

Report Highlights:

- NJDOH is reporting 13 cases, 1 death, and 2 presumptive viremic blood donors (PVD) associated with West Nile Virus (WNV) infection in Bergen (4 cases, 1 death), Middlesex (3 cases), Camden (2 cases, 1 PVD), Atlantic (1 case), Burlington (1 PVD), Monmouth (1 case), Morris (1 case) and Passaic (1 case) counties.
- An additional 2 mosquito pools tested positive for WNV so far in Week 40, for a total of 811 this year. The number of positive pools started to decline in week 39 (additional tests pending for this week). The vector index is highest this week in Burlington and Camden counties.
- One additional Eastern Equine Encephalitis (EEE) mosquito pool was detected, for a total of 14 this year in Atlantic, Burlington, Camden, Cape May, Cumberland, Hunterdon, Morris, and Somerset counties. One horse tested positive for EEE in Gloucester County in week 37. There are no human cases of EEE in 2023.
- La Crosse Encephalitis (LAC) virus was detected in a mosquito pool in week 38 in Sussex County. This is the first LAC positive mosquito pool in New Jersey since 2019 (Passaic County) and only the 4th identification in at least 20 years. There have been no human cases of LAC reported in New Jersey for at least the past 20 years.
- Jamestown Canyon virus has been detected in 4 mosquito pools in 2023, in Cumberland, Gloucester, Salem, and Sussex counties.
- The number of chikungunya and dengue virus cases has exceeded 2022 totals. All cases have been travel-associated.
- All of the tickborne diseases transmitted by blacklegged ticks, with the exception of Powassan, have exceeded 2022 totals.
- The number of tick-related emergency department visits increased this week, consistent with historical trends.

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	129	234
Dengue	45	35	Anaplasmosis	145	125
Eastern equine encephalitis	-	-	Babesiosis	321	292
Jamestown Canyon	-	-	<i>Borrelia miyamotoi</i>	9	6
Malaria	59	86	Ehrlichiosis (<i>chaffeensis</i> , <i>ewingii</i>)	90	115
West Nile	13	20	Lyme disease*	5,921	5,897
Zika	-	-	Powassan	-	2
			Spotted fever group rickettsioses	20	35
			Tularemia	2	1

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

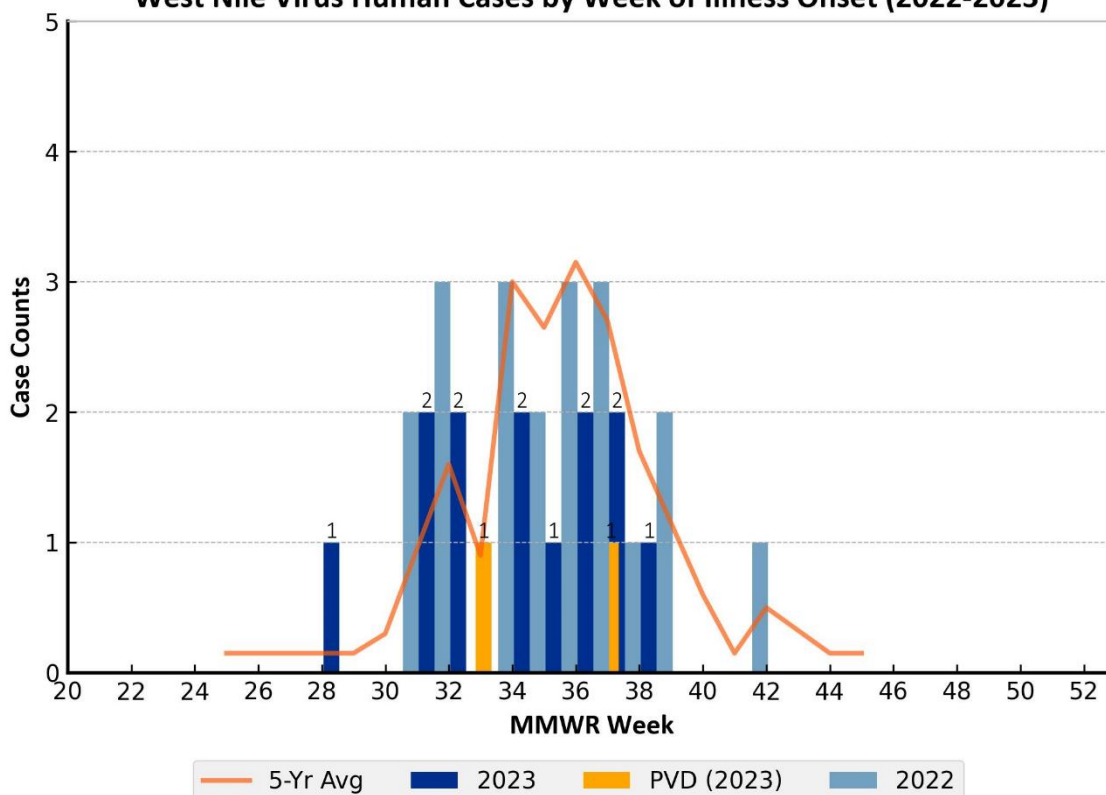
Mosquito-borne Disease Activity*

*Test results may be incomplete as counties submit pools for testing on specific weekdays. Data reflects test results downloaded from JerseySurv on October 11, 2023.

West Nile Virus

- There are 13 human WNV cases with dates of illness onset ranging from week 28 (week ending 7/15/23) to week 38 (week ending 9/21/23).
- WNV cases have been reported in Bergen (4 cases, 1 death), Middlesex (3 cases), Camden (2 cases and 1 presumptive viremic blood donor (PVD)), Atlantic (1 case), Monmouth (1 case), Morris (1 case), and Passaic (1 case) counties and an additional PVD in Burlington County.
- There have been no animal cases of WNV reported in New Jersey in 2023.
- 8,891 pools from 21 counties have been tested for WNV. 2 pools tested positive in Week 40 in 2 counties and a total of 811 mosquito pools have tested positive for WNV so far this year. The positive pools were found in: *Aedes albopictus* (11), *Aedes japonicus* (4), *Aedes taeniorhynchus* (1), *Aedes triseriatus* (3), *Anopheles punctipennis* (2), *Culex* (112), *Culex erraticus* (4), *Culex pipiens* (23), *Culex pipiens/restuans/salinarius* (644), *Culex restuans* (3), *Culiseta melanura* (3), and *Psorophora ferox* (1).

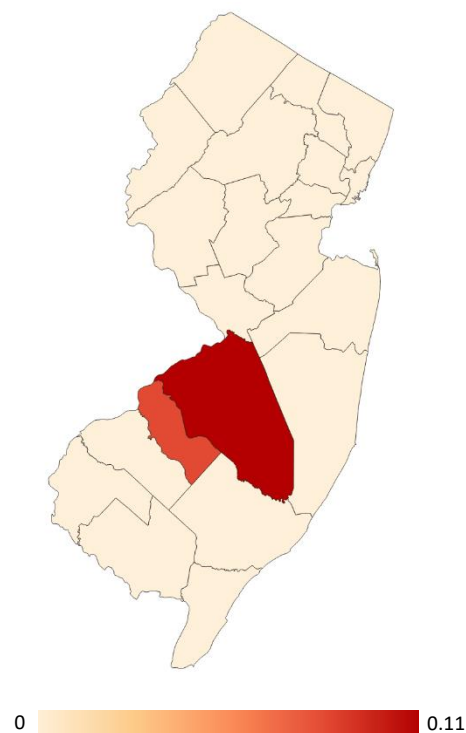
West Nile Virus Human Cases by Week of Illness Onset (2022-2023)



WNV Mosquito Pool Testing

County	WEEK 40 Positive Pools		Cumulative Pos. Total* (WEEK 40)		# Pools Tested*	WEEK 40 Vector Index	
	2023	2022	2023	2022		2023 ^t	
Bergen		1	116	96	351	0.00	(-)
Hudson			80	86	264	0.00	(↓)
Middlesex			67	67	306	0.00	(↓)
Hunterdon			62	15	376	0.00	(↓)
Somerset			57	29	284	0.00	(↓)
Union			55	44	198	0.00	(-)
Mercer			49	33	395	0.00	(↓)
Gloucester			40	19	719	0.00	(-)
Morris			39	28	418	0.00	(-)
Monmouth			33	34	424	0.00	(-)
Sussex			29	8	634	0.00	(↓)
Warren			29	8	431	0.00	(-)
Atlantic			27	6	383	0.00	(-)
Burlington	1	1	27	28	304	0.11	(↑)
Passaic			26	49	246	0.00	(-)
Cape May			24	2	1387	0.00	(-)
Ocean			20	10	371	0.00	(-)
Camden	1		19	24	309	0.07	(↑)
Salem			6	2	427	0.00	(-)
Essex			5	11	286	0.00	(-)
Cumberland			1	1	378	0.00	(-)
Total	2	2	811	600	8891	-	

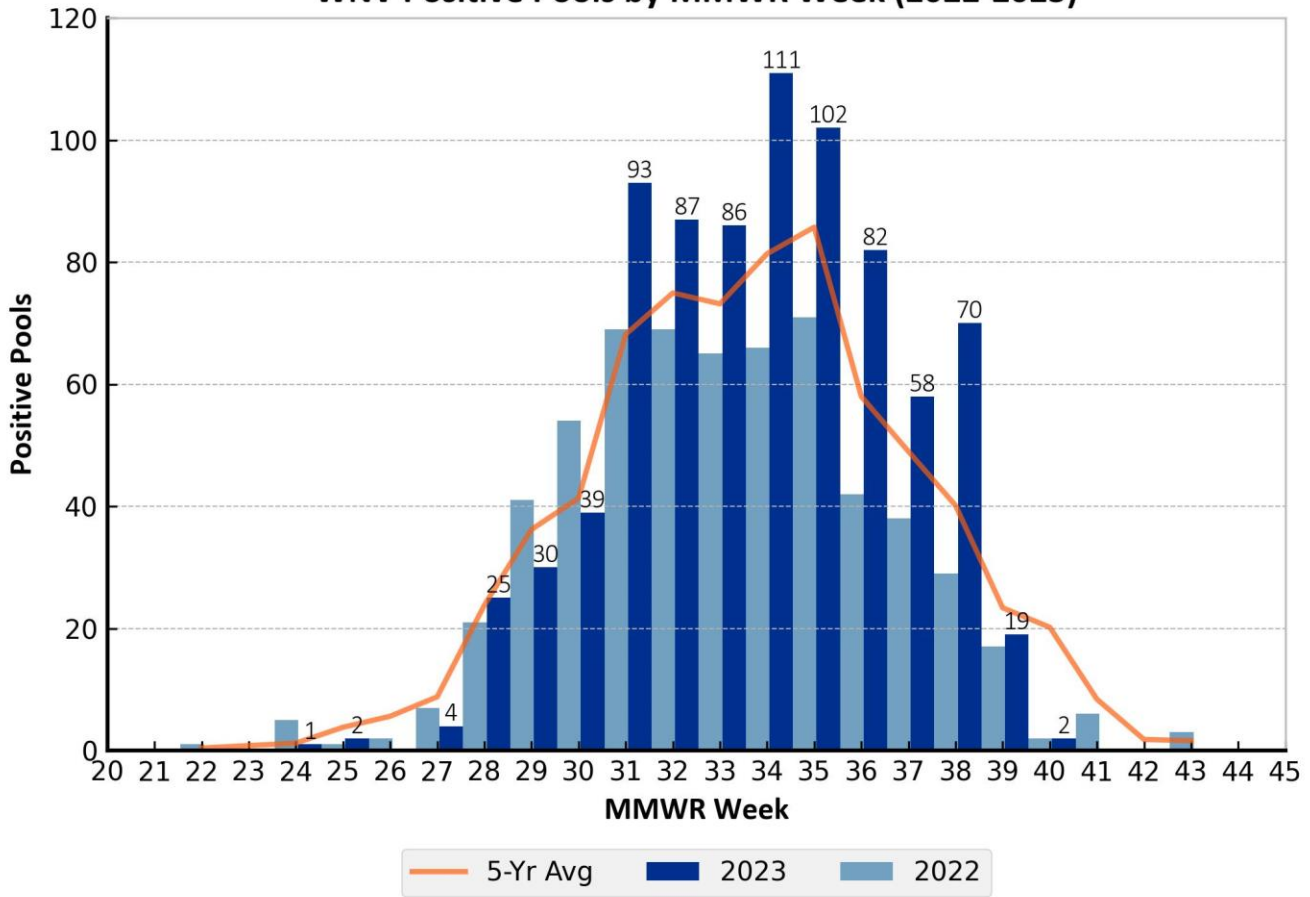
WNV Vector Index, WEEK 40^t



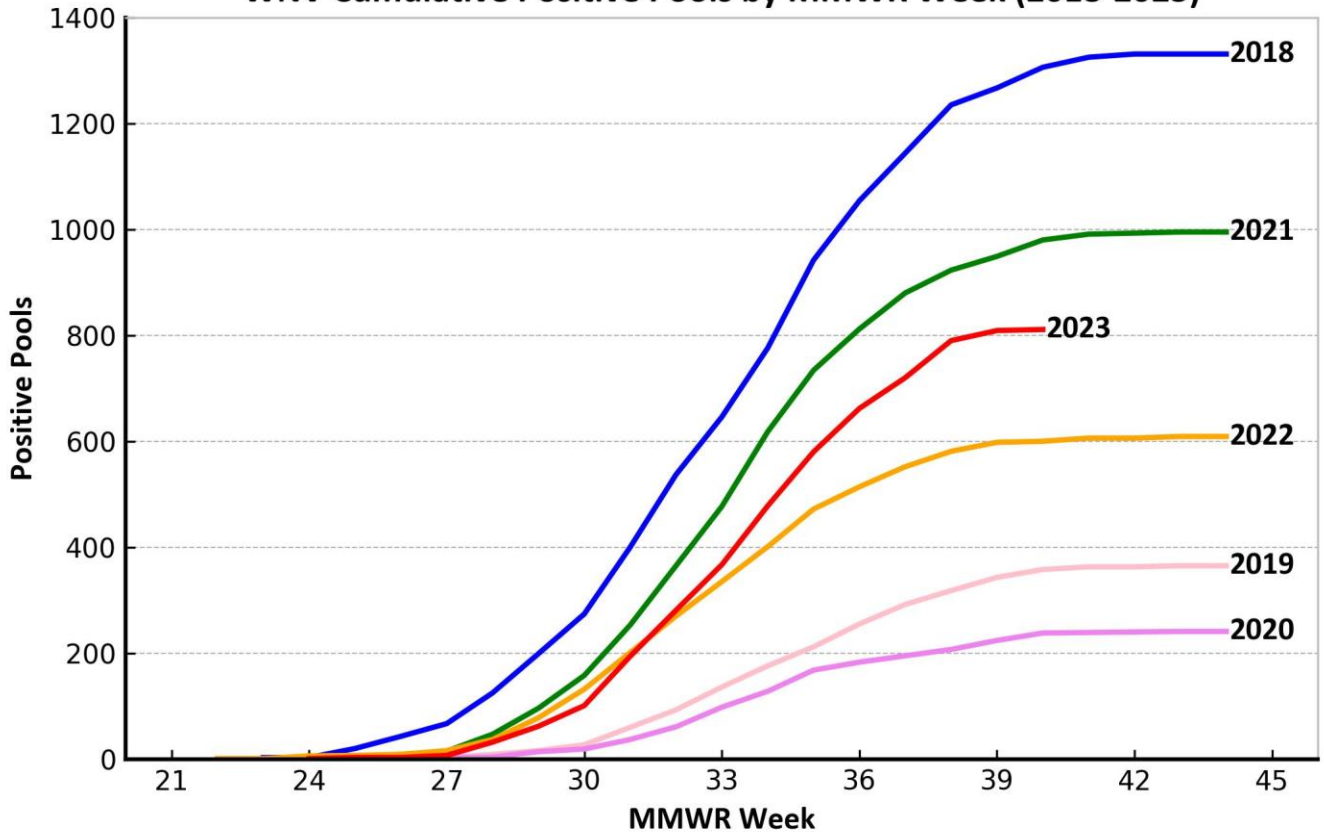
^t Vector Index is calculated based on *Ae. taeniorhynchus*, *An. quadrimaculatus*, and all *Culex* species caught in gravid traps only.

WEEK 40: Oct 2 - 8, 2022; Oct 1 - 7, 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 Positive Pools by MMWR Week (2022-2023)



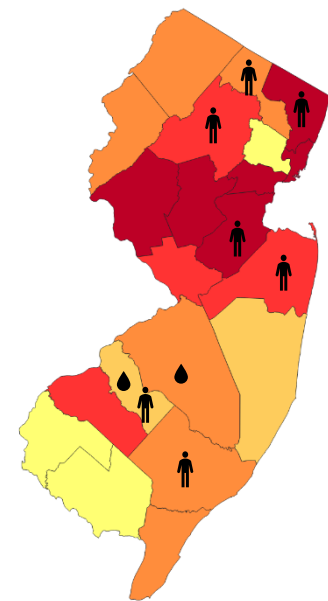
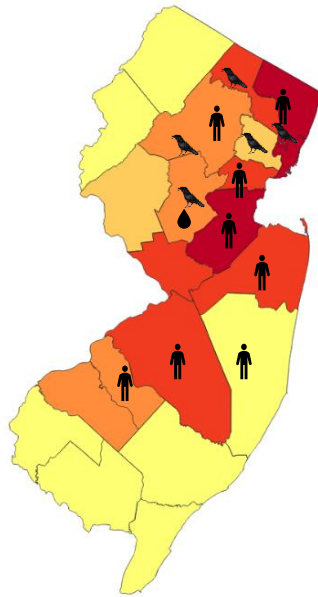
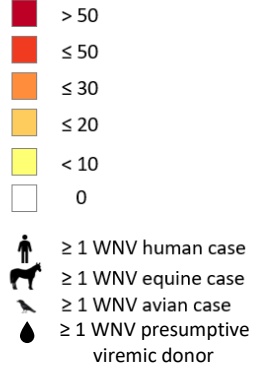
WNV Cumulative Positive Pools by MMWR Week (2018-2023)



2022 WNV Activity

Cumulative WNV Activity, 2023

WNV Positive Pools



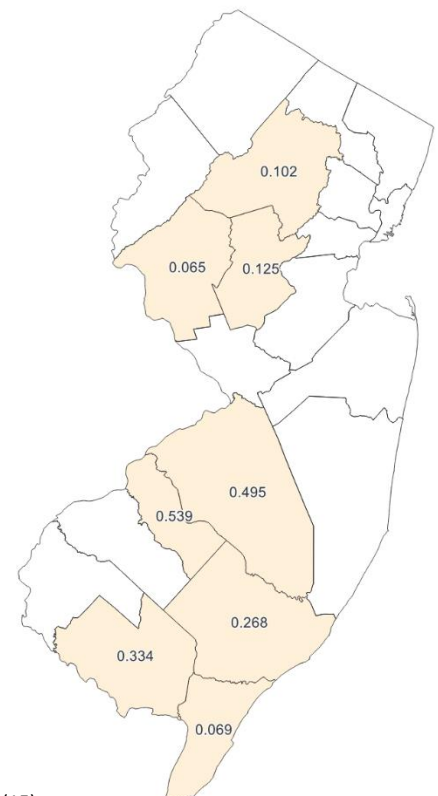
Eastern Equine Encephalitis

- There have been no human cases of EEE in New Jersey in 2023. EEE human cases were last reported in 2019 (4 cases).
- New Jersey Department of Agriculture reported 1 equine case of EEE in Gloucester County in week 37. The case had been vaccinated in the past for EEE, but their vaccination was not up to date.
- A total of 8,709 mosquito pools from 21 counties have been tested for EEE with 14 pools testing positive in Atlantic, Burlington, Camden, Cape May, Cumberland, Hunterdon, Morris, and Somerset counties. The positive pools were found in: *Culex* (1), *Culex pipiens* (1), *Culex pipiens/restuans/salinarius* (3) and *Culiseta melanura* (9). The first positive EEE pool (*Culiseta melanura*) was identified in Cumberland County in week 30.

EEE Mosquito Pool Testing

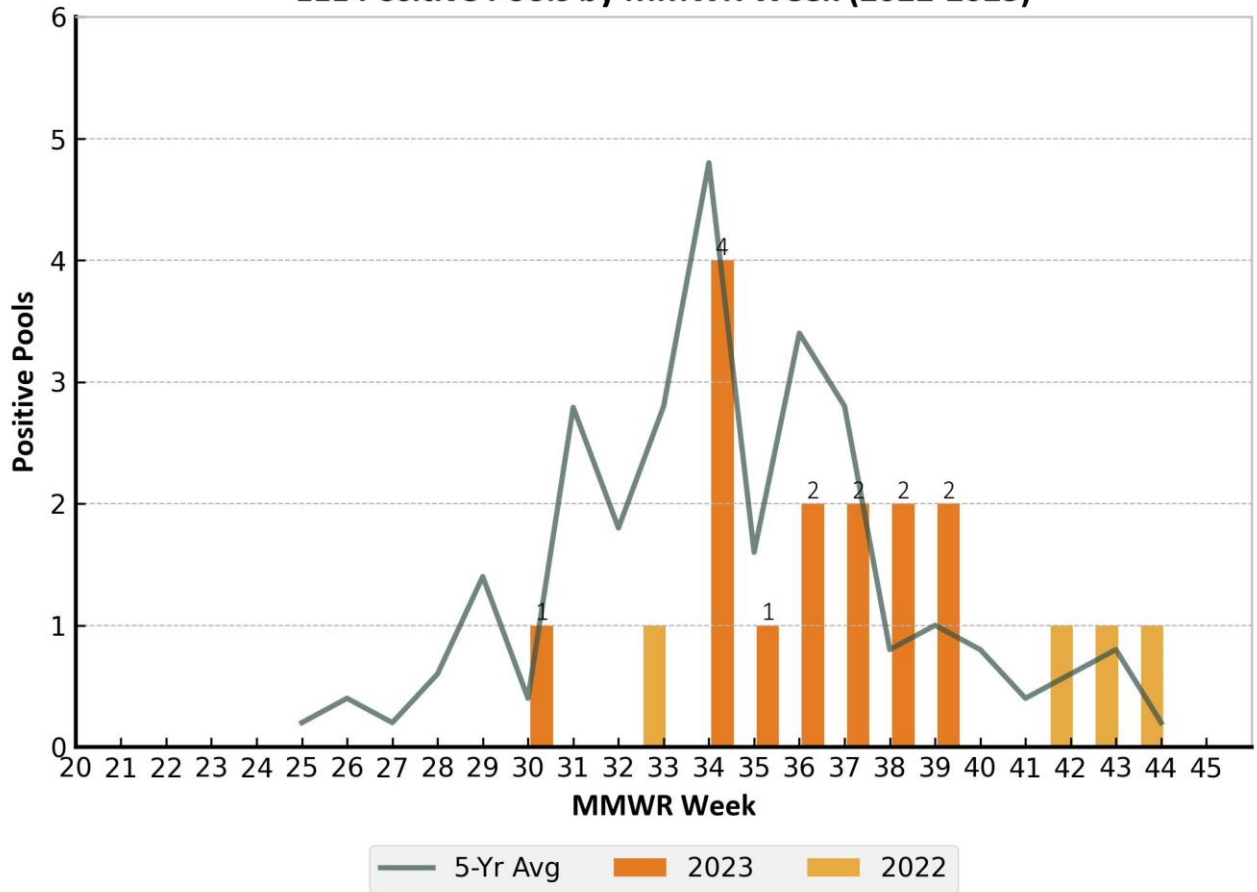
County	WEEK 40 Positive Pools		Cumulative Pos. Total* (WEEK 40)		# Pools Tested	Cumulative MFIR
	2023	2022	2023	2022		
Atlantic			3		383	0.268
Burlington			3		299	0.495
Camden			2		301	0.539
Cumberland			2		378	0.334
Cape May			1		1316	0.069
Hunterdon			1		373	0.065
Morris			1	1	418	0.102
Somerset			1		284	0.125
Bergen					351	
Essex					286	
Gloucester					713	
Hudson					264	
Mercer					382	
Middlesex					306	
Monmouth					424	
Ocean					365	
Passaic					246	
Salem					406	
Sussex					612	
Union					198	
Warren					404	
Total	0	0	14	1	8709	-

Cumulative EEE MFIR, 2023



WEEK 40: Oct 2 - 8, 2022; Oct 1 - 7, 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).

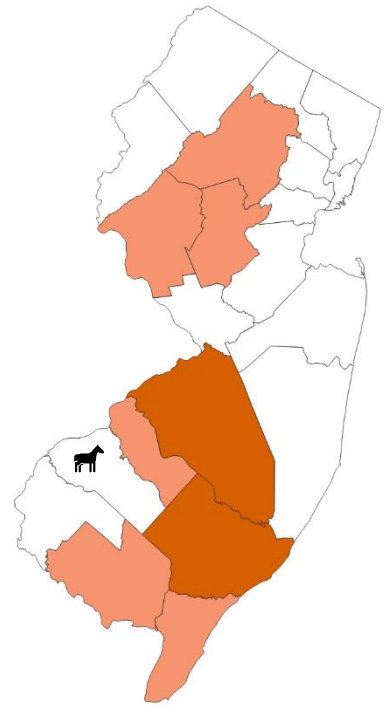
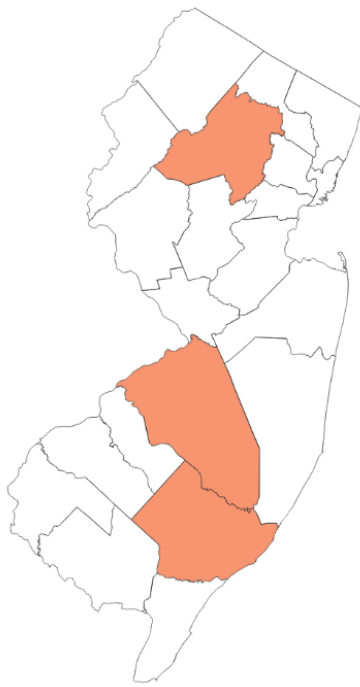
EEE Positive Pools by MMWR Week (2022-2023)



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



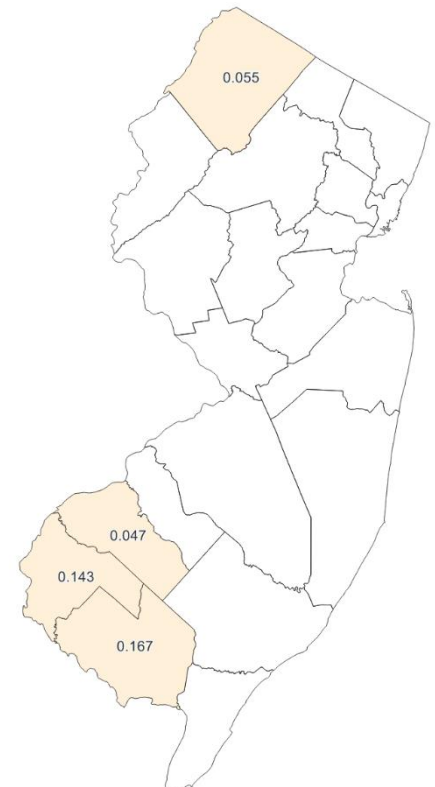
Jamestown Canyon Virus

- There have been no human cases of JCV in New Jersey in 2023.
- 7,864 mosquito pools from 21 counties have been tested for JCV with 4 pools testing positive in Cumberland, Gloucester, Salem, and Sussex counties. The positive pools were found in: *Anopheles quadrimaculatus s.l.* (1), *Anopheles punctipennis* (2), and *Coquillettidia perturbans* (1). The first positive JCV pool was identified in Cumberland County in week 25.
- 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

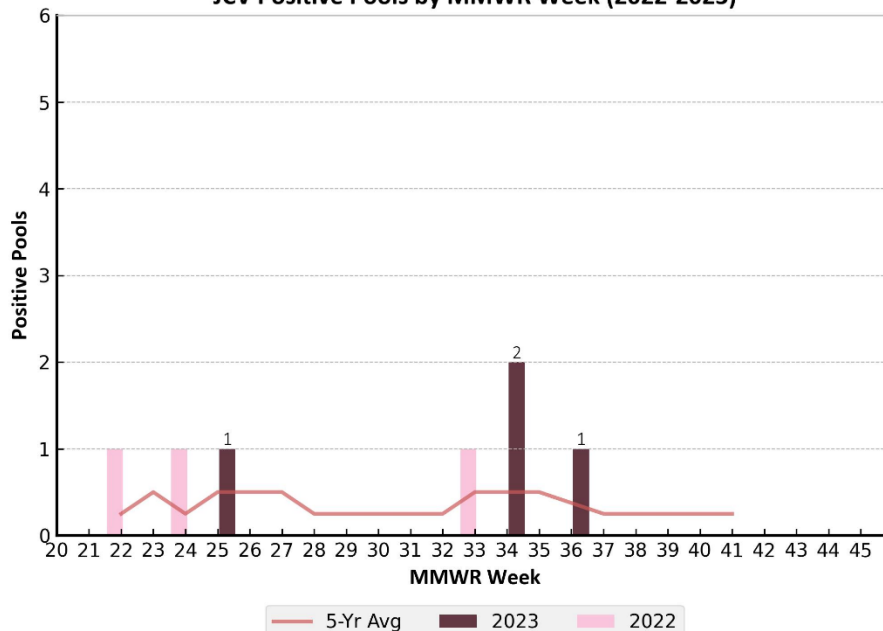
County	WEEK 40 Positive Pools		Cumulative Pos. Total* (WEEK 40)		# Pools Tested	Cumulative MFIR
	2023	2022	2023	2022	2023	2023
Cumberland			1		378	0.167
Gloucester			1		707	0.047
Salem			1		393	0.143
Sussex			1	1	612	0.055
Atlantic					383	
Bergen				2	351	
Burlington					299	
Camden					277	
Cape May					514	
Essex					286	
Hudson					264	
Hunterdon					373	
Mercer					382	
Middlesex					306	
Monmouth					424	
Morris					418	
Ocean					365	
Passaic					246	
Somerset					284	
Union					198	
Warren					404	
Total	0	0	4	3	7864	-

Cumulative JCV MFIR, 2023



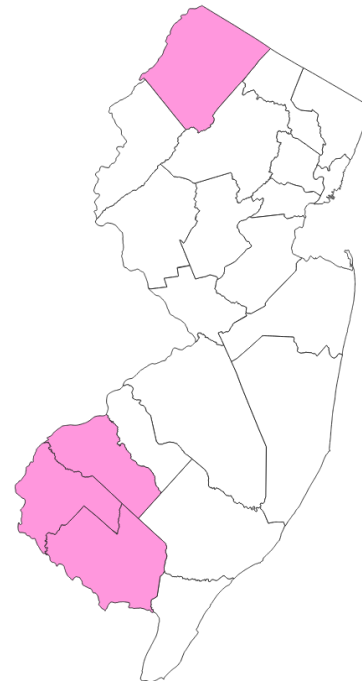
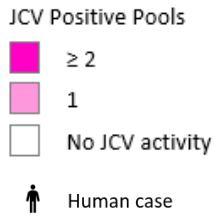
WEEK 40: Oct 2 - 8, 2022; Oct 1 - 7, 2023 *includes early season pools from 9 counties

JCV Positive Pools by MMWR Week (2022-2023)



2022 JCV Activity

Cumulative JCV Activity, 2023



Other Mosquito-borne Viruses

- There was 1 positive pool of LAC in Sussex County in week 38. The positive pool was in *Ae. triseriatus*. The last positive LAC pool in New Jersey was in week 22 of 2019 in Passaic County.

Cumulative 2023 Mosquito Pool Testing (Other Viruses^a)

County	SLE		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	383		4		5		5		5	
Bergen	351		1		5		5		5	
Burlington	299		5		2		2		2	
Camden	294		11		4		4		4	
Cape May	1216		32		193				193	
Cumberland	378									
Essex	286									
Gloucester	712		5							
Hudson	264									
Hunterdon	373		3							
Mercer	382		13		11		11		11	
Middlesex	306				2		2		2	
Monmouth	424				2		2		2	
Morris	418				10		10		10	
Ocean	365		6		2		2		2	
Passaic	246		12		3		3		3	
Salem	403		21		1		1		1	
Somerset	284									
Sussex	612		24	1						
Union	198									
Warren	404		28		3		3		3	
Total	8598	-	165	1	243	-	50	-	243	-

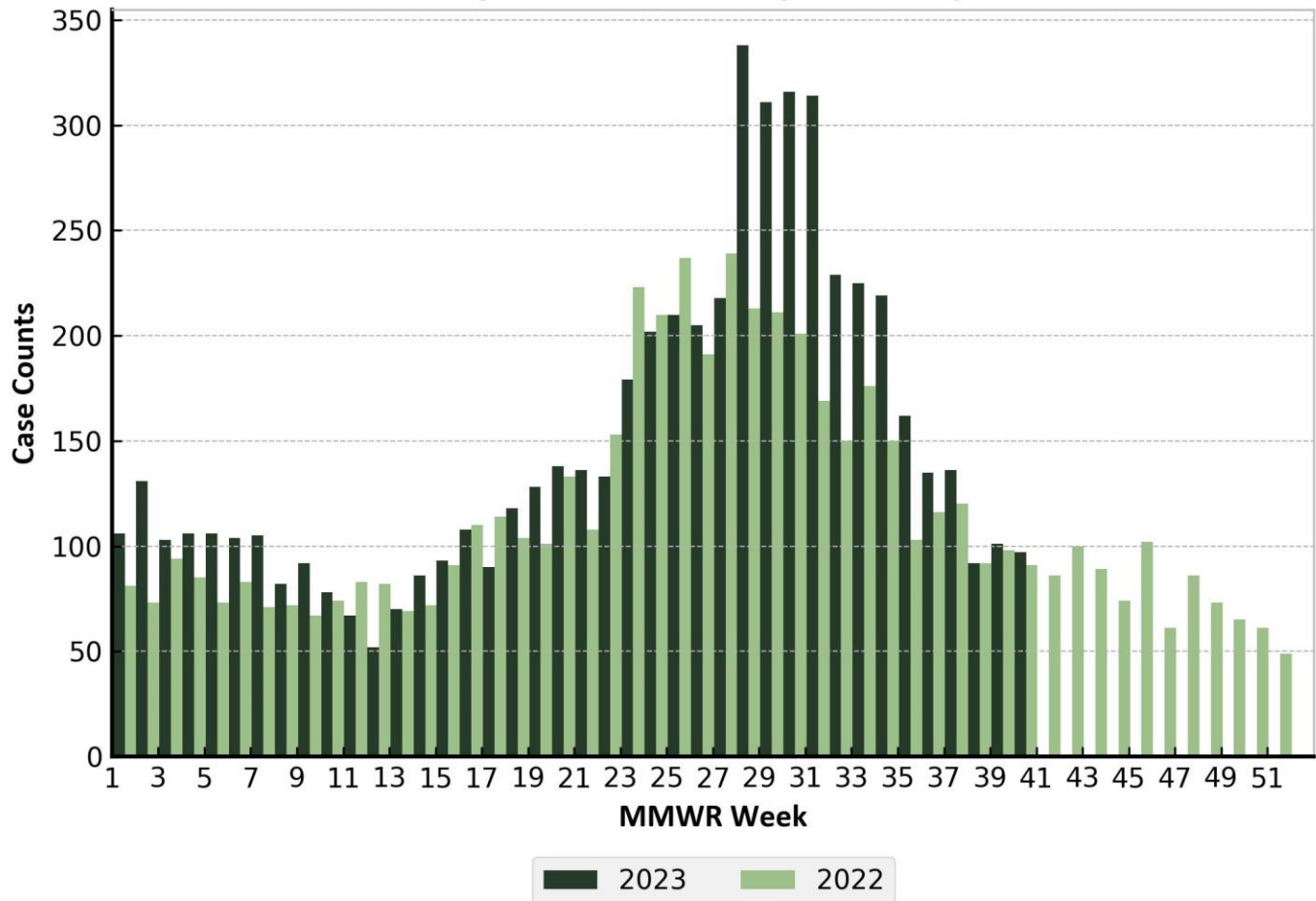
^a St. Louis virus (SLE), La Crosse encephalitis (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)
 Numbers in white columns represent number of pools tested to date in 2023
 Number in blue shaded columns represent positive pools in 2023

Tick-borne Disease Activity

Lyme Disease

- There have been 5,921 cases of Lyme disease reported in New Jersey in 2023 in 21 counties.
- The number of cases in Week 40 is consistent with last week and this period last year.

Lyme Disease Cases (2022-2023)

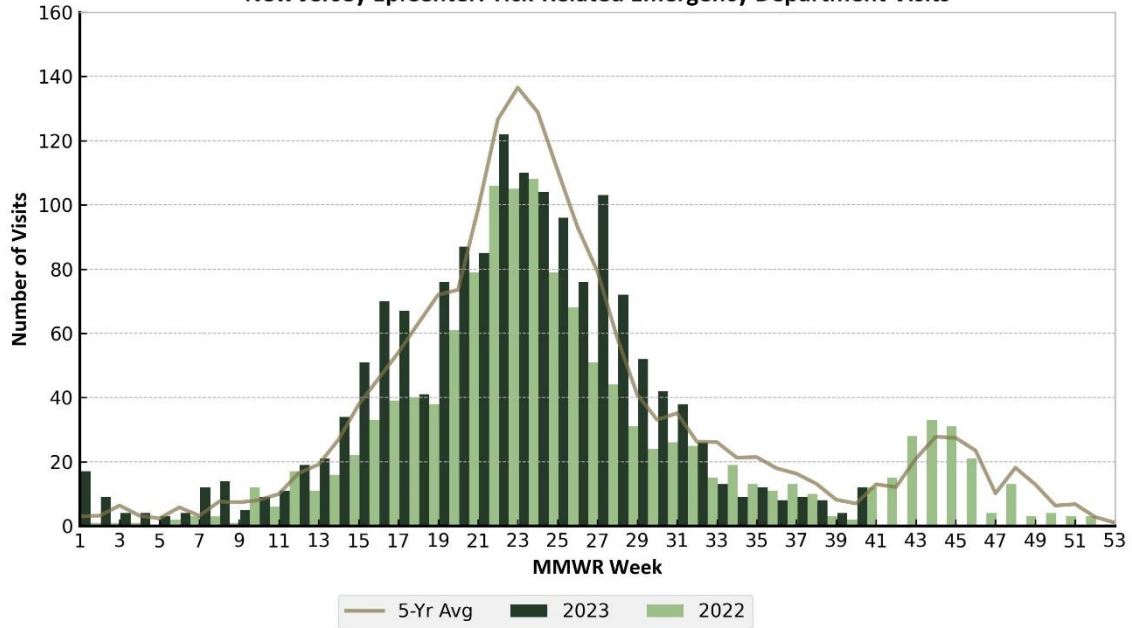


Tick-related Emergency Department Visits

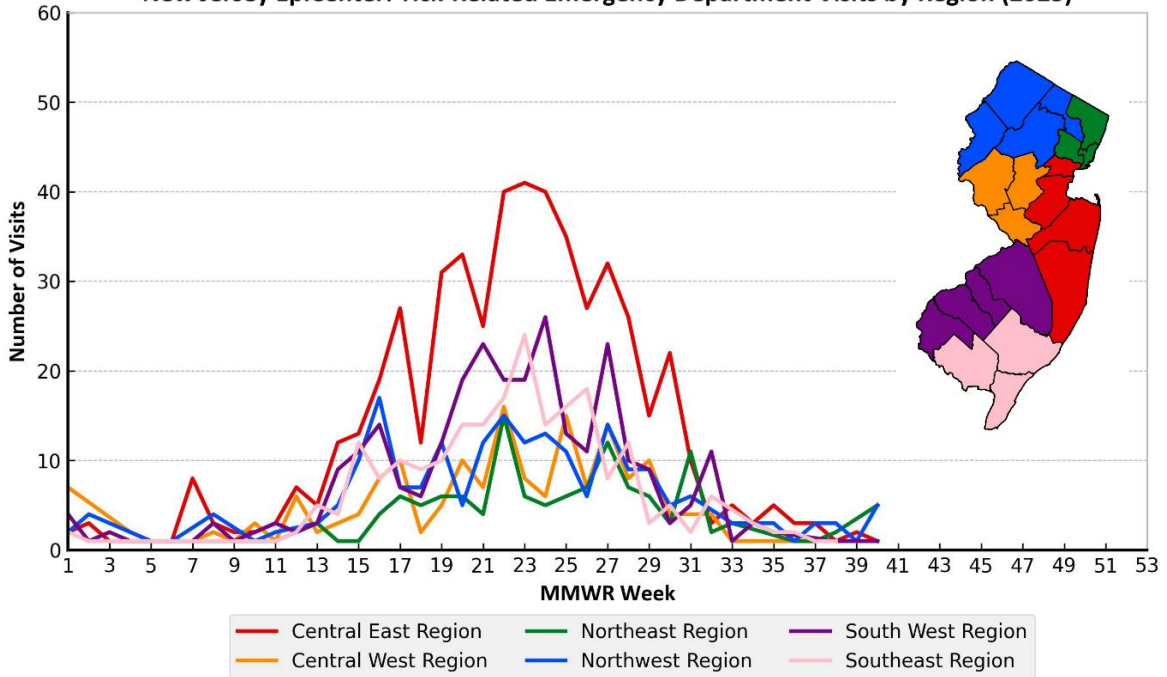
New Jersey's syndromic surveillance system, known as EpiCenter, receives real time Emergency Department (ED) data from 78 acute care and satellite health (99 percent reporting) facilities statewide. The system collects "chief complaint" information and limited patient registration data from existing 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 40, the number of tick-related ED visits increased and is around the 5-year average.

New Jersey EpiCenter: Tick-Related Emergency Department Visits



New Jersey EpiCenter: Tick-Related Emergency Department Visits by Region (2023)



Data reflects ED visits downloaded from EpiCenter as of October 11, 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/>