

Report Highlight:

- There are 8 WNV human cases (5 neuroinvasive) in 2022 from Bergen (2), Camden, Monmouth, Morris, Ocean (2), & Union counties.
- 22 mosquito pools tested positive for West Nile Virus (WNV) in Week 36 for a total of 493 positive pools this year. The number of positive pools between weeks 31-35 has remained steady and is slightly lower than historical averages in the past few weeks.
- The number of tick-related ED visits is declining but is higher than historical averages.
- The number of human ehrlichiosis cases to date in 2022 is higher than the 2021 total with the highest number reported in south and central-east counties.

1. Human Cases

N.J.A.C.8:57 mandates public health reporting of communicable diseases. 2022 data reflect cases that have been approved by NJDOH and do not include cases under investigation. All 2022 numbers are preliminary and subject to change.

Mosquito-borne diseases			Tickborne Diseases/Conditions		
	2022	2021		2022	2021
Chikungunya	1	4	Alpha-gal syndrome	79	-
Dengue	10	12	Anaplasmosis	64	202
Eastern equine encephalitis	-	-	Babesiosis	174	258
Jamestown Canyon	-	2	<i>Borrelia miyamotoi</i>	4	16
Malaria	27	71	Ehrlichiosis (<i>chaffeensis</i> , <i>ewingii</i>)	79	77
West Nile	8	36	Lyme disease*	193	3,518
Zika	-	-	Powassan	-	-
			Spotted fever group rickettsioses	13	39
			Tularemia	1	4

* Lyme disease surveillance has transitioned to a laboratory-only surveillance approach in 2022; as such, case reporting is delayed.

2. Mosquito Testing

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

West Nile virus (WNV):

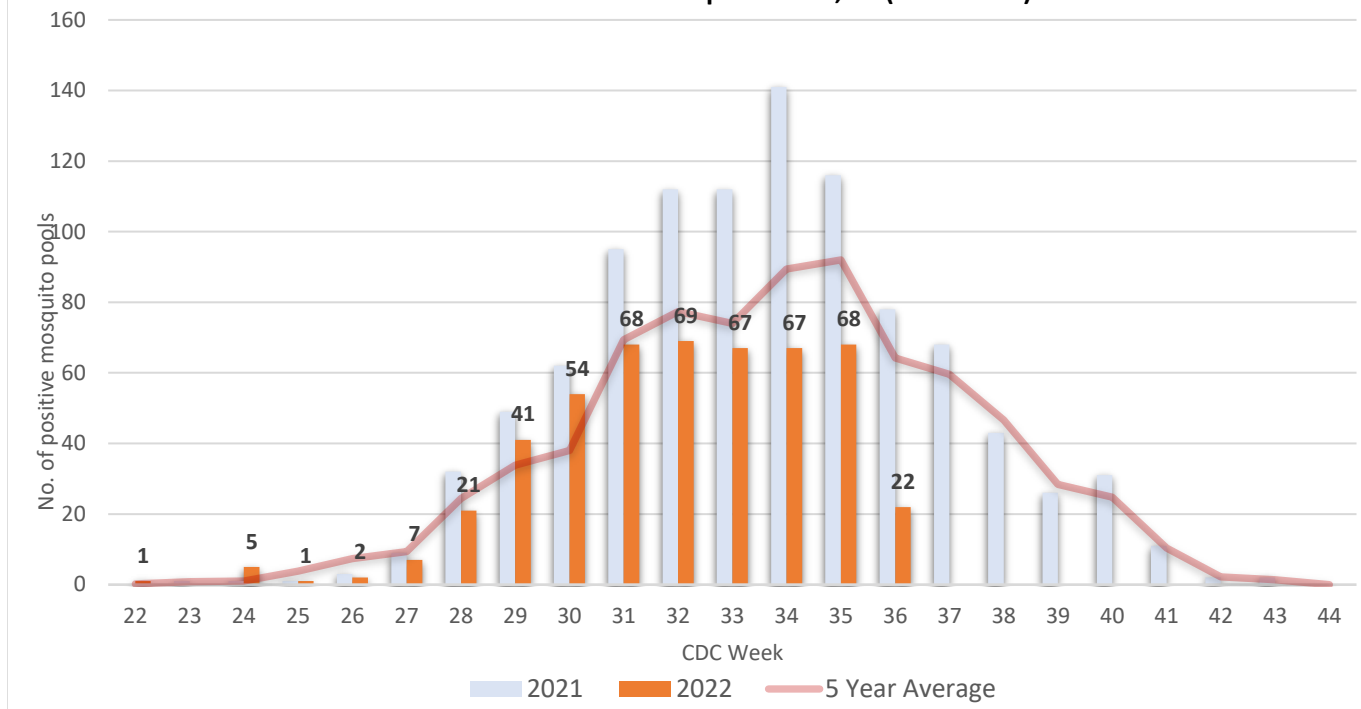
- A total of 5740 mosquito pools from 21 counties have been tested for WNV.
- 22 pools tested positive for WNV in Week 36, in 6 counties. There have been 493 positive WNV pools so far this year.
- The positive pools were detected in *Aedes albopictus* (10), *Ae. canadensis*(1), *Ae. cantator*(1), *Ae. japonicus* (7), *Ae. triseriatus* (2), *Ae. vexans* (1), *Anopheles punctipennis* (1), *An. quadrimaculatus* (1), *Culex sp.* (61), *Cx. erraticus* (1), *Cx. pipiens* (17), *Cx. pipiens/quinqüefasciatus/ restuans species mix* (33), *Cx. pipiens/restuans/ salinarius species mix* (356), and *Culiseta melanura* (1).
- The first WNV positive mosquito pool (*Ae. cantator*) was detected in week 22 from Burlington County.

*Test results may be incomplete; counties submit pools for testing on specific weekdays. Mosquito testing data reflects test results received from PHEL and CMBSL3 as of September 15, 2022

WNV Mosquito Pool Testing

County	Week 36 Positive Pools		Cumulative Pos. Total (Week 36)		# Pools Tested 2022*
	2022*	2021	2022*	2021	
Bergen		11	82	93	313
Hudson	3		79	43	253
Middlesex	11	5	54	88	257
Union		1	41	93	165
Passaic		2	33	16	188
Burlington		14	24	61	204
Mercer			24	19	360
Morris	1	9	23	46	432
Monmouth	2	3	22	41	372
Somerset	1	8	21	75	233
Camden		5	20	76	173
Gloucester		4	18	26	321
Hunterdon	4	6	14	39	258
Essex			11	4	120
Ocean		1	9	21	247
Sussex			5	24	388
Warren		1	5	5	353
Atlantic		8	4	31	315
Salem			4		342
Cape May				9	147
Cumberland				2	299
Total	22	78	493	812	5740

West Nile Virus Positive Mosquito Pools, NJ (2021-2022)



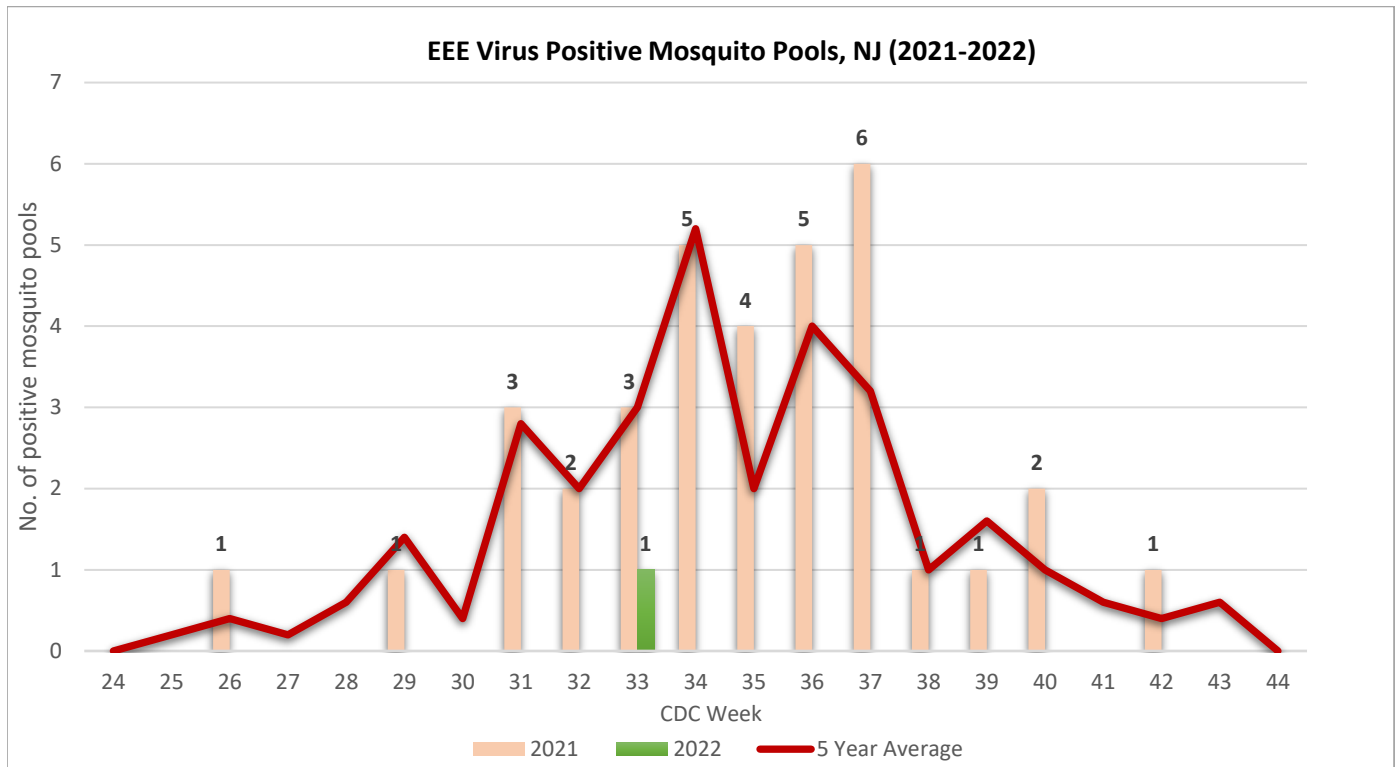
Eastern equine encephalitis virus (EEE)

- A total of 5636 mosquito pools from all 21 counties have been tested for EEE.
- The first EEE positive mosquito pool of 2022 has been identified in Morris County on Week 33. It was detected in a *Culex sp.* pool.
- In 2021, the first positive mosquito pool was detected in Week 26 from Gloucester County.

EEE Mosquito Pool Testing

County	Week 36 Positive Pools		Cumulative Pos. Total (Week 36)		# Pools Tested
	2022*	2021	2022*	2021	
Morris	1		1		432
Atlantic				8	315
Bergen					285
Burlington		1		1	203
Camden		4		7	172
Cape May				2	147
Cumberland					299
Essex					120
Gloucester				5	318
Hudson					253
Hunterdon					258
Mercer					347
Middlesex					257
Monmouth					372
Ocean				1	246
Passaic					181
Salem					328
Somerset					233
Sussex					343
Union					164
Warren					363
Total	-	5	1	24	5636

Week 36: Sep 5-11, 2021; Sep 4-10, 2022



Other viruses:

Mosquito pools from 21 counties have been tested for other arboviruses. Three pools tested positive for JCV.

Cumulative 2022 Mosquito Pool Testing (Other Viruses^a)

County	SLE		JCV		LAC		CHIKV		DENV		ZIKV	
	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos	Pools	Pos
Atlantic	315		315				4		4		4	
Bergen	285		285	2	17		2		2		2	
Burlington	203		203		1							
Camden	172		159		1		13		13		13	
Cape May	147											
Cumberland	299		299									
Essex	120		120									
Gloucester	318		307		3							
Hudson	253		253									
Hunterdon	258		258									
Mercer	347		347		13							
Middlesex	257		257									
Monmouth	372		372									
Morris	432		432									
Ocean	246		246		1							
Passaic	181		181		7							
Salem	328		317		15							
Somerset	233		233									
Sussex	343		343	1	9							
Union	164		164		1							
Warren	363		363		25							
Total	5636	-	5454	3	93	-	19	-	19	-	19	-

^a St. Louis encephalitis virus (SLE), Jamestown Canyon Virus (JCV), La Crosse encephalitis virus (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)
 Numbers in white columns represent number of pools tested to date in 2022

Numbers in green shaded columns represent positive pools in 2022

Jamestown Canyon virus (JCV):

- The first mosquito pool (*Anopheles punctipennis*) in Sussex County tested positive for JCV in Week 33. In 2021, the first positive pool was also detected in Sussex County, 6 weeks earlier in Week 27.
- Two mosquito pools (*Ae. cantator*) from Bergen County tested positive for JCV in Week 22 and Week 24.
- In 2021, eight positive JCV pools were reported in Atlantic, Camden, Essex, Gloucester, and Sussex counties.
- Jamestown Canyon virus has not been detected in humans in 2022.
- NJ reported 2 human JCV cases in 2021 in Sussex County (week 18) and in Essex County (week 36). The first NJ JCV case was reported in 2015 in Sussex County.

3. Equine/Avian /Other Animal Testing

Equine testing for WNV and EEE is conducted at the New Jersey Department of Agriculture's Animal Health and Diagnostic Laboratory.

- Four raptors tested positive for WNV in Week 34: a Cooper’s hawk in Morris County and red-tailed hawks in Morris, Essex, and Somerset counties.
- A red-tailed hawk tested positive for WNV in Week 31 in Somerset County.
- No animals have tested positive for EEE in 2022.
- Routine avian testing has been discontinued but is available upon request at PHEL.

WNV/EEE Positive Test Results

	WEEK 36		Cum. Total (Year)	
	2022*	2021	2022*	2021
Equine (EEE)				
Equine (WNV)				
Avian (WNV)			5	7
Other				

Week 36: Sep 5-11, 2021; Sep 4-10, 2022

4. Surveillance Maps

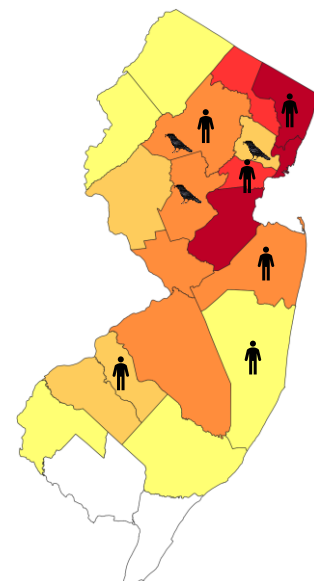
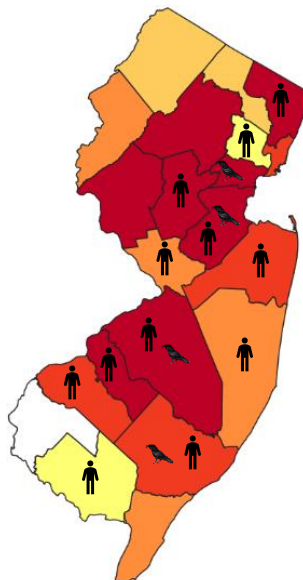
West Nile Virus (WNV)

2021 WNV Activity

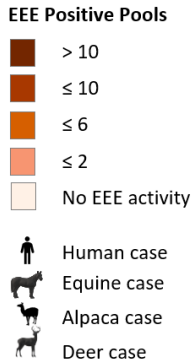
Cumulative WNV Activity 2022

WNV Positive Pools

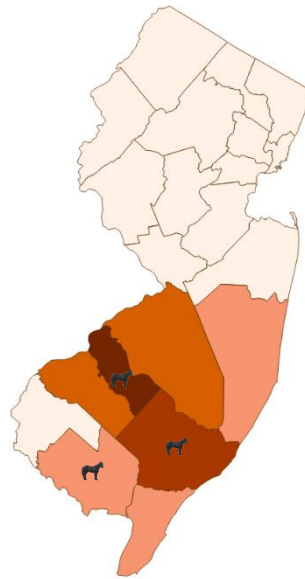
- > 50
- ≤ 50
- ≤ 30
- ≤ 20
- < 10
- 0
- ≥ 1 WNV human case
- ≥ 1 WNV equine case
- ≥ 1 WNV avian case



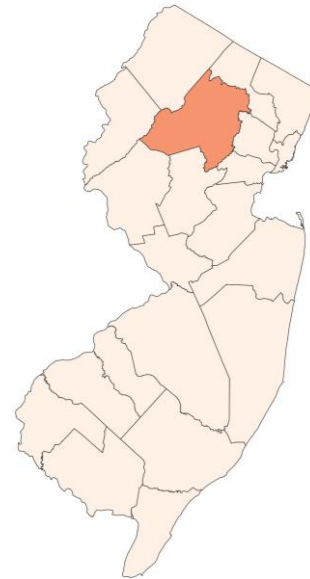
Eastern equine encephalitis (EEE)



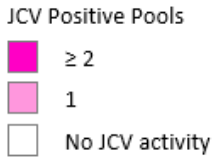
2021 EEE Activity



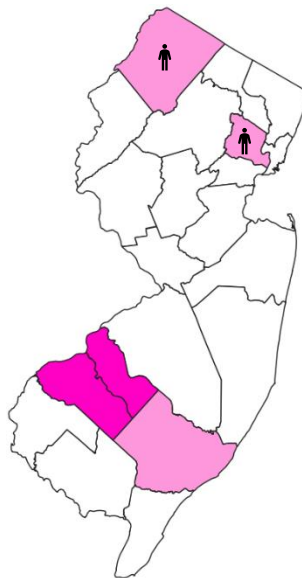
Cumulative EEE Activity 2022



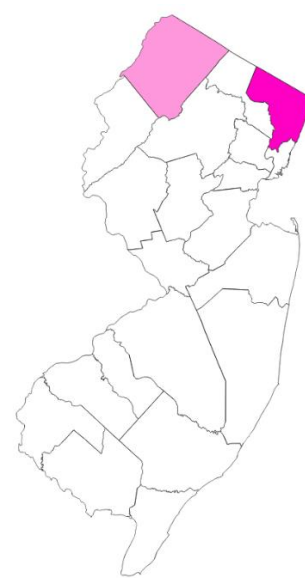
Jamestown Canyon Virus



2021 JCV Activity



Cummulative JCV Activity 2022



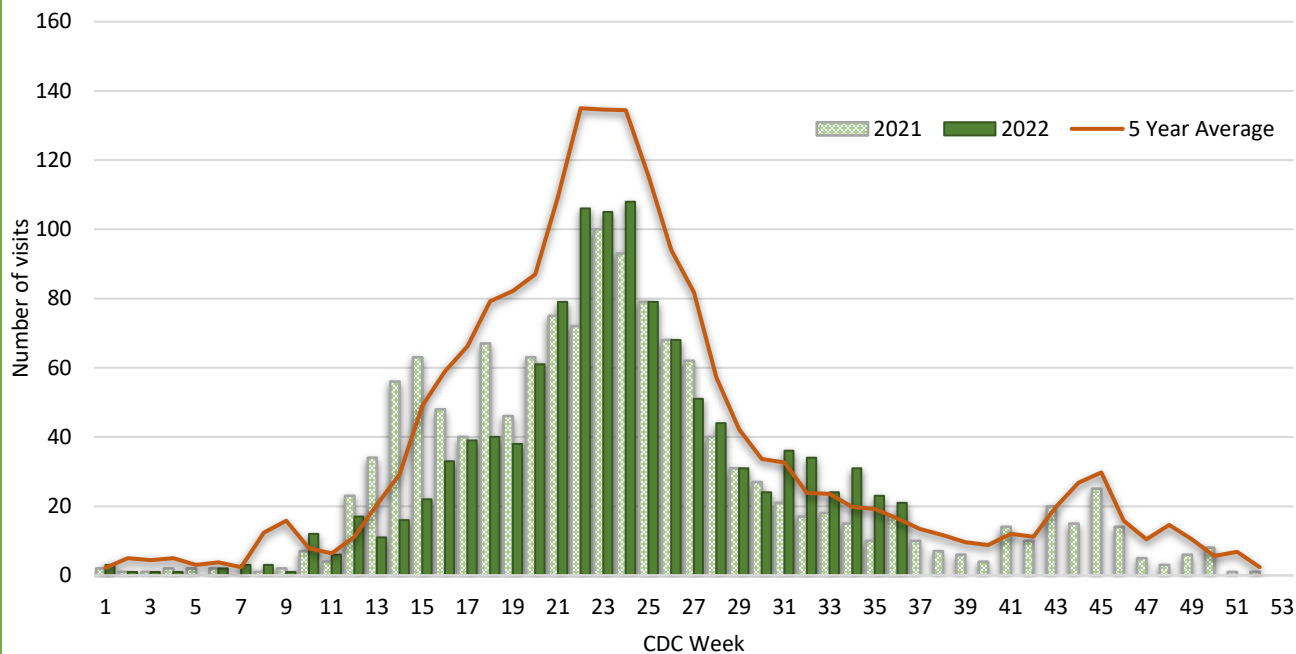
5. Syndromic Surveillance for Tick-related Emergency Department Visits

EpiCenter is a syndromic surveillance system developed and maintained by Health Monitoring Systems, Inc, for monitoring by health departments in the United States. New Jersey’s 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.

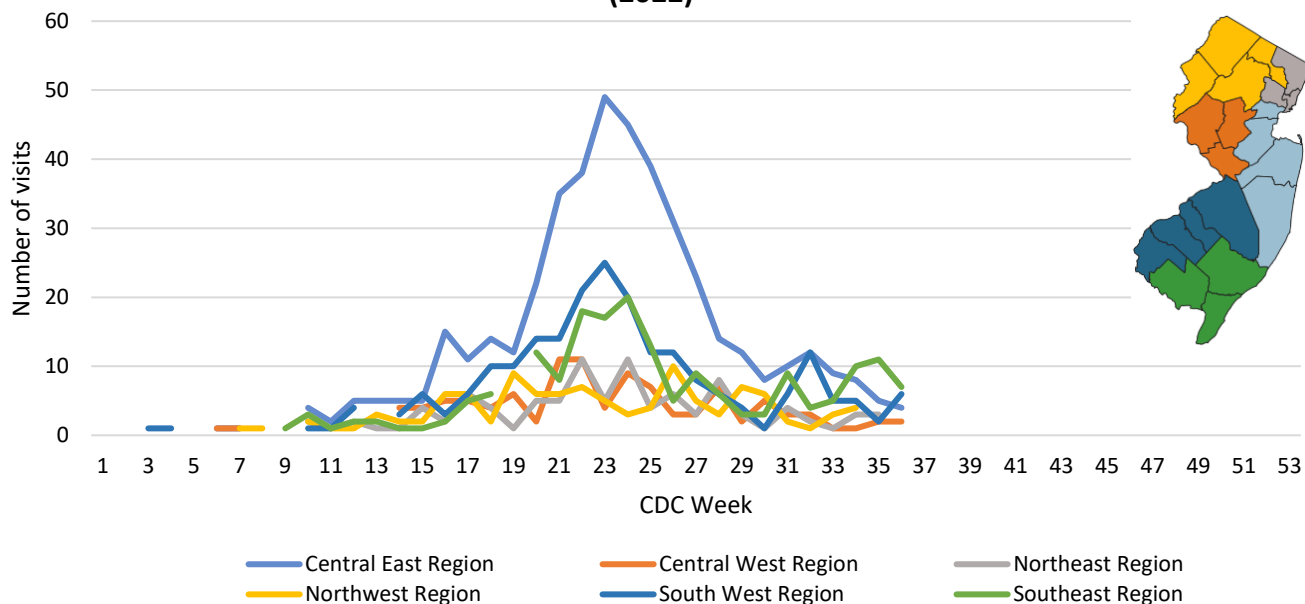
The chart below represents NJ residents seen at emergency departments statewide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when adult *Ixodes scapularis* (blacklegged ticks) are active.

In Week 36, the number of tick-related ED visits remained above the 5-year average. ED visits were highest in the southeast region of the state.

New Jersey EpiCenter: Tick-Related Emergency Department Visits



New Jersey EpiCenter: Tick-Related Emergency Department Visits by Region (2022)



Data reflects ED visits downloaded from EpiCenter as of September 15, 2022

For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- New Jersey Arboviral Activity Maps: <http://bit.ly/JerseySurv>
- NJDEP Office of Mosquito Control Coordination: <http://www.nj.gov/dep/mosquito/>
- NJDA Division of Animal Health: <http://www.nj.gov/agriculture/divisions/ah/>
- Rutgers Center for Vector Biology: <http://vectorbio.rutgers.edu/>