

Report Highlight:

- There are 6 WNV human cases (3 neuroinvasive) in 2022 from Bergen, Camden, Morris, Ocean (2), & Union counties.
- 31 mosquito pools tested positive for West Nile Virus (WNV) in Week 35 for a total of 420 positive pools this year. The number of positive pools peaked in Week 32 and is declining.
- Four raptors tested positive for WNV in Week 34 in Essex, Morris (2), and Somerset counties.
- The number of tick-related ED visits remains elevated and are highest in the southeast region of the state.
- The number of human ehrlichiosis cases to date in 2022 has surpassed 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.

Human Cases

Mosquito-borne diseases			Tickborne Diseases/Conditions		
	2022	2021		2022	2021
Chikungunya	1	4	Alpha-gal syndrome	71	-
Dengue	9	12	Anaplasmosis	64	202
Eastern equine encephalitis	-	-	Babesiosis	169	258
Jamestown Canyon	-	2	<i>Borrelia miyamotoi</i>	4	16
Malaria	24	71	Ehrlichiosis (<i>chaffeensis</i> , <i>ewingii</i>)	79	77
West Nile	6	36	Lyme disease*	195	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 Bio-safety Level 3 Laboratory (CMBLS3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.

West Nile virus (WNV):

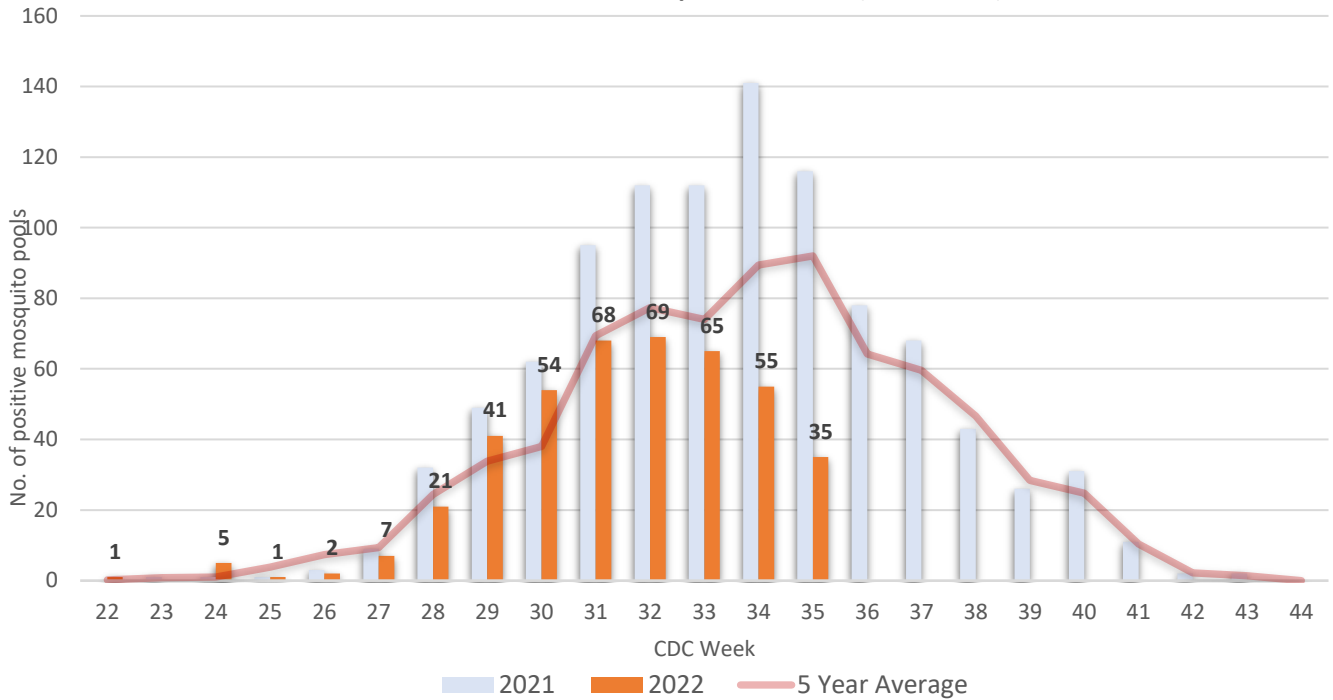
- A total of 5270 mosquito pools from all 21 counties have been tested for WNV.
- 31 pools tested positive for WNV in Week 35, in 9 counties. There have been 420 positive WNV pools so far this year.
- The positive pools were detected in *Aedes albopictus* (10), *Ae. canadensis*(1), *Ae. cantator*(1), *Ae. japonicus* (6), *Ae. triseriatus* (2), *Ae. vexans* (1), *Culex sp.* (52), *Cx. pipiens* (15), *Cx. pipiens/quinqüefasciatus/restuans species mix* (23) and *Cx. pipiens/restuans/salinarius species mix* (309).
- 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 CMBLS3 as of September 8, 2022

WNV Mosquito Pool Testing

County	Week 35 Positive Pools		Cumulative Pos. Total (Week 35)		# Pools Tested
	2022*	2021	2022*	2021	
Hudson	9	6	76	43	238
Bergen	1	10	74	82	293
Middlesex	5	15	43	83	240
Union	4	7	39	92	151
Passaic		4	23	14	168
Burlington	2		22	47	180
Monmouth	3	8	20	38	349
Camden	5	4	19	71	160
Mercer		4	19	19	315
Morris			16	37	372
Somerset		15	16	67	213
Gloucester		13	15	22	305
Essex			9	4	113
Hunterdon	1	5	9	33	232
Ocean		3	7	20	216
Atlantic	1	10	4	23	297
Warren		7	4	23	369
Sussex		3	4	5	328
Salem			1		304
Cape May		2		9	147
Cumberland				2	280
Total	31	116	420	734	5270

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



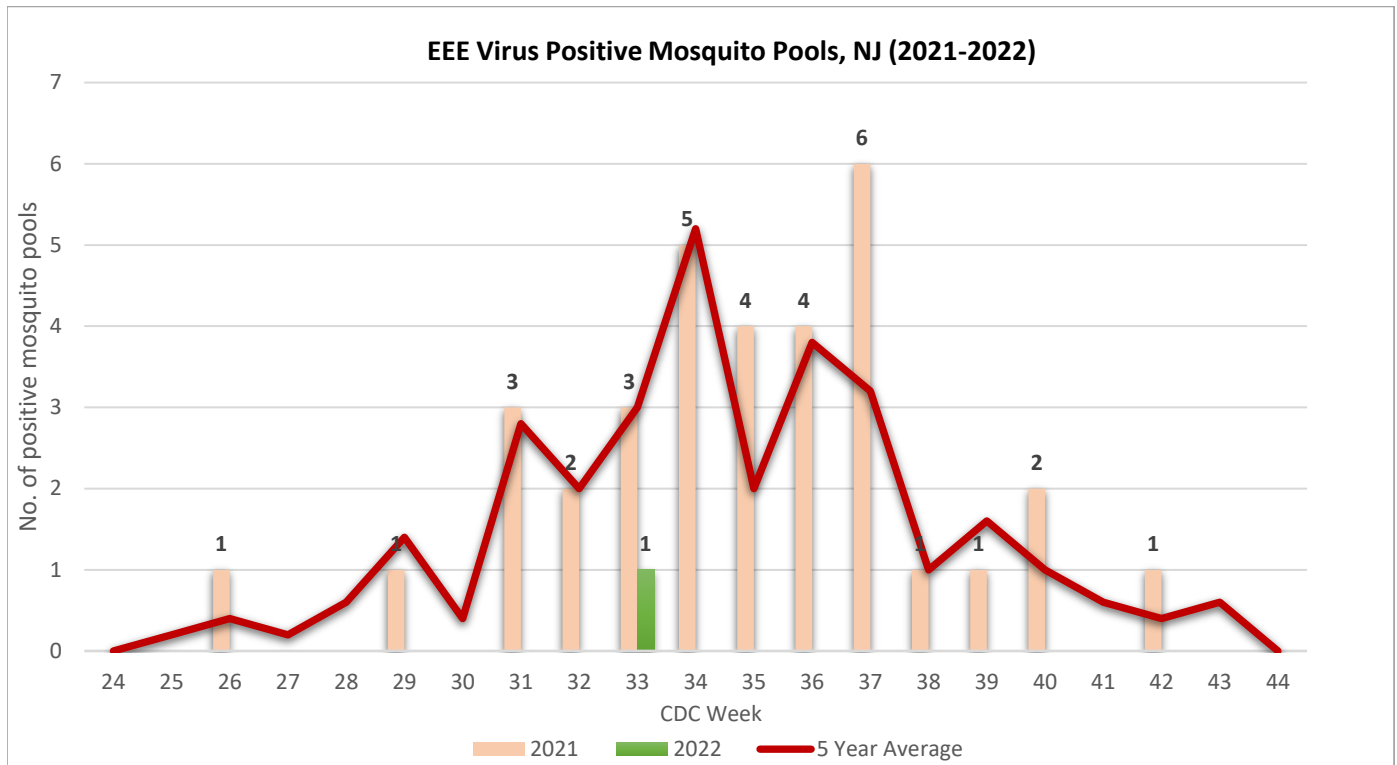
Eastern equine encephalitis virus (EEE)

- A total of 5172 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 35 Positive Pools		Cumulative Pos. Total (Week 35)		# Pools Tested
	2022*	2021	2022*	2021	2022*
Morris			1		372
Atlantic		1		8	297
Bergen					265
Burlington					179
Camden				3	159
Cape May				2	147
Cumberland					280
Essex					113
Gloucester		3		5	302
Hudson					238
Hunterdon					232
Mercer					302
Middlesex					240
Monmouth					349
Ocean				1	216
Passaic					161
Salem					294
Somerset					213
Sussex					318
Union					150
Warren					345
Total	-	4	1	19	5172

Week 35: Aug 29-Sep 4, 2021; Aug 28-Sep 3, 2022



Other viruses:

Mosquito pools from 21 counties have been tested for other arboviruses. Two 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	297		297				4		4		4	
Bergen	265		265	2	17		2		2		2	
Burlington	179		179		1							
Camden	159		146		1		13		13		13	
Cape May	147											
Cumberland	280		280									
Essex	113		113									
Gloucester	302		291		3							
Hudson	232		238									
Hunterdon	2232		232									
Mercer	302		302		13							
Middlesex	240		240									
Monmouth	349		349									
Morris	372		372									
Ocean	216		216									
Passaic	161		161		7							
Salem	294		283		11							
Somerset	213		213									
Sussex	318		318	1	9							
Union	150		150		1							
Warren	345		345		24							
Total	5172	-	4990	3	87	-	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 35		Cum. Total (Year)	
	2022*	2021	2022*	2021
Equine (EEE)				
Equine (WNV)				
Avian (WNV)			5	
Other				

Week 35: August 29-Sep 4, 2021; Aug 28-Sep 3, 2022

4. Surveillance Maps

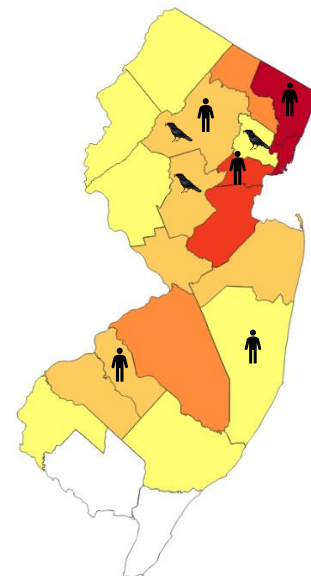
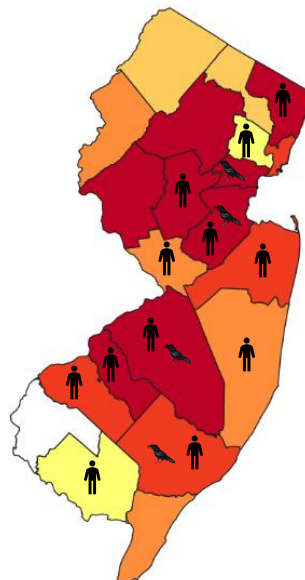
West Nile Virus (WNV)

2021 WNV Activity

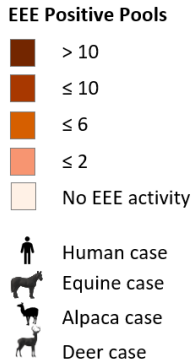
Cumulative WNV Activity 2022

WNV Positive Pools

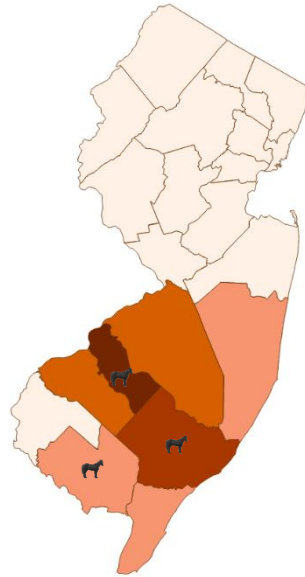
- > 50
- ≤ 50
- ≤ 30
- ≤ 20
- < 10
- 0
- ≥ 1 WNV human case
- ≥ 1 WNV equine case
- ≥ 1 WNV avian case



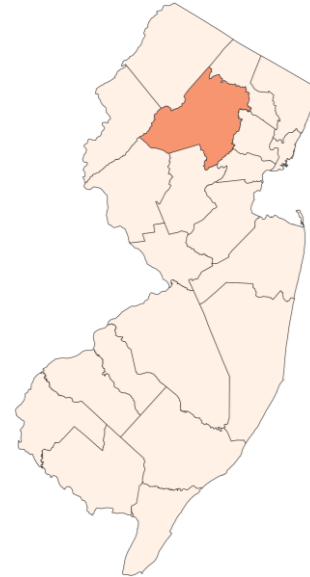
Eastern equine encephalitis (EEE)



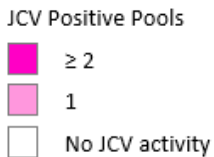
2021 EEE Activity



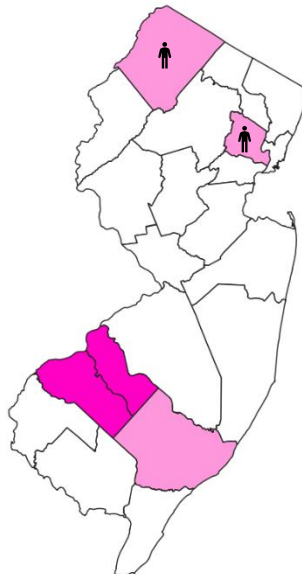
Cumulative EEE Activity 2022



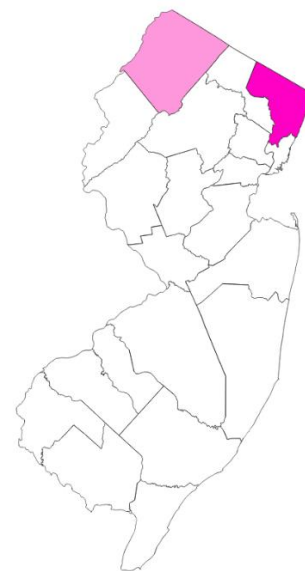
Jamestown Canyon Virus



2021 JCV Activity



Cummulative JCV Activity 2022



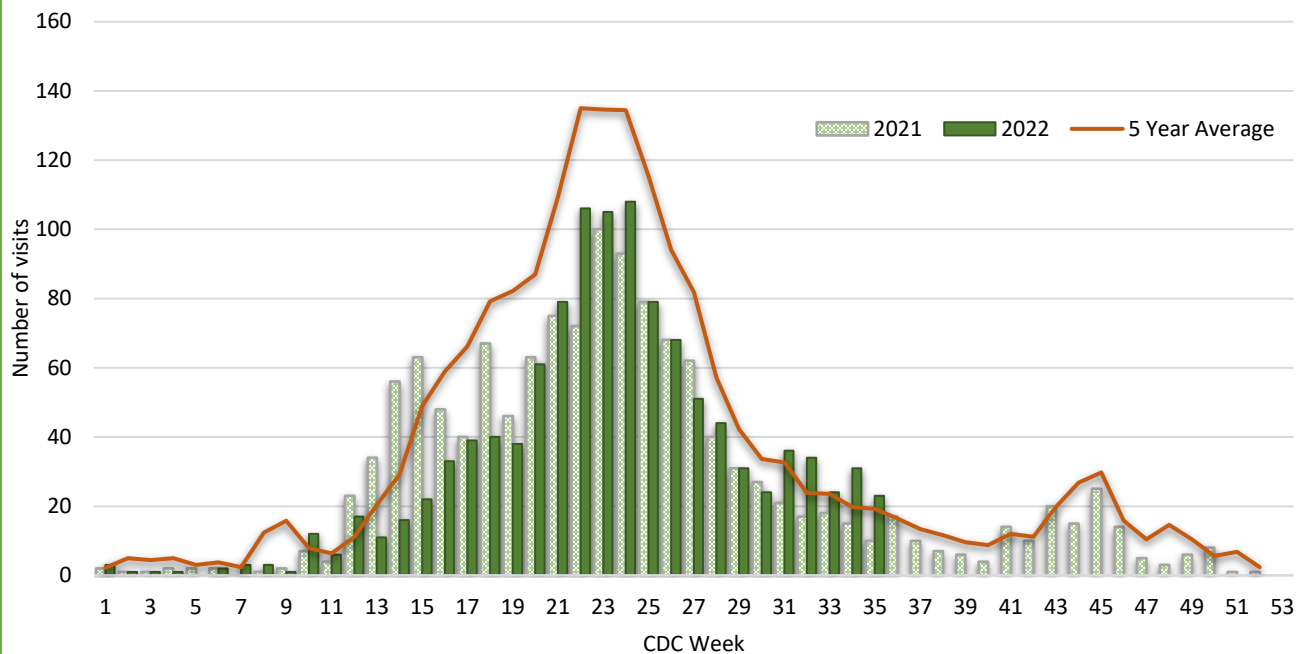
5. Syndromic Surveillance for Tick-related Emergency Department Visits

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.

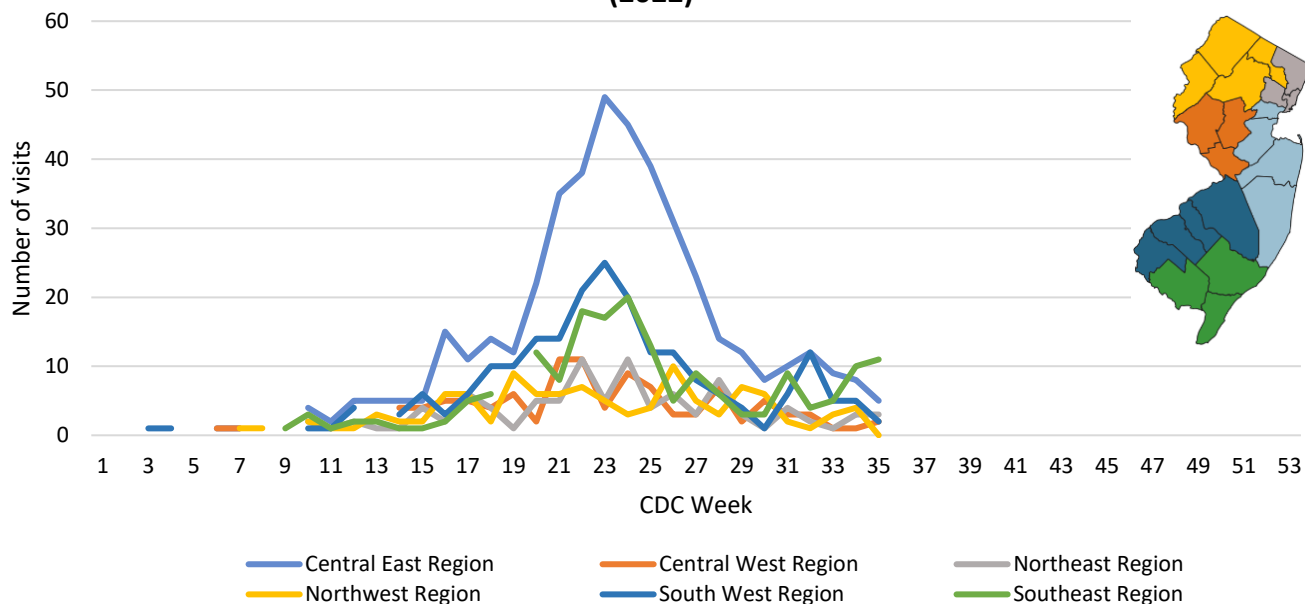
The chart below represents NJ residents seen at emergency departments statewide with a tick-bite complaint or signs/symptoms associated with a reported tick-bite. Tick-related ED visits occur throughout the year with peak number of visits in the summer months and a smaller peak in the fall weeks when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

In Week 35, the number of tick-related ED visits decreased, but 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 8, 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/>