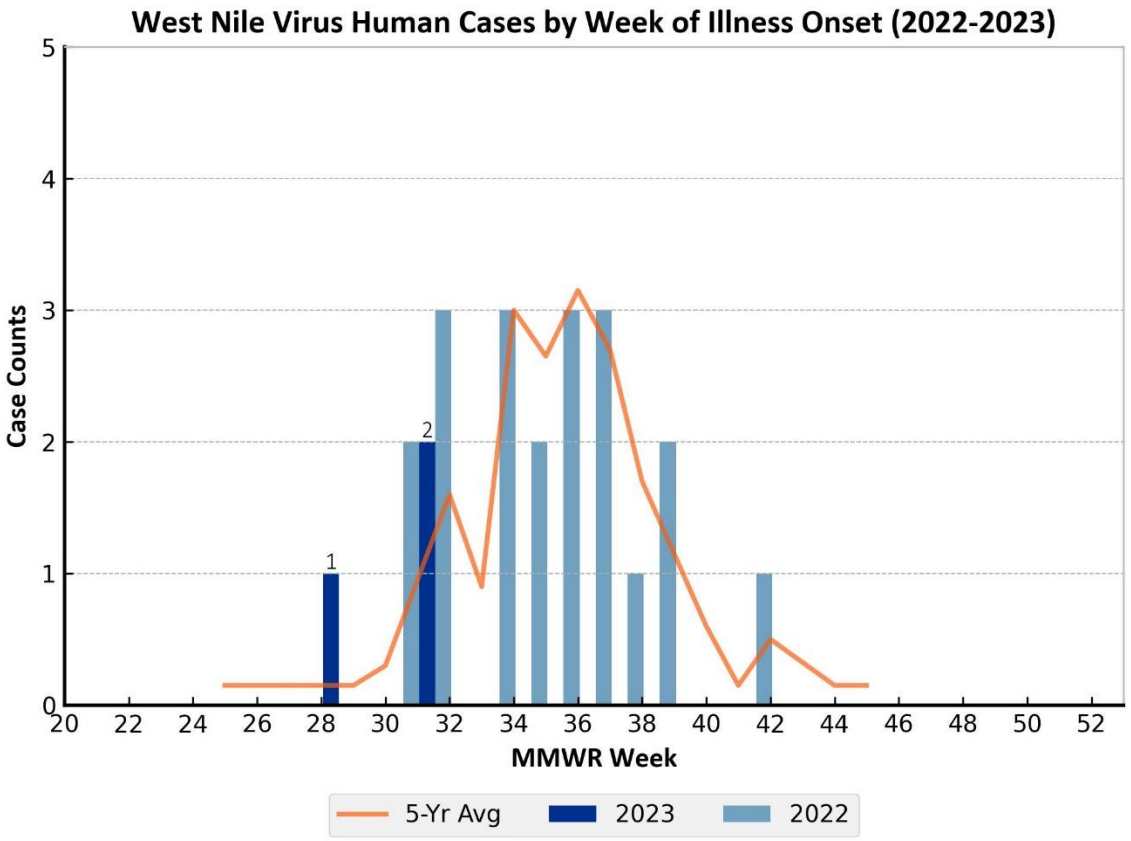
Mosquito-borne Disease Activity

The New Jersey Department of Health Public Health and Environmental Laboratories (PHEL) and the Cape May County Department of Mosquito Control Bio-safety Level 3 Laboratory (CMBSL3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.*

**Test results may be incomplete as counties submit pools for testing on specific weekdays. Data reflects test results downloaded from JerseySurv on August 30, 2023*

West Nile Virus

- There are three positive human WNV cases, 1 from week 28 in Camden County and 2 from week 31 in Bergen and Middlesex Counties. There have been no animal cases of WNV reported in New Jersey in 2023.
- 6,424 pools from 21 counties have been tested for WNV. 83 pools tested positive in Week 34 in 14 counties and a total of 444 mosquito pools have tested positive for WNV so far this year. The positive pools were found in: *Aedes albopictus (6), Aedes japonicus (4), Aedes triseriatus (2), Anopheles punctipennis (1), Culex (44), Culex erraticus (2), Culex pipiens (12), Culex pipiens/quinquefasciatus/restuans (10), Culex pipiens/restuans/salinarius (358), Culex restuans (2), Culiseta melanura (2), Psorophora ferox (1).*
- The first WNV positive mosquito pool (*Culex pipiens/restuans/salinarius)* was detected in week 24 from Bergen County. In 2022, the first WNV positive pool was detected in Week 22 from Burlington County.

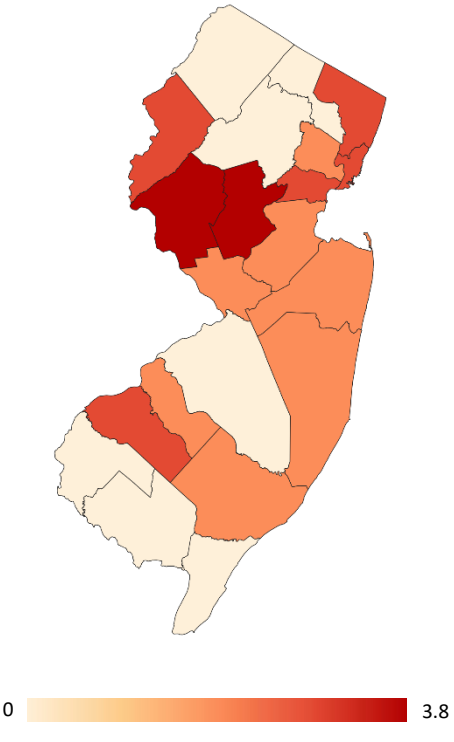


WNV Mosquito Pool Testing

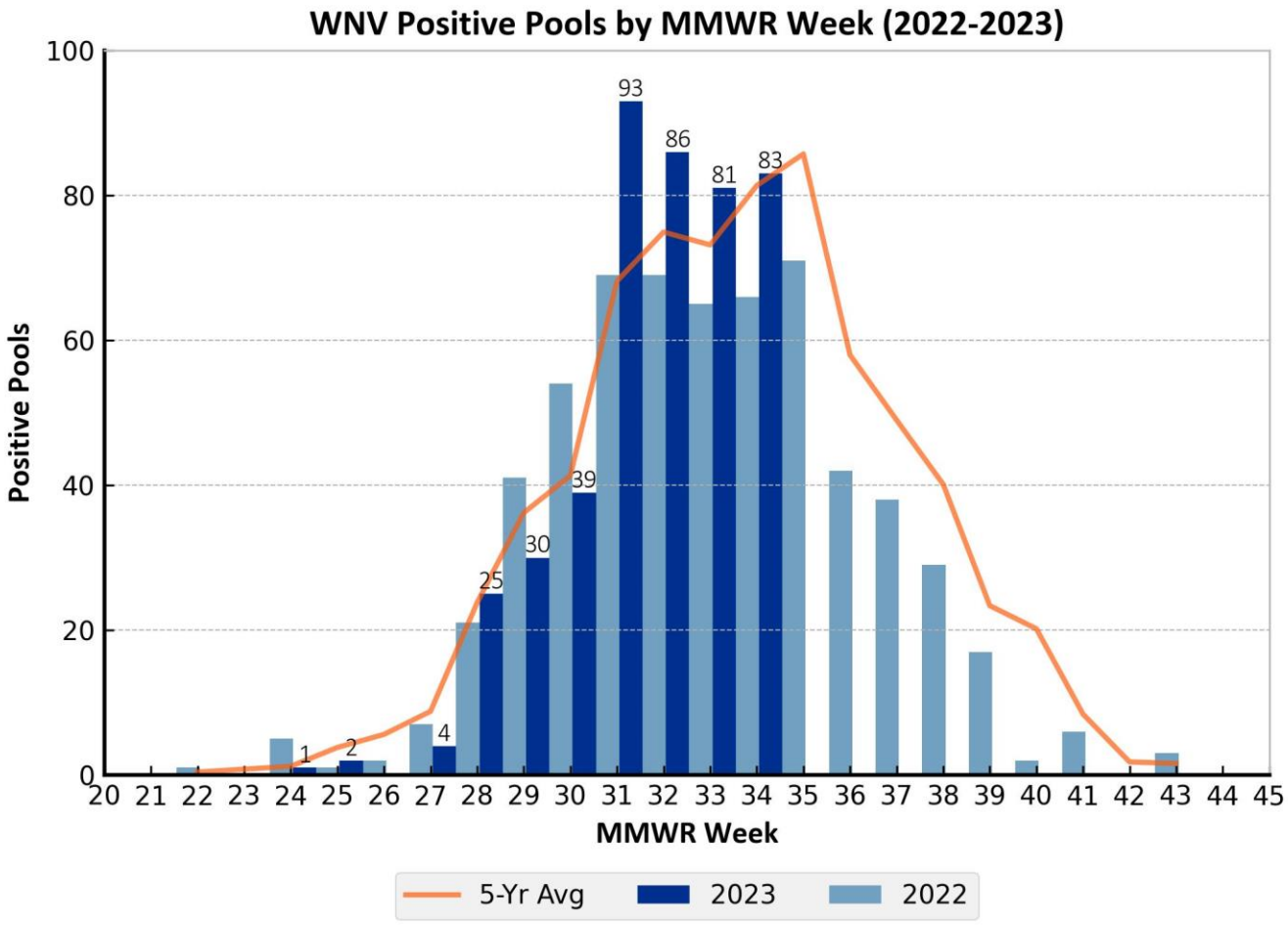
	WEEK 34 Positive Pools		Cumulative Pos. Total* (WEEK 34)		# Pools Tested*	WEEK 34 Vector Index	
County	**2023**	2022	**2023**	2022	**2023**	**2023[t]**	
Bergen	7	8	76	73	238	1.87	(↓)
Hudson	12	11	56	67	191	2.08	(↑)
Middlesex	4	4	40	38	233	0.38	(↓)
Somerset	8		35	16	209	3.82	(↑)
Union	6	5	32	35	142	2.46	(↓)
Mercer	11	1	29	20	298	0.72	(↓)
Hunterdon	11	2	24	8	284	3.83	(↑)
Warren	9	1	20	4	334	1.53	(↑)
Gloucester	4	4	19	15	560	1.12	(↑)
Cape May			15		919	0	(–)
Ocean	2	1	15	7	283	0.38	(↓)
Atlantic	2	1	14	3	261	0.46	(↓)
Burlington		3	14	20	174	0	(↓)
Morris		7	14	22	298	0	(–)
Passaic		7	11	27	169	0	(–)
Monmouth	5	2	10	18	307	0.72	(↑)
Sussex		3	10	4	514	0	(–)
Camden	1	4	7	14	234	0.30	(↑)
Salem			2	1	309	0	(–)
Essex	1	2	1	9	194	0.25	(↑)
Cumberland					273	0	(–)
Total	**83**	**66**	**444**	**401**	**6424**	-	

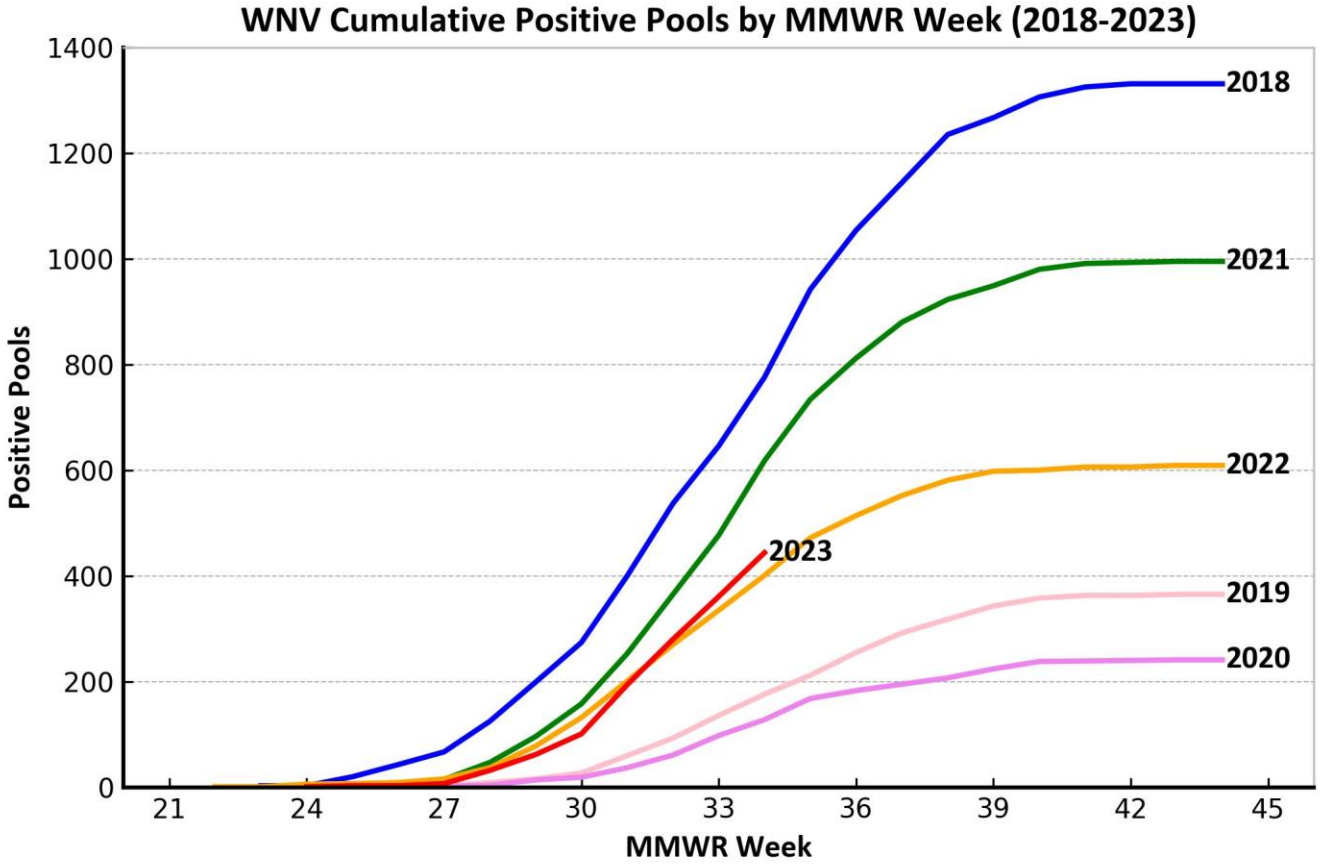
WEEK 34: Aug 21 - 27, 2022; Aug 20 - 26, 2023. *The number of pools tested for 9 counties includes early season collections that were specifically targeting JCV: Camden (9), Cape May (15), Cumberland (13), Essex (3), Gloucester (100), Mercer (7), Morris (18), Salem (8), Sussex (92), and Warren (27).

WNV Vector Index, WEEK 34[t]



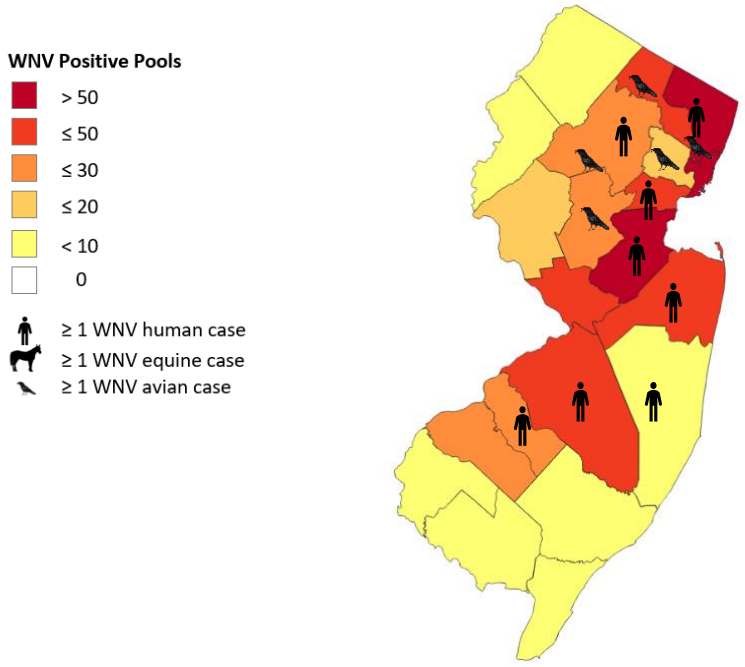
[t] Vector Index is calculated based on *Ae. taeniorhynchus, An. quadrimaculatus,* and all *Culex* species caught in gravid traps only.


WNV Positive Pools by MMWR Week (2022-2023)
Positive Pools
MMWR Week
5-Yr Avg
2023
2022
93
86
81
83
39
30
25
4
2
1


WNV Cumulative Positive Pools by MMWR Week (2018-2023)
Positive Pools
MMWR Week
2018
2021
2022
2023
2019
2020

2022 WNV Activity

Cumulative WNV Activity, 2023



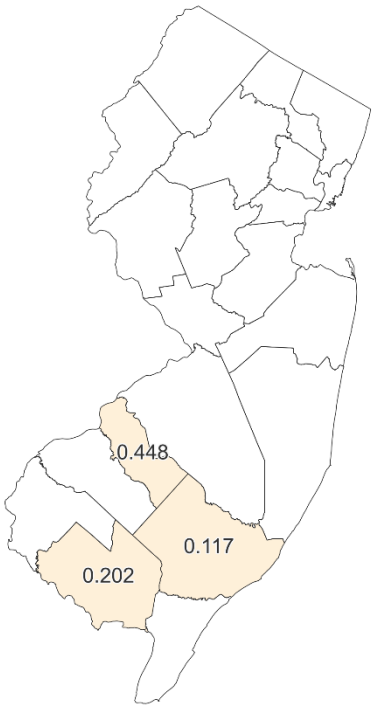
Eastern Equine Encephalitis

- There have been no human or animal cases of EEE in New Jersey in 2023. EEE human cases were last reported in 2019 (4 cases).
- A total of 6,264 mosquito pools from 21 counties have been tested for EEE with three pools testing positive in Atlantic, Camden, and Cumberland counties. The positive pools were found in: *Culiseta melanura (2), Culex sp. (1)*. The first positive EEE pool *(Culiseta melanura)* was identified in Cumberland County in week 30. In 2022, the first EEE positive pool was detected in Week 34 from Morris County.

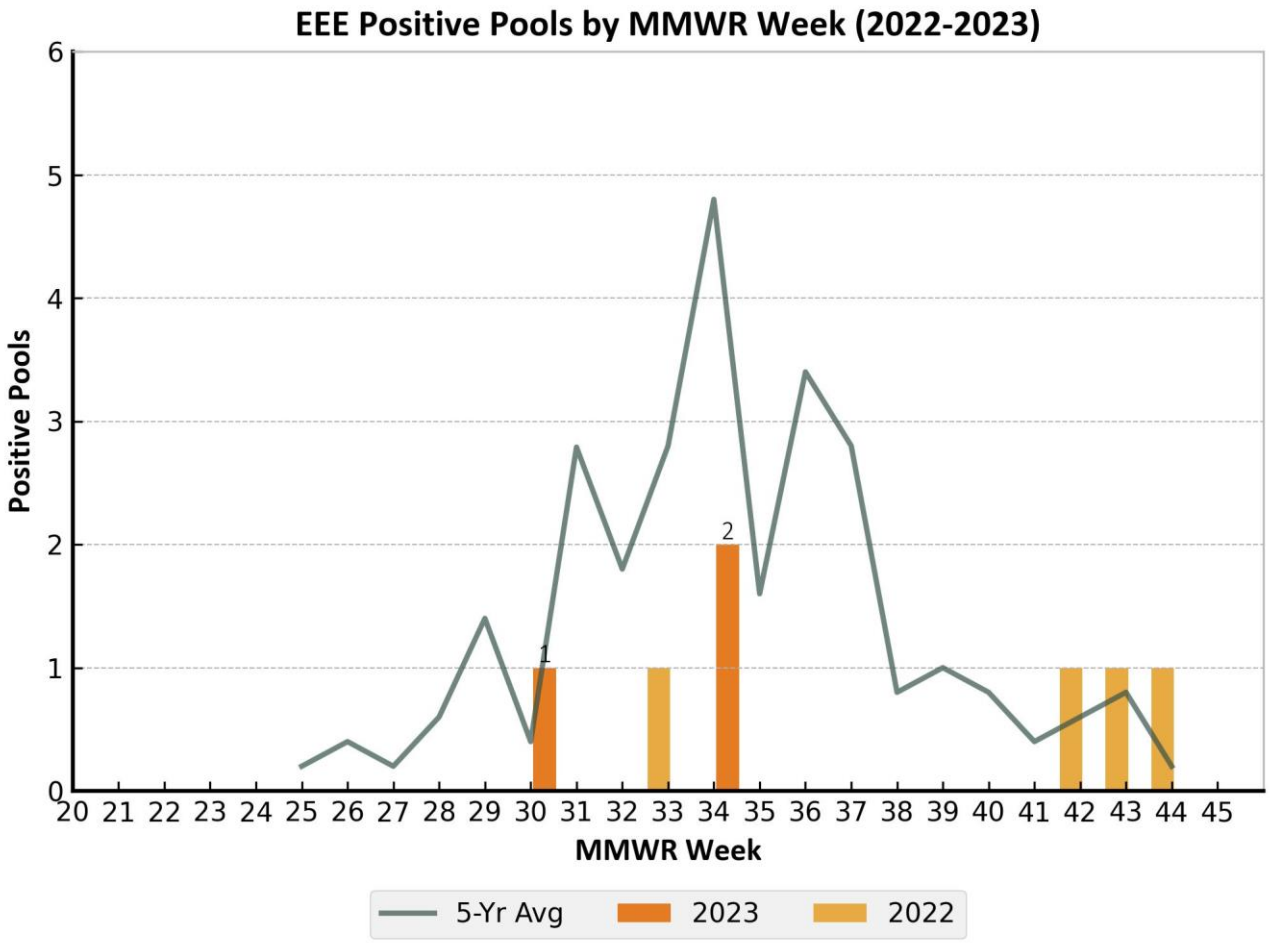
EEE Mosquito Pool Testing

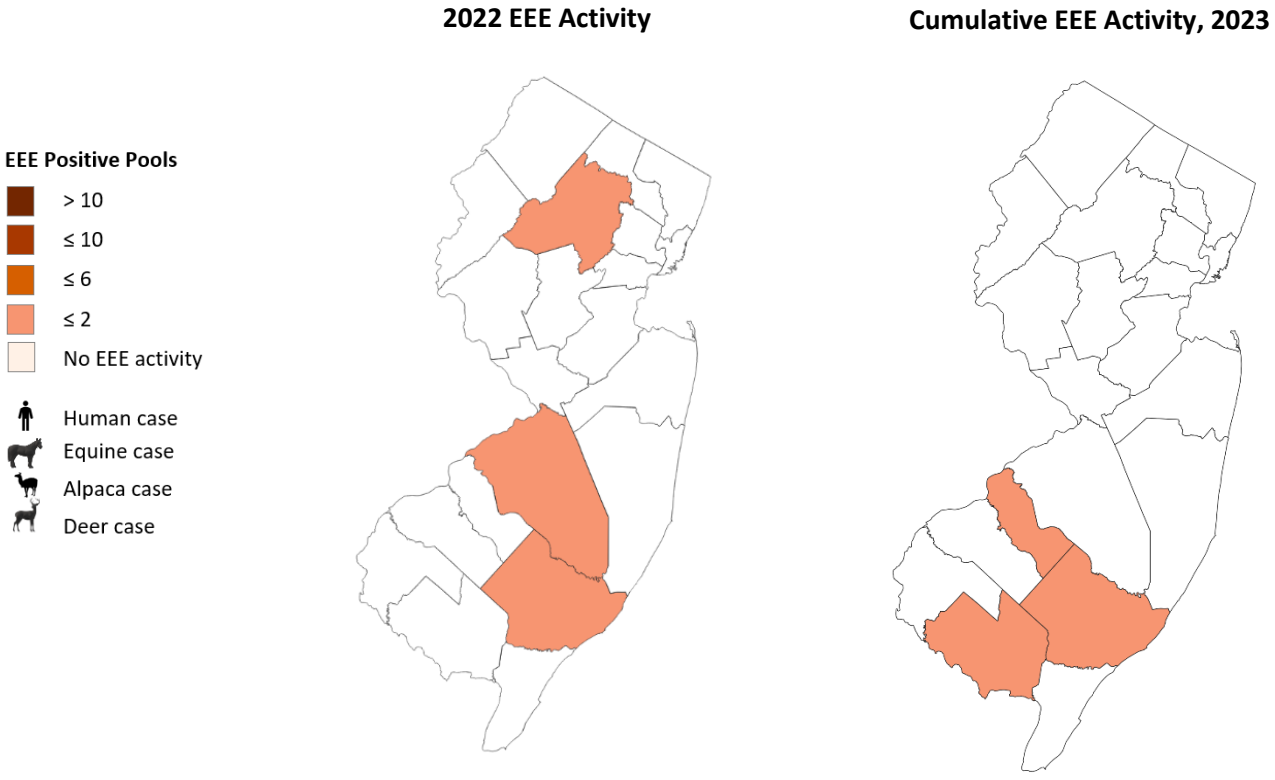
	WEEK 34 Positive Pools		Cumulative Pos. Total* (WEEK 34)		# Pools Tested	Cumulative MFIR
County	**2023**	2022	**2023**	2022	**2023**	**2023**
Atlantic	1		1		261	**0.117**
Camden	1		1		221	**0.448**
Cumberland			1		273	**0.202**
Bergen					238	
Burlington					169	
Cape May					849	
Essex					194	
Gloucester					557	
Hudson					191	
Hunterdon					281	
Mercer					286	
Middlesex					233	
Monmouth					307	
Morris				1	298	
Ocean					278	
Passaic					169	
Salem					288	
Somerset					209	
Sussex					504	
Union					142	
Warren					316	
Total	**2**	**0**	**3**	**1**	**6264**	-

Cumulative EEE MFIR, 2023



WEEK 34: Aug 21 - 27, 2022; Aug 20 - 26, 2023 *includes early season pools from 9 counties: Camden (9), Cape May (15), Cumberland (13), Essex (3), Gloucester (100), Mercer (7), Morris (18), Salem (8), Sussex (92), and Warren (27).


EEE Positive Pools by MMWR Week (2022-2023)
Positive Pools
0
1
2
3
4
5
6
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45
MMWR Week
1
2
5-Yr Avg
2023
2022


2022 EEE Activity
Cumulative EEE Activity, 2023
EEE Positive Pools
> 10
≤ 10
≤ 6
≤ 2
No EEE activity
Human case
Equine case
Alpaca case
Deer case

Jamestown Canyon Virus

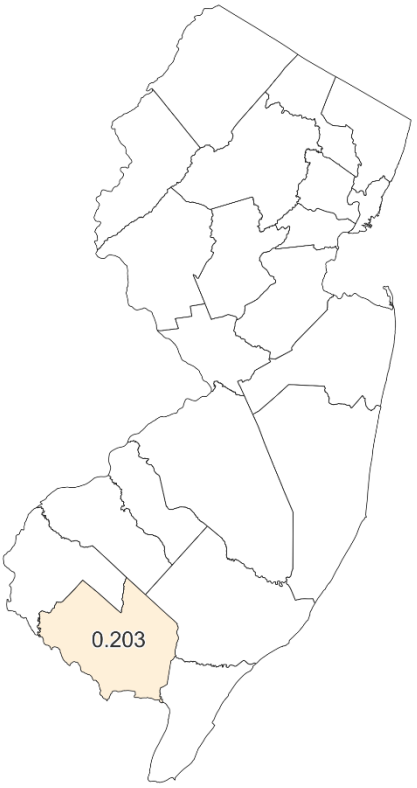
- There have been no human cases of JCV in New Jersey in 2023.
- 5,337 mosquito pools from 21 counties have been tested for JCV. One positive JCV mosquito pool *(Anopheles quadrimaculatus s.l.)* was identified in Cumberland County in week 25. In 2022, the first JCV positive pool was detected in Week 22 (Bergen County).
- JCV can be detected in early-season mosquitoes. Nine counties submitted early season mosquito pools for JCV testing, with collection dates starting the 1st week of April. These are Camden (9), Cape May (15), Cumberland (13), Essex (3), Gloucester (100), Mercer (7), Morris (18), Salem (8), Sussex (92), and Warren (27). None of the early-season pools was positive for JCV.

JCV Mosquito Pool Testing

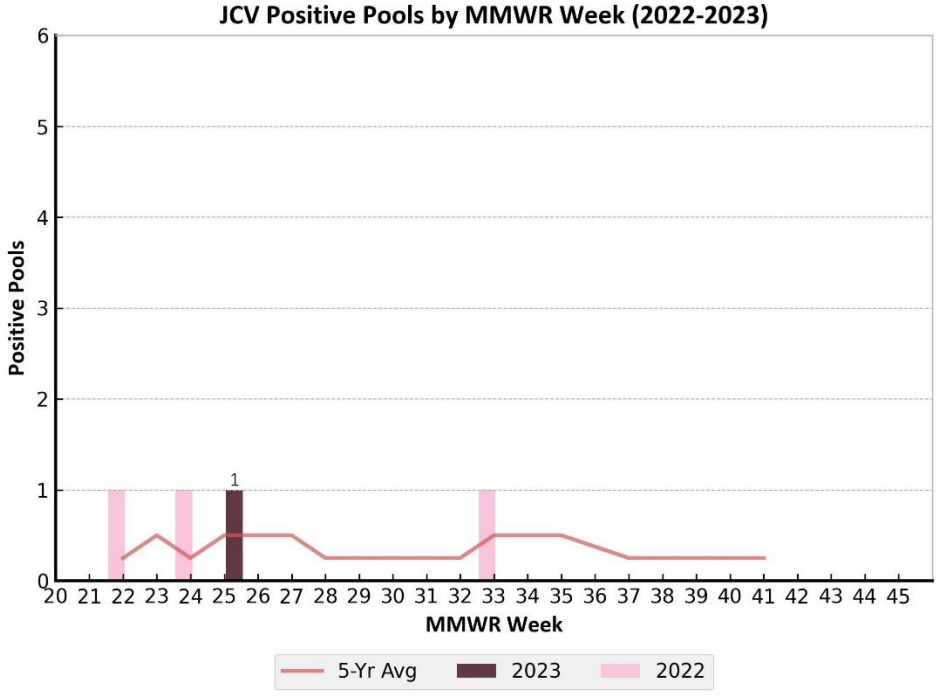
	WEEK 34 Positive Pools		Cumulative Pos. Total* (WEEK 34)		# Pools Tested	Cumulative MFIR
County	**2023**	2022	**2023**	2022	**2023**	**2023**
Cumberland			1		273	0.203
Atlantic					261	
Bergen				2	238	
Burlington					169	
Camden					208	
Cape May					349	
Essex					194	
Gloucester					556	
Hudson					191	
Hunterdon					281	
Mercer					286	
Middlesex					233	
Monmouth					307	
Morris					298	
Ocean					278	
Passaic					169	
Salem					282	
Somerset					209	
Sussex				1	504	
Union					142	
Warren					316	
Total	-	**1**	**1**	**3**	**5337**	-

WEEK 34: Aug 21 - 27, 2022; Aug 20 - 26, 2023 *includes early season pools from 9 counties

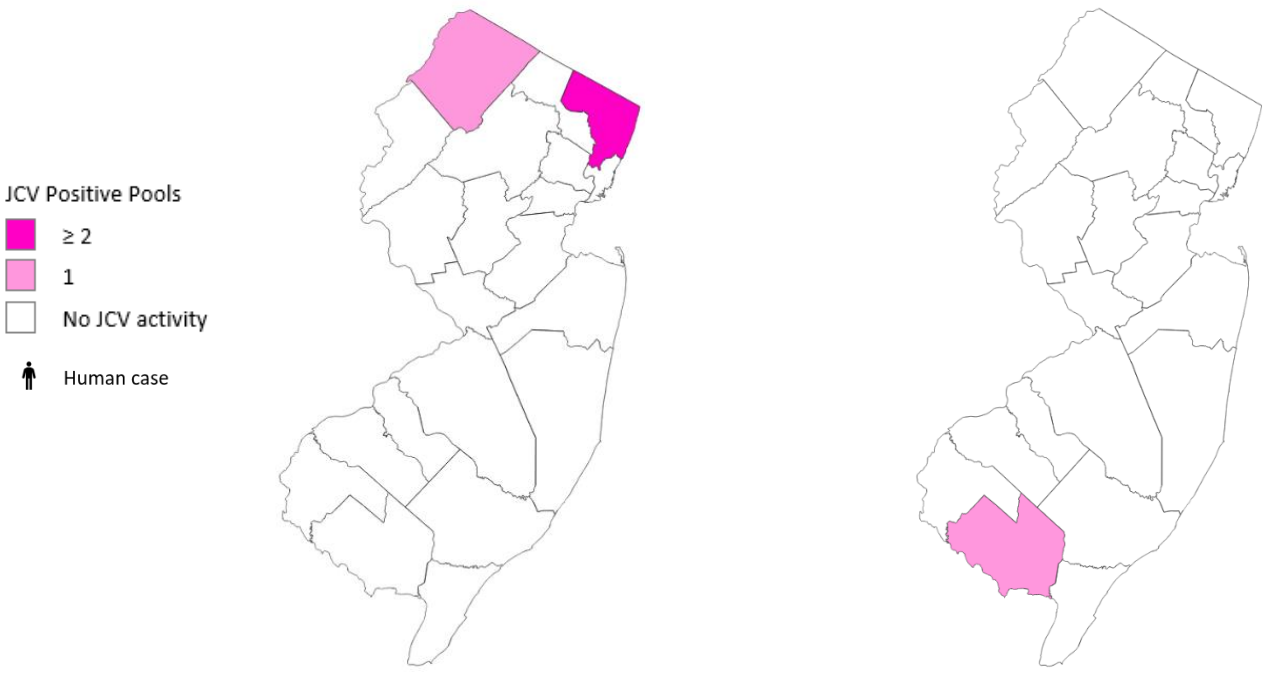
Cumulative JCV MFIR, 2023



JCV Positive Pools by MMWR Week (2022-2023)



2022 JCV Activity **Cumulative JCV Activity, 2023**



Other Mosquito-borne Viruses

- Mosquito pools from 21 counties have been tested for other arboviruses with no positive results.

Cumulative 2023 Mosquito Pool Testing (Other Viruses[a])

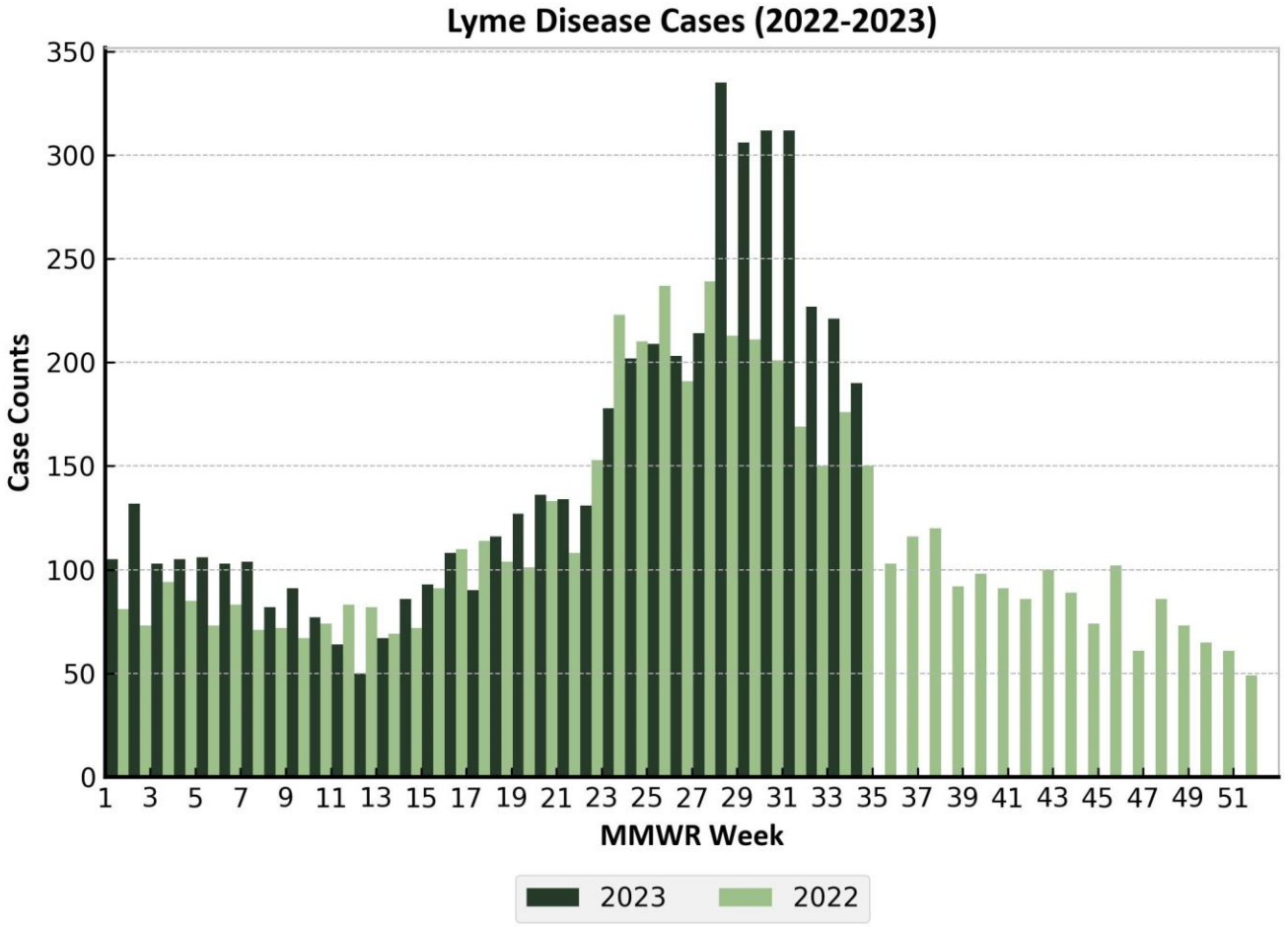
	SLE		LAC		CHIKV		DENV		ZIKV	
County	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	261		4							
Bergen	238				2		2		2	
Burlington	169		5		2		2		2	
Camden	220		10		3		3		3	
Cape May	749		21		130				130	
Cumberland	273									
Essex	194									
Gloucester	556		2							
Hudson	191									
Hunterdon	281		3							
Mercer	286		12		2		2		2	
Middlesex	233				2		2		2	
Monmouth	307				2		2		2	
Morris	298				3		3		3	
Ocean	278		5		1		1		1	
Passaic	169		8							
Salem	285		21		1		1		1	
Somerset	209									
Sussex	504		12							
Union	142									
Warren	316		19							
Total	**6159**	**-**	**122**	**-**	**148**	**-**	**18**	**-**	**148**	**-**

[a] St. Louis virus (SLE), La Crosse encephalitis (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)
Numbers in white columns represent number of pools tested to date in 2023
Number in blue shaded columns represent positive pools in 2023

Tick-borne Disease Activity

Lyme Disease

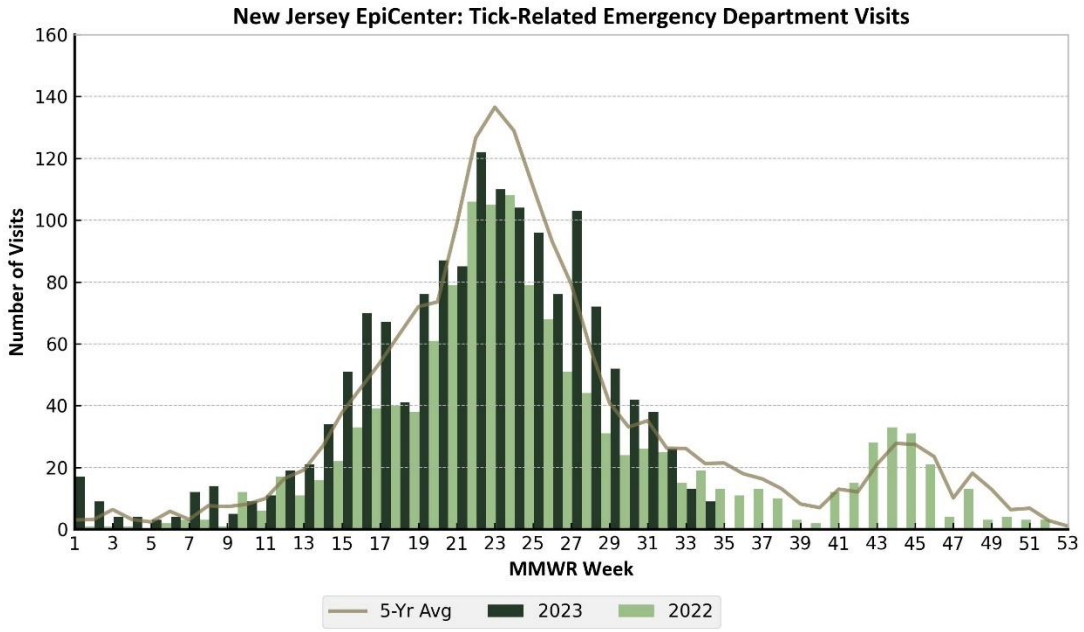
- There have been 5,119 cases of Lyme disease reported in New Jersey in 2023 in 21 counties.
- The number of cases in Week 34 continued to decline and is slightly higher than this week last year.

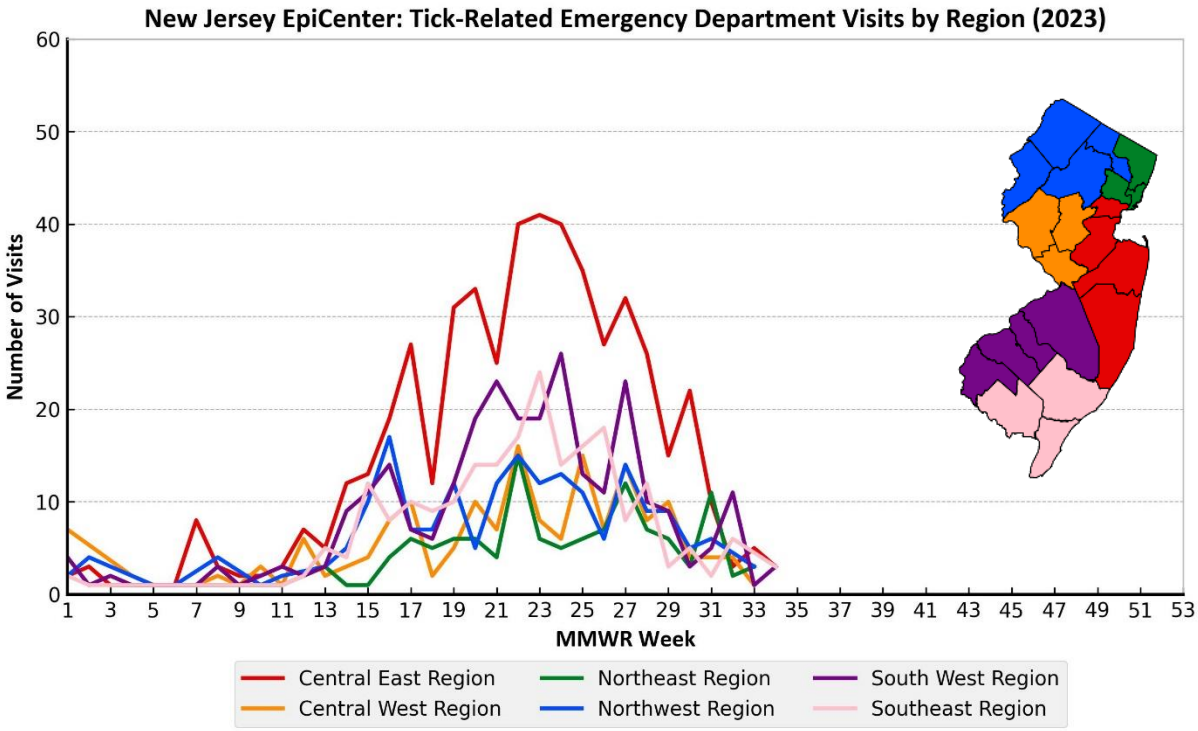


Tick-related Emergency Department Visits

New Jersey's syndromic surveillance system, known as EpiCenter, receives real time Emergency Department (ED) data from 78 acute care and satellite health (99 percent reporting) facilities statewide. The system collects "chief complaint" information and limited patient registration data from existing ED computer systems. The chart below represents N.J. residents seen at emergency departments statewide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when adult Ixodes scapularis (blacklegged ticks) are active.

In Week 34, the number of tick-related ED visits continued to decline. The number is below 2022 levels and the 5-year average.





Data reflects ED visits downloaded from EpiCenter as of August 30, 2023

For more information

- NJDOH Communicable Disease Service: https://www.nj.gov/health/cd/topics/vectorborne.shtml
- New Jersey Vector-borne Disease Dashboard: https://dashboards.doh.nj.gov/views/public_dashboard/Intro
- New Jersey Arboviral Activity Maps: http://bit.ly/JerseySurv
- NJDEP Office of Mosquito Control Coordination: https://www.nj.gov/dep/mosquito/
- NJDA Division of Animal Health: https://www.nj.gov/agriculture/divisions/ah/