

Report Highlights:

- There was 1 new human case of West Nile virus (WNV) reported this week in Burlington County, and a total of 14 cases, 1 death, and 4 presumptive viremic blood donors (PVD) associated with WNV this year in Atlantic, Bergen, Burlington, Camden, Middlesex, Monmouth, Morris, and Passaic counties.
- No mosquito pools tested positive for WNV so far in Week 42 (additional tests pending); 841 mosquito pools have tested positive this year in all counties. It is anticipated that mosquito testing will continue through early November.
- A second horse tested positive for EEE in Salem County in week 41 (1st horse was in Gloucester County). There are no new EEE-positive mosquito pools so far in Week 42; 18 mosquito pools have tested positive this year in 9 counties. There are no human cases of EEE in 2023.
- No additional mosquito pools tested positive this week for Jamestown Canyon or La Crosse viruses.
- 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.
- In Week 42, the number of tick-related Emergency Department (ED) visits is increasing, consistent with historical trends, and is expected to increase over the next month when adult deer ticks are active. The number of ED visits is highest in the northwest region.

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	183	234
Dengue	48	35	Anaplasmosis	148	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>)	92	115
West Nile	14	20	Lyme disease*	6,097	5,897
Zika	-	-	Powassan	-	2
			Spotted fever group rickettsioses	20	35
			Tularemia	2	1

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

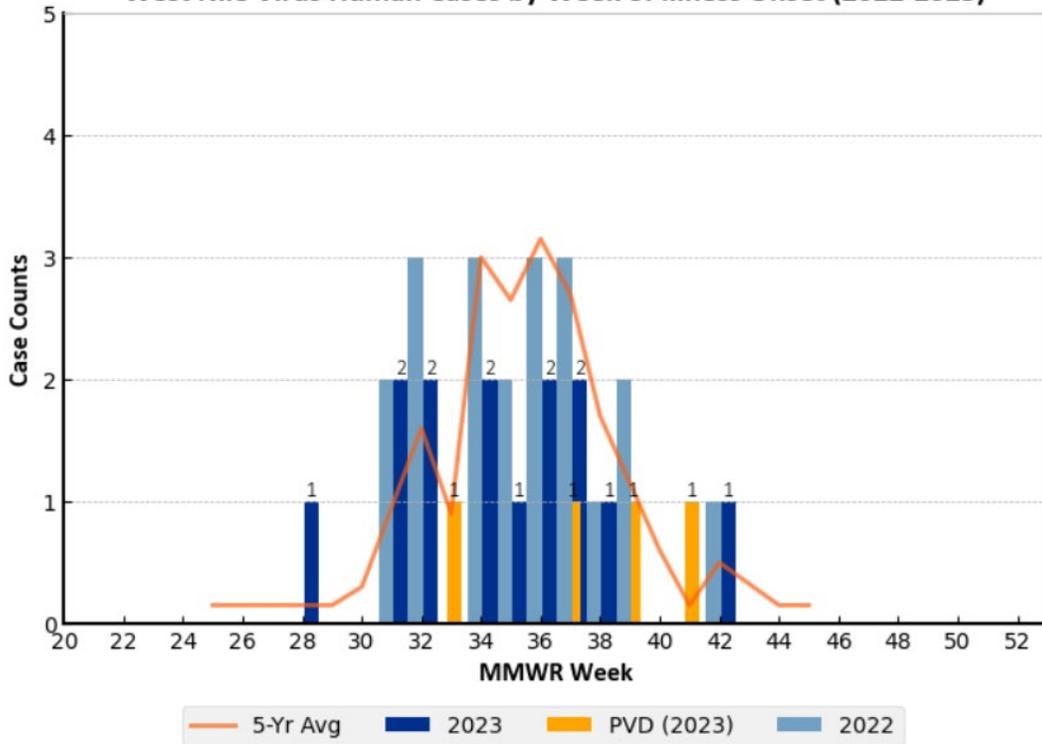
Mosquito-borne Disease Activity*

*Test results may be incomplete as counties submit pools for testing on specific weekdays. Data reflects test results downloaded from JerseySurv on October 25, 2023.

West Nile Virus

- There are 14 human WNV cases with dates of illness onset ranging from week 28 (week ending 7/15/23) to week 42 (week ending 10/21/23).
- WNV cases have been reported in Bergen (4 cases, 1 death), Middlesex (3 cases), Camden (2 cases and 2 presumptive viremic blood donor (PVD)), Burlington (1 case and 1 PVD), Atlantic (1 case), Monmouth (1 case), Morris (1 case), and Passaic (1 case) counties.
- There have been no animal cases of WNV reported in New Jersey in 2023.
- 9,732 pools from 21 counties have been tested for WNV. A total of 841 mosquito pools have tested positive for WNV so far this year. The positive pools were found in: *Aedes albopictus*, *Aedes japonicus*, *Aedes taeniorhynchus*, *Aedes triseriatus*, *Anopheles punctipennis*, *Culex*, *Culex erraticus*, *Culex pipiens*, *Culex pipiens/restuans/salinarius*, *Culex restuans*, *Culiseta melanura*, and *Psorophora ferox*.

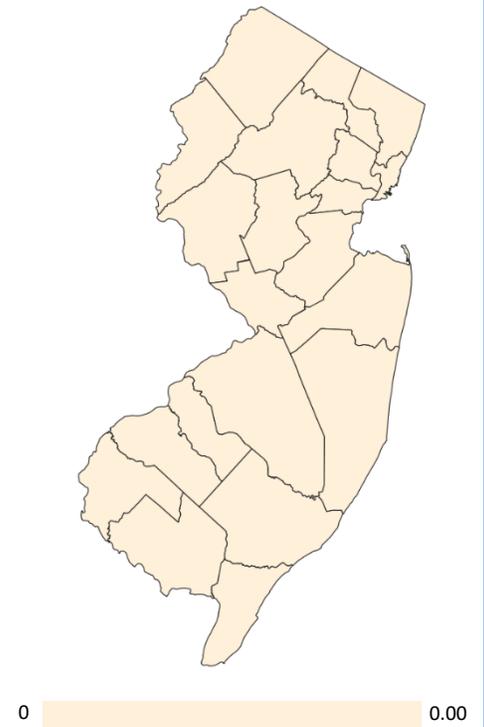
West Nile Virus Human Cases by Week of Illness Onset (2022-2023)



WNV Mosquito Pool Testing

County	WEEK 42 Positive Pools		Cumulative Pos. Total* (WEEK 42)		# Pools Tested*	WEEK 42 Vector Index	
	2023	2022	2023	2022		2023 ^t	
Bergen			116	97	371	0.00	(-)
Hudson			81	86	289	0.00	(↓)
Middlesex			67	67	335	0.00	(-)
Somerset			65	29	313	0.00	(-)
Hunterdon			64	15	403	0.00	(-)
Union			57	44	229	0.00	(-)
Mercer			54	34	435	0.00	(↓)
Gloucester			44	19	750	0.00	(-)
Morris			41	29	468	0.00	(-)
Monmouth			33	34	466	0.00	(-)
Sussex			30	8	723	0.00	(-)
Warren			29	8	458	0.00	(-)
Burlington			27	31	333	0.00	(-)
Atlantic			27	6	420	0.00	(-)
Passaic			26	49	247	0.00	(-)
Cape May			26	2	1556	0.00	(-)
Ocean			20	10	407	0.00	(-)
Camden			20	24	326	0.00	(-)
Essex			7	11	317	0.00	(-)
Salem			6	2	471	0.00	(-)
Cumberland			1	1	415	0.00	(-)
Total	0	0	841	606	9732	-	

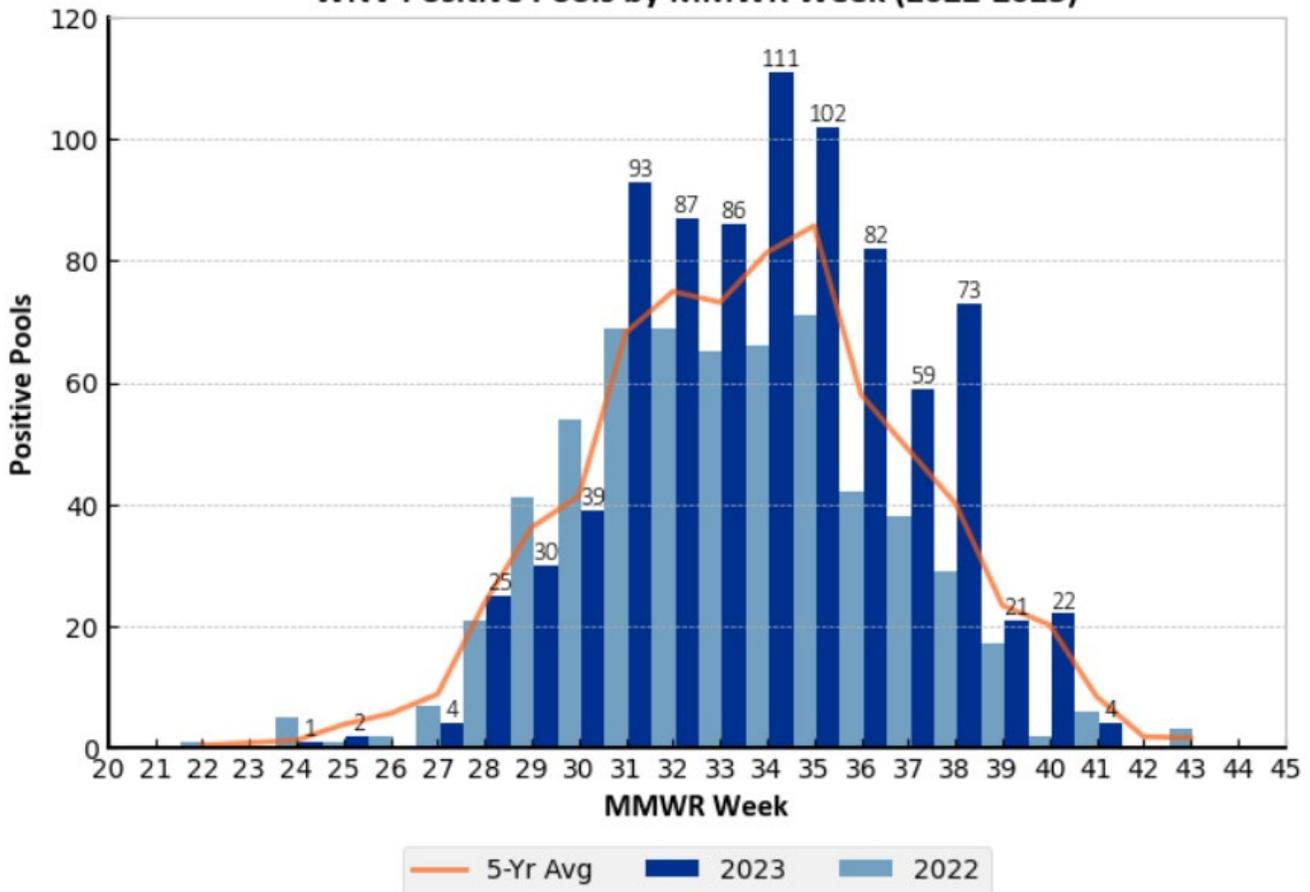
WNV Vector Index, WEEK 42^t



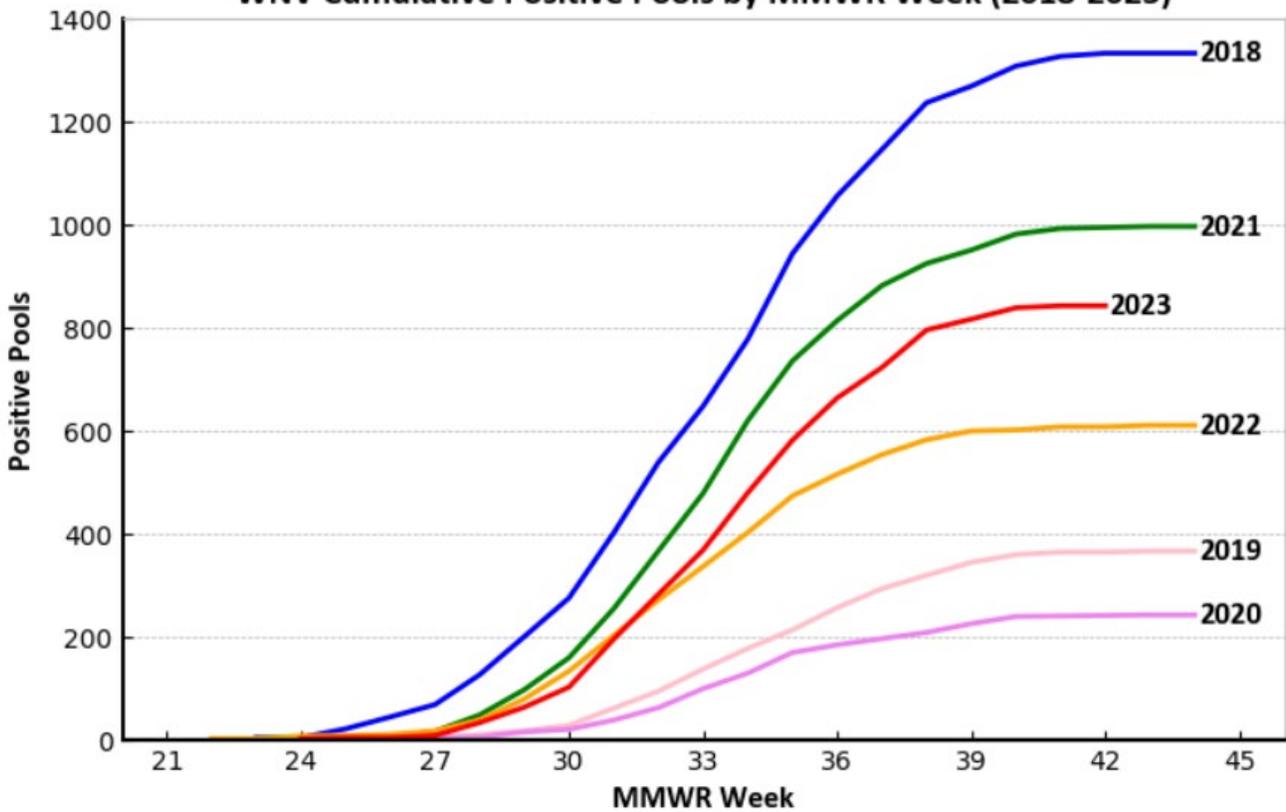
^t Vector Index is calculated based on *Ae. taeniorhynchus*, *An. quadrimaculatus*, and all *Culex* species caught in gravid traps only.

WEEK 42: Oct 16-22, 2022; Oct 15-21, 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)



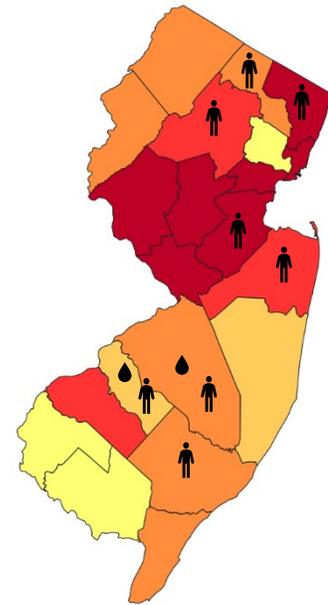
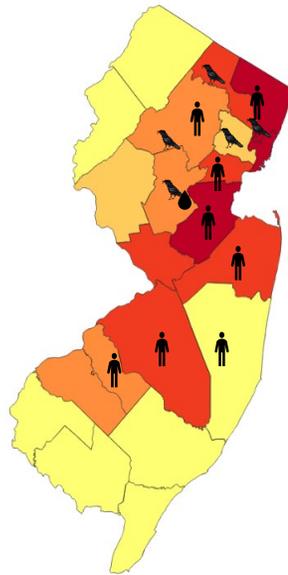
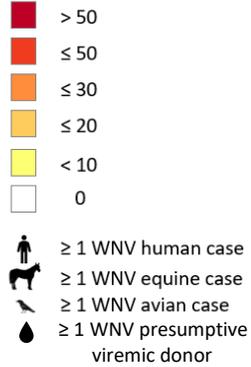
WNV Cumulative Positive Pools by MMWR Week (2018-2023)



2022 WNV Activity

Cumulative WNV Activity, 2023

WNV Positive Pools



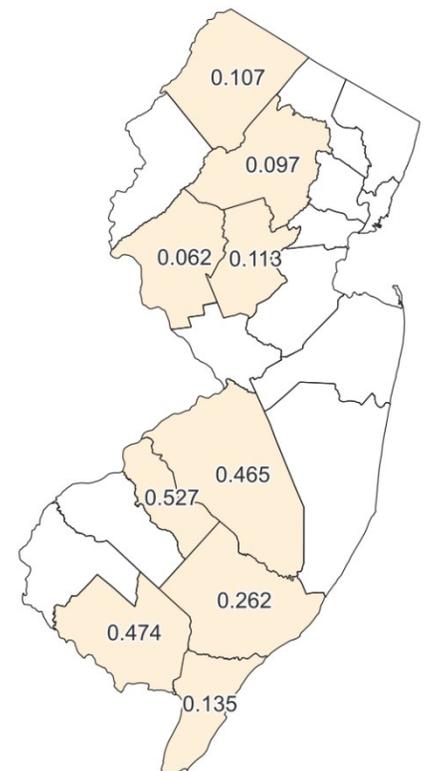
Eastern Equine Encephalitis

- There are no human cases of EEE in New Jersey in 2023. EEE human cases were last reported in 2019 (4 cases).
- There have been 2 equine cases of EEE, the first in Gloucester County in week 37, which had been vaccinated previously for EEE but was not up to date; and the second in Salem County in week 41, which had an unverified vaccination history.
- A total of 9,490 mosquito pools have been tested for EEE and 18 pools were positive in Atlantic, Burlington, Camden, Cape May, Cumberland, Hunterdon, Morris, Somerset, and Sussex counties. EEE activity is detected each year in southern New Jersey, but northern detections are less common. Positive pools were found in: *Culex* and *Culiseta melanura* mosquitoes.

EEE Mosquito Pool Testing

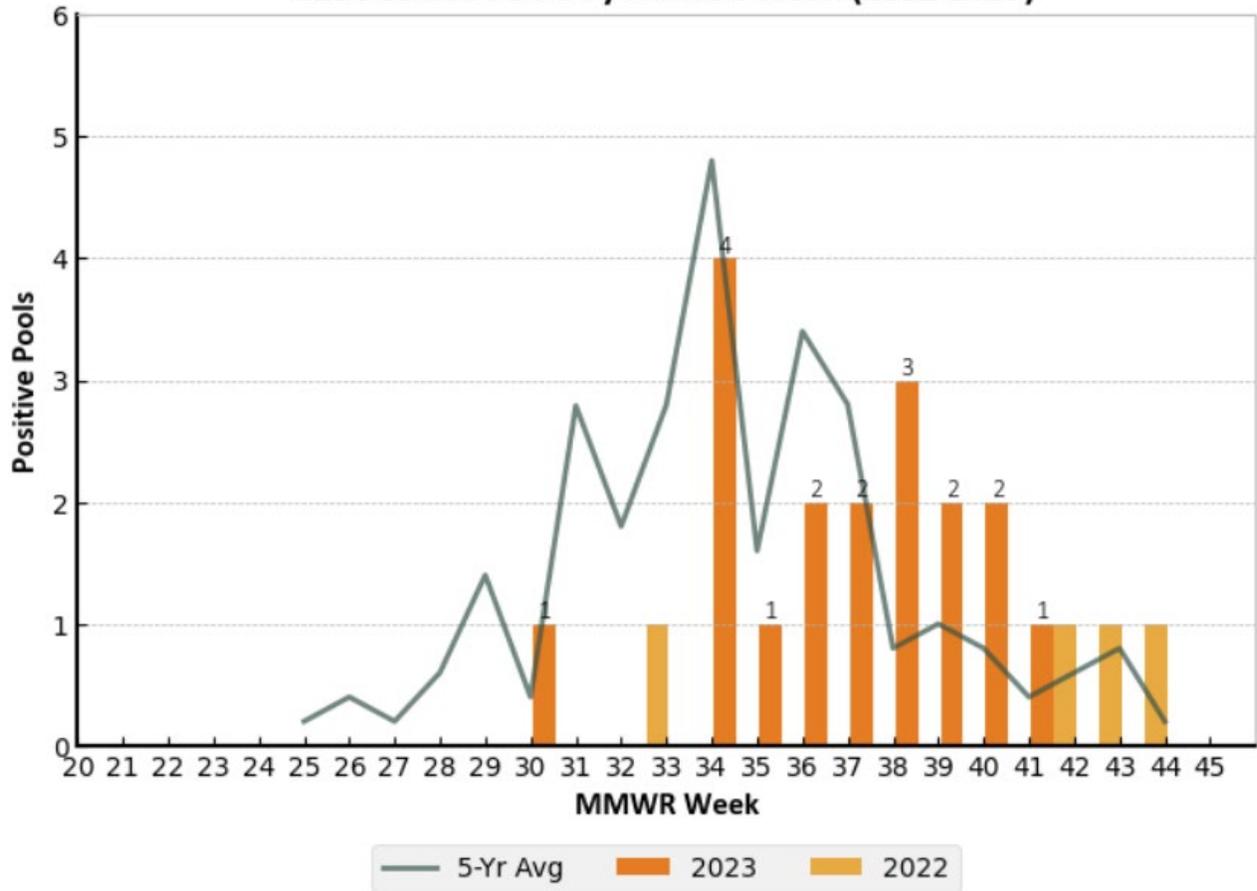
County	WEEK 42 Positive Pools		Cumulative Pos. Total* (WEEK 42)		# Pools Tested	Cumulative MFIR
	2023	2022	2023	2022		
Atlantic		1	3	1	420	0.262
Burlington			3		325	0.465
Cumberland			3		415	0.474
Camden			2		318	0.527
Cape May			2		1485	0.135
Sussex			2		648	0.107
Hunterdon			1		400	0.062
Morris			1	1	468	0.097
Somerset			1		313	0.113
Bergen					371	
Essex					317	
Gloucester					744	
Hudson					289	
Mercer					422	
Middlesex					335	
Monmouth					466	
Ocean					401	
Passaic					247	
Salem					448	
Union					229	
Warren					429	
Total	0	1	18	2	9490	-

Cumulative EEE MFIR, 2023



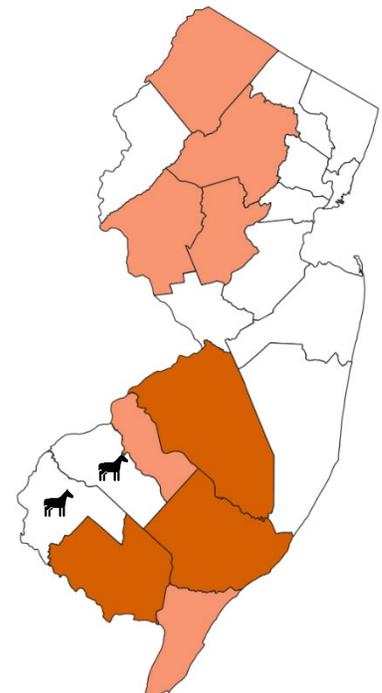
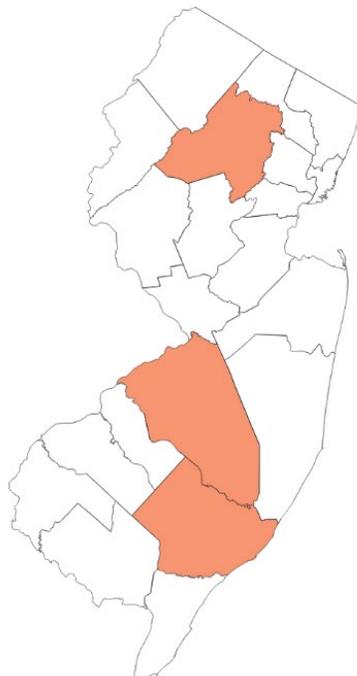
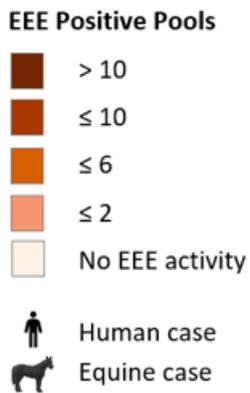
WEEK 42: Oct 16-22, 2022; Oct 15-21, 2023 *includes early season pools from 9 counties: Camden (9), Cape May (15), Cumberland (13), Essex (3), Gloucester (100), Mercer (7), Morris (18), Salem (8), Sussex (92), and Warren (27).

EEE Positive Pools by MMWR Week (2022-2023)



2022 EEE Activity

Cumulative EEE Activity, 2023



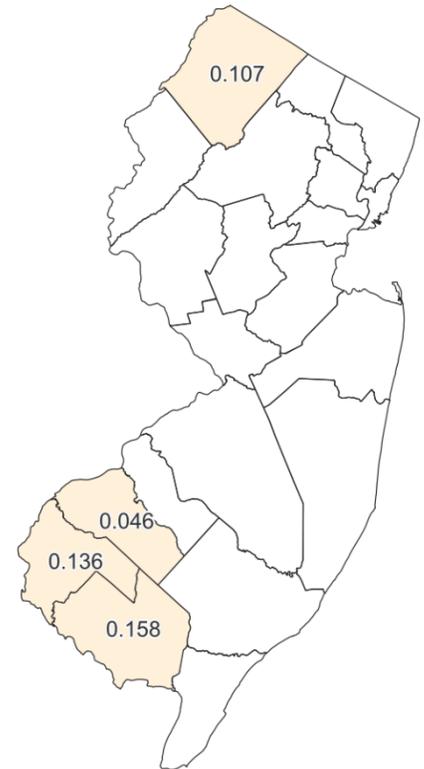
Jamestown Canyon Virus

- There have been no human cases of JCV in New Jersey in 2023.
- 8,504 mosquito pools from 21 counties have been tested for JCV with 5 pools testing positive in Cumberland, Gloucester, Salem, and Sussex counties. The positive pools were found in: *Anopheles quadrimaculatus s.l.* (1), *Anopheles punctipennis* (3), 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

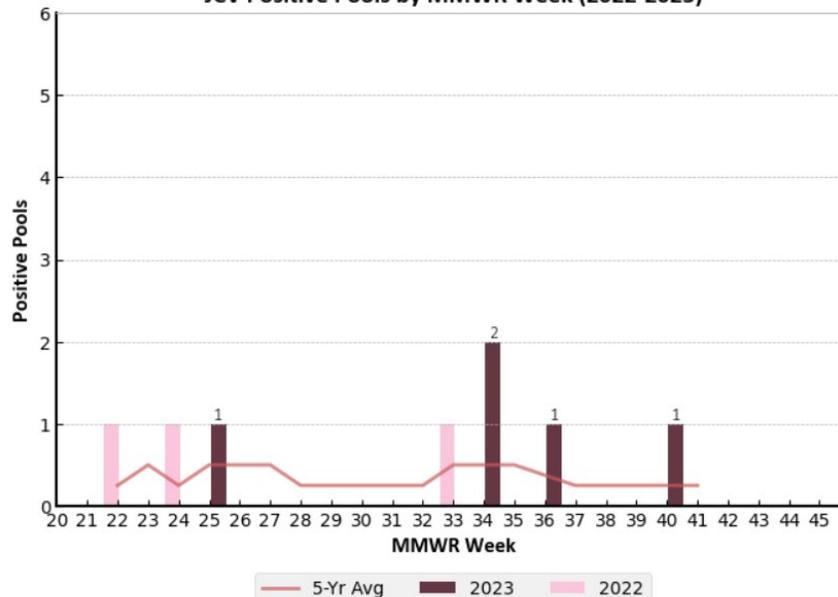
County	WEEK 42 Positive Pools		Cumulative Pos. Total* (WEEK 42)		# Pools Tested	Cumulative MFIR
	2023	2022	2023	2022	2023	2023
Sussex			2	1	648	0.107
Cumberland			1		415	0.158
Gloucester			1		737	0.046
Salem			1		433	0.136
Atlantic					420	
Bergen				2	371	
Burlington					325	
Camden					287	
Cape May					552	
Essex					317	
Hudson					289	
Hunterdon					400	
Mercer					422	
Middlesex					335	
Monmouth					466	
Morris					468	
Ocean					401	
Passaic					247	
Somerset					313	
Union					229	
Warren					429	
Total	0	0	5	3	8504	-

Cumulative JCV MFIR, 2023



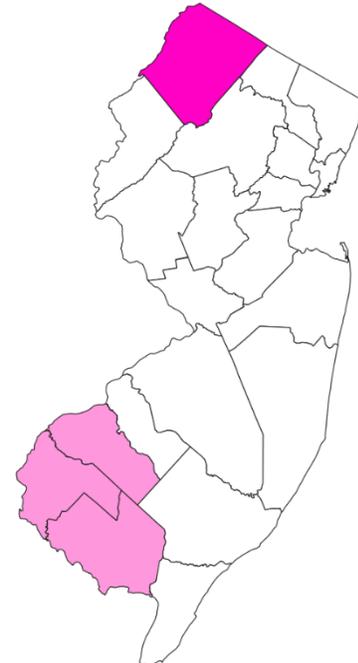
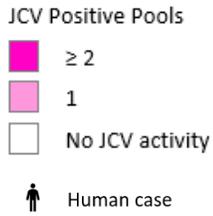
WEEK 42: Oct 16-22, 2022; Oct 15-21, 2023 *includes early season pools from 9 counties

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)

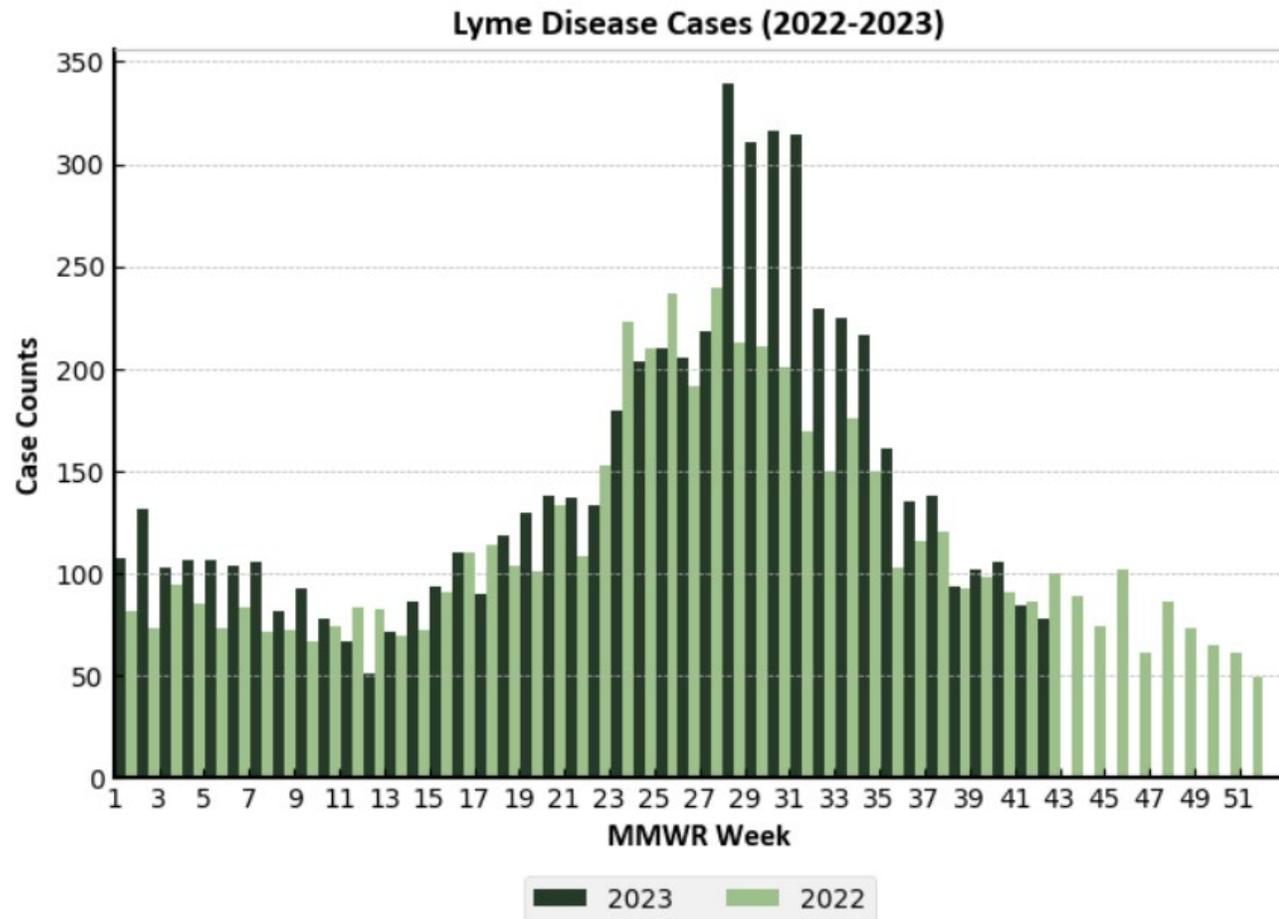
County	SLE		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	420		4		5		5		5	
Bergen	371		6		5		5		5	
Burlington	325		8		2		2		2	
Camden	311		11		4		4		4	
Cape May	1385		32		223				223	
Cumberland	415									
Essex	317				7		7		7	
Gloucester	743		5		2		2		2	
Hudson	289									
Hunterdon	400		3							
Mercer	422		13		11		11		11	
Middlesex	335				2		2		2	
Monmouth	466				2		2		2	
Morris	468				10		10		10	
Ocean	401		6		2		2		2	
Passaic	247		12		3		3		3	
Salem	445		23		1		1		1	
Somerset	313									
Sussex	648		77	1						
Union	229									
Warren	429		30		3		3		3	
Total	9379	-	230	1	282	-	59	-	282	-

^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 6,097 cases of Lyme disease reported in New Jersey in 2023, which is higher than the 2022 yearly total.
- The number of cases in Week 42 continues to decline.

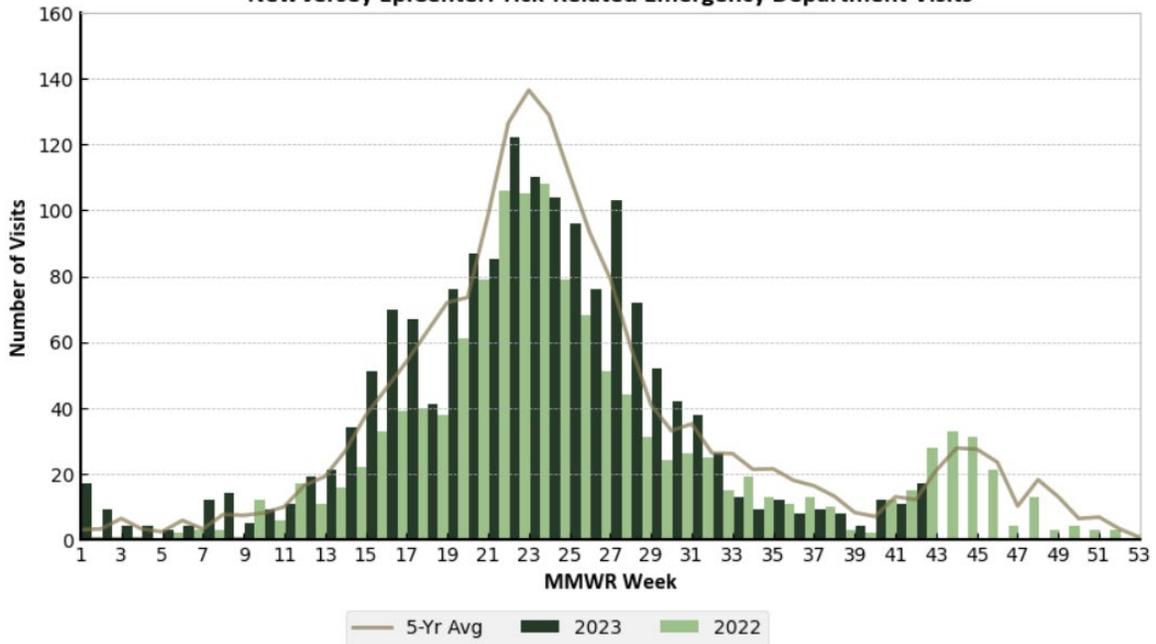


Tick-related Emergency Department Visits

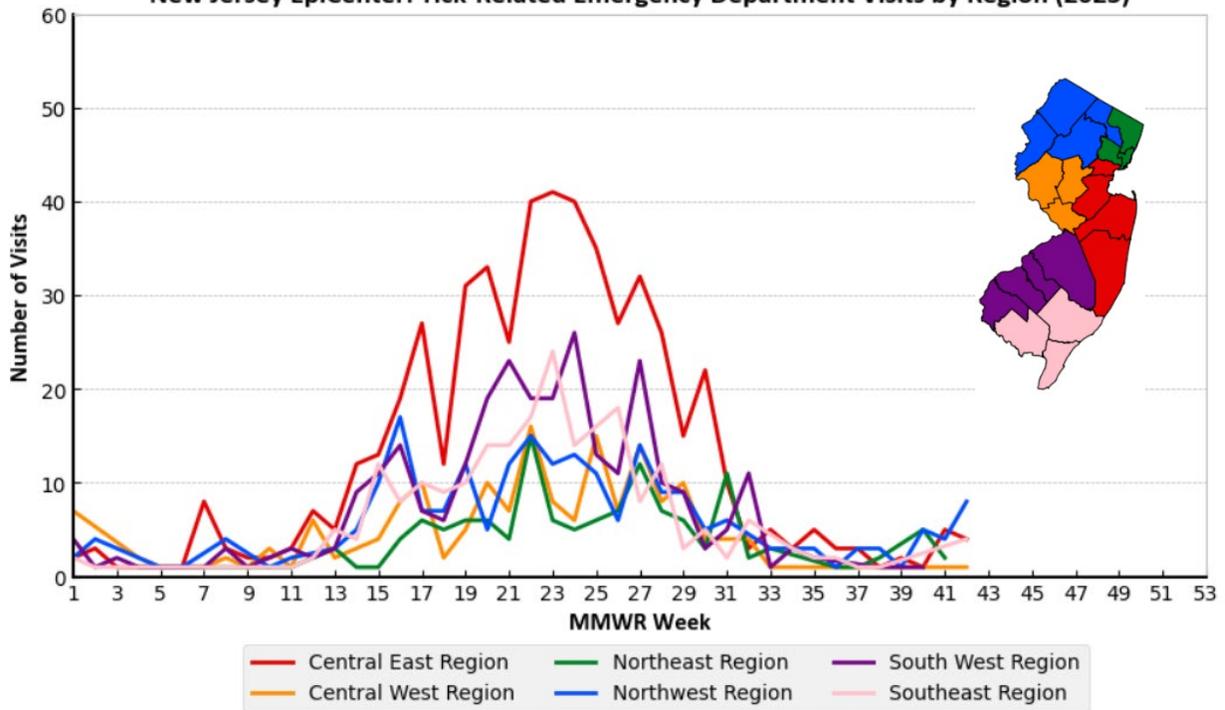
New Jersey's syndromic surveillance system, known as EpiCenter, receives real time Emergency Department (ED) data from 78 acute care and satellite health (99 percent reporting) facilities statewide. The system collects "chief complaint" information and limited patient registration data from existing 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 42, the number of tick-related ED visits is increasing, consistent with historical trends, and is expected to increase over the next month when adult deer ticks are active. The number of ED visits is highest in the northwest region.

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 25, 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/>