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1. Human Testing

New Jersey Administrative Code (N.J.A.C.) Title 8 Chapter 57 mandates public health reporting of specified vector-borne diseases to prevent further disease spread. The table presented below is a summary of selected mosquito and tick-borne disease cases reported to NJDOH.

Table 1. Human Cases^a

Mosquito-borne diseases			Tick-borne Diseases		
	2017 ^b	2016 Cases		2017 ^b	2016 Cases
Chikungunya	12	11	Babesiosis	193	174
Dengue	24	50	Ehrlichiosis/Anaplasmosis	256	193
Eastern equine encephalitis	-	1	Lyme disease	5091	4350
West Nile	8	11	Powassan	4	-
Zika	37	237	Spotted fever rickettsioses	136	64

^a Data for 2017 reflect confirmed and probable cases that have been approved by NJDOH. Suspect cases and cases under investigation are excluded. All 2017 numbers are preliminary and are subject to change.

^b Cumulative through week 52: December 24-December 30, 2017

Zika Update

In 2016, 237 Zika cases were reported to NJDOH. As of December 30, 2017, 37 Zika cases have been reported. All Zika cases have been travel-associated. The significant change in the number of cases from 2016 to 2017 is consistent with declining disease transmission in the Americas. The distribution of cases reported in 2016 and 2017 by county is presented in Figure 1.

Prior to June 2017, the NJ Public Health and Environmental Laboratories (PHEL) tested an average of 256 persons each month. The number of persons tested for Zika has declined with the release of new CDC guidance in August 2017 that no longer recommend routine testing for asymptomatic pregnant women with recent Zika exposure.

NJDOH has aligned all Zika testing at PHEL to current CDC recommendations and will continue to monitor reported Zika cases.

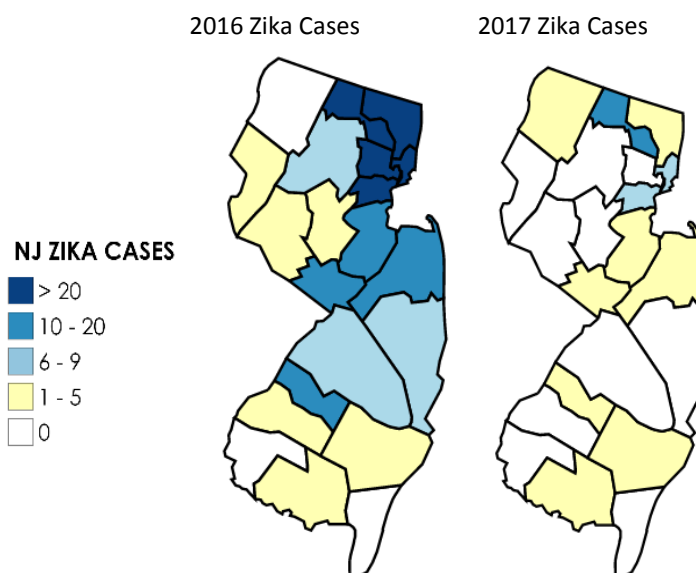


Figure 1. Zika Virus Cases in NJ

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 (CMBSL3) perform arboviral testing on mosquito pools collected by county mosquito control agencies throughout New Jersey.

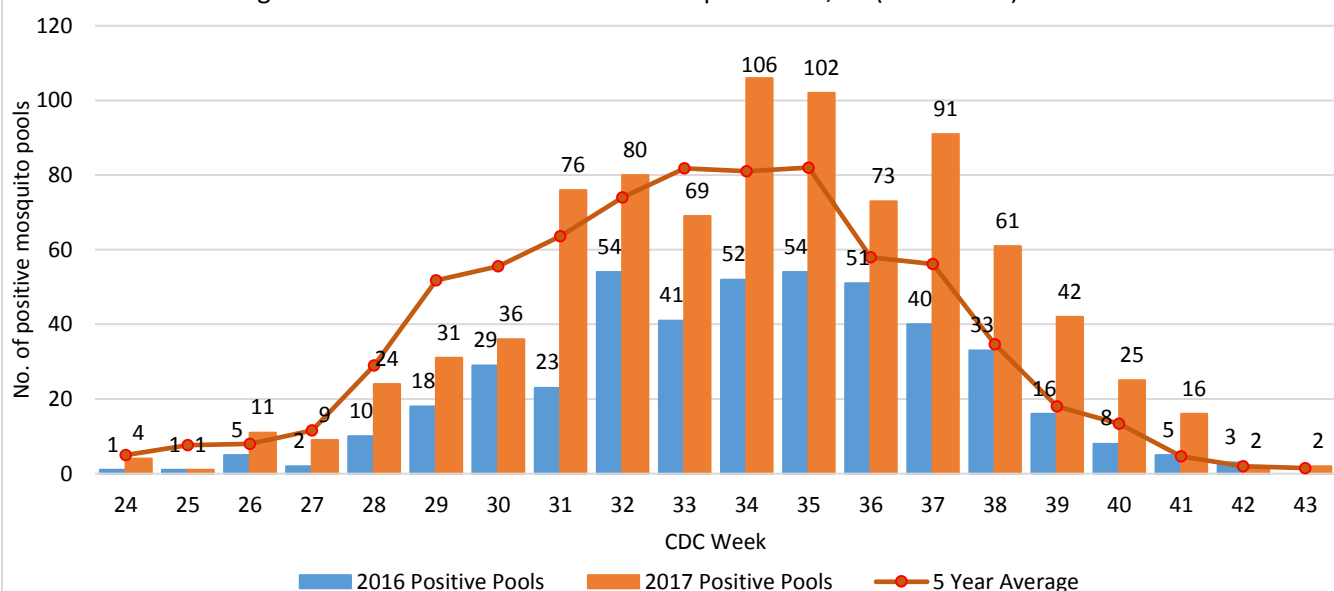
West Nile Virus (WNV)

- In 2017, 861 out of 10,481 mosquito pools (182,732 mosquitoes) submitted for testing were positive for WNV (Table 2.1). The number of positive pools is 93% higher than the total number of positive pools reported in 2016 ($n=447$).
- 90 % ($n=775$) of the WNV positive pools were *Culex spp.*
- Bergen, Gloucester and Union Counties had the highest number of positive pools this season, reporting 100 or more WNV positive pools.
- The number of WNV positive pools peaked in week 34 (August 20-26, 2017) with a total of 106 positive pools reported (Figure 2.1).
- Positive pools reported from week 34 (August 20-26, 2017) through week 41 (October 8-14, 2017) was higher than number of positive pools at the same time in 2016, and 48% higher than the 5-year average of WNV positive pools during the same period.

Table 2.1 WNV Mosquito Pools, 2017

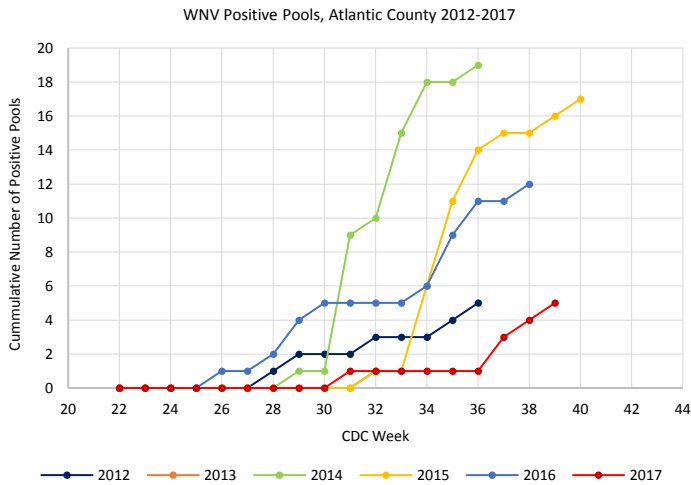
County	# Pools Tested	# Positive
Bergen	245	125
Gloucester	547	103
Union	245	100
Hunterdon	336	90
Hudson	201	71
Middlesex	245	57
Sussex	335	40
Camden	208	38
Somerset	233	37
Warren	312	31
Morris	317	29
Cape May	4587	27
Burlington	320	27
Mercer	300	24
Monmouth	717	16
Ocean	282	15
Salem	221	10
Passaic	147	7
Essex	170	6
Atlantic	270	5
Cumberland	243	3
Total	10,481	861

Figure 2.1. West Nile Virus Positive Mosquito Pools, NJ (2016-2017)

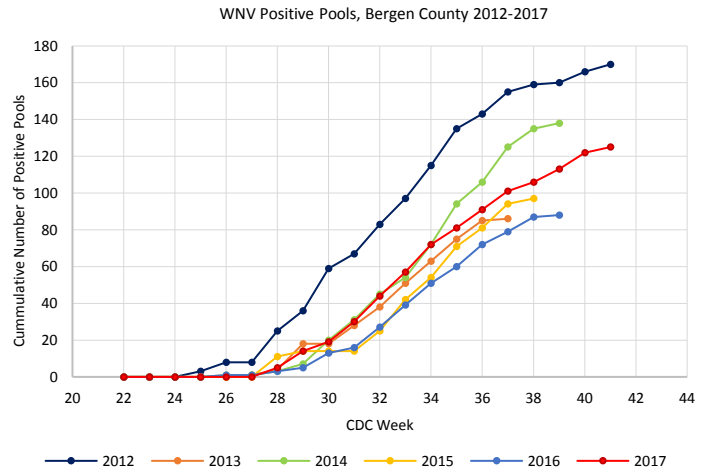


WNV Positive Mosquito Pools by NJ County, 2012-2017

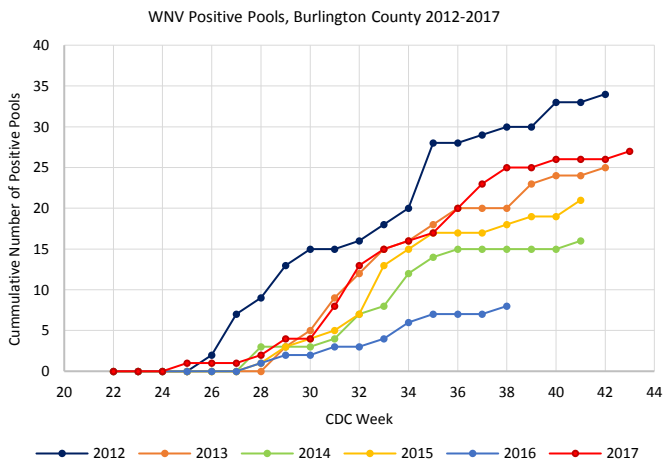
Atlantic County



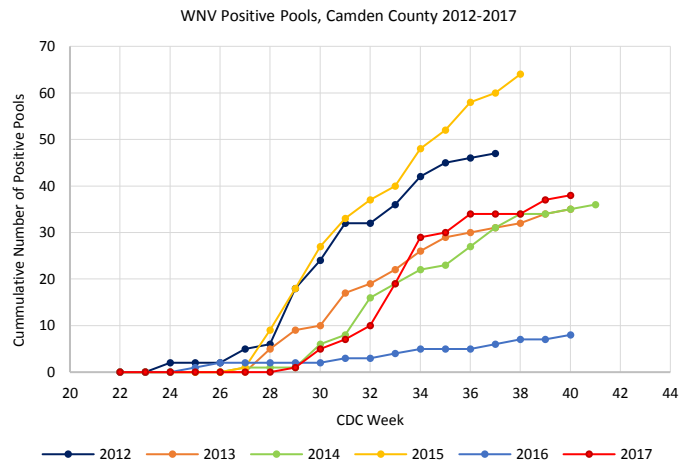
Bergen County



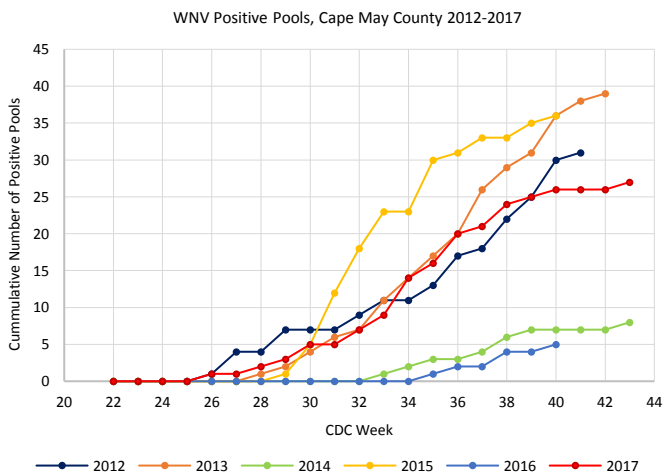
Burlington County



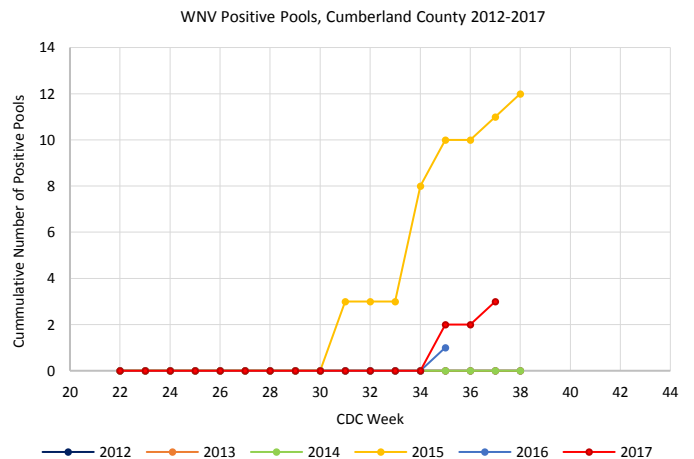
Camden County



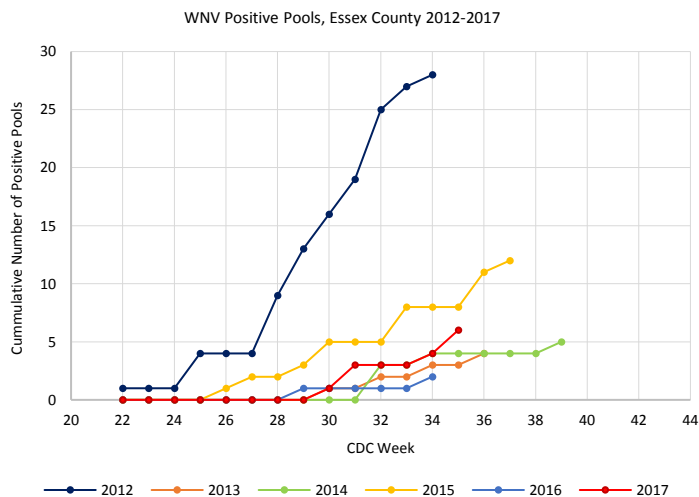
Cape May County



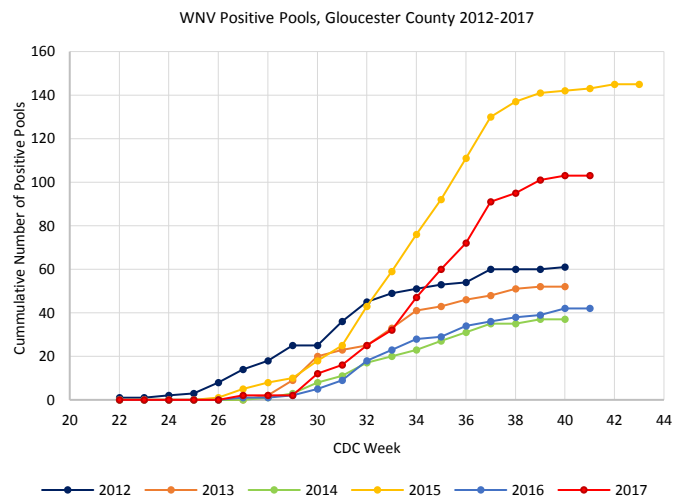
Cumberland County



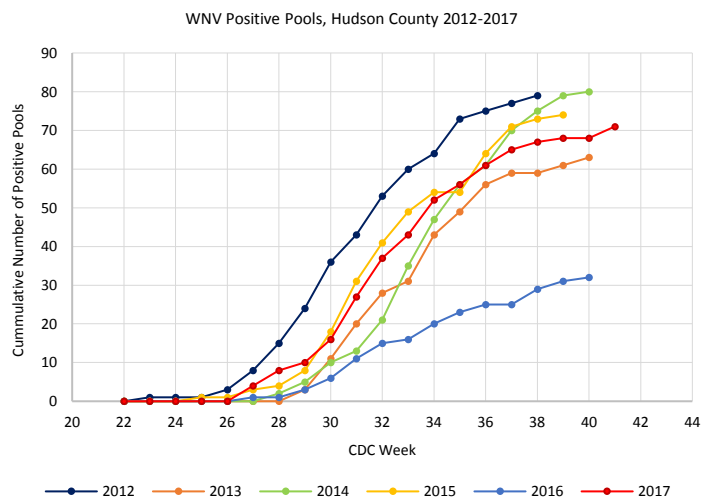
Essex County



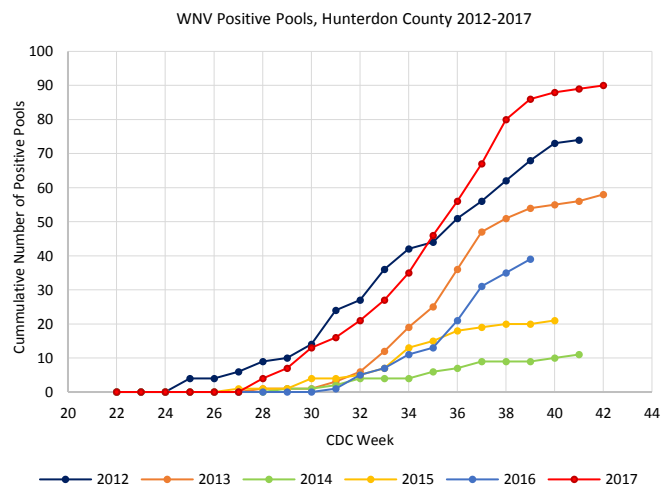
Gloucester County



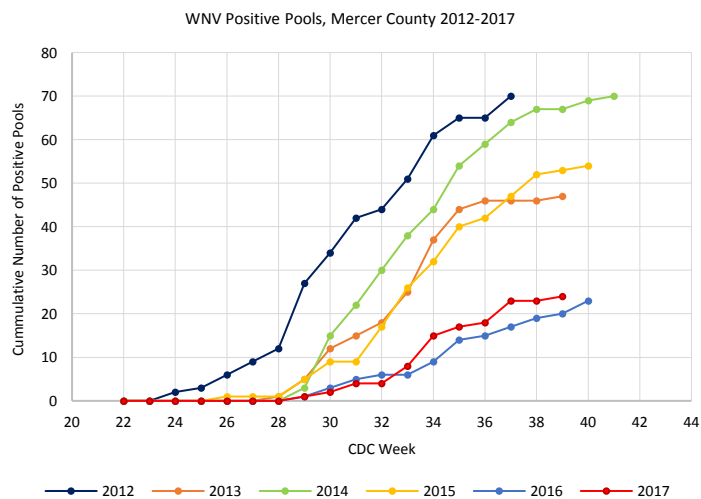
Hudson County



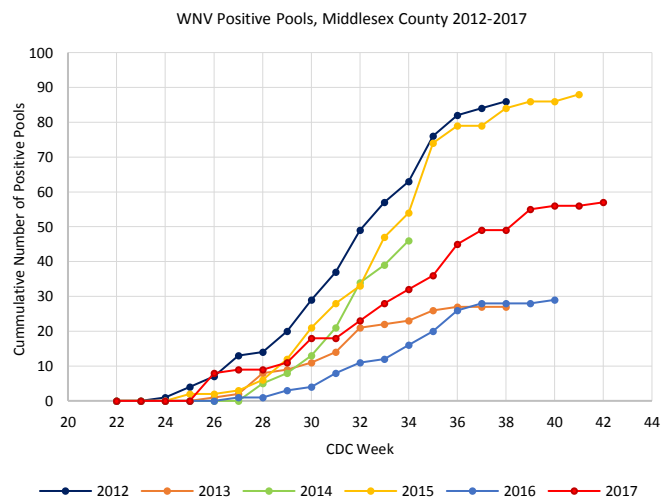
Hunterdon County



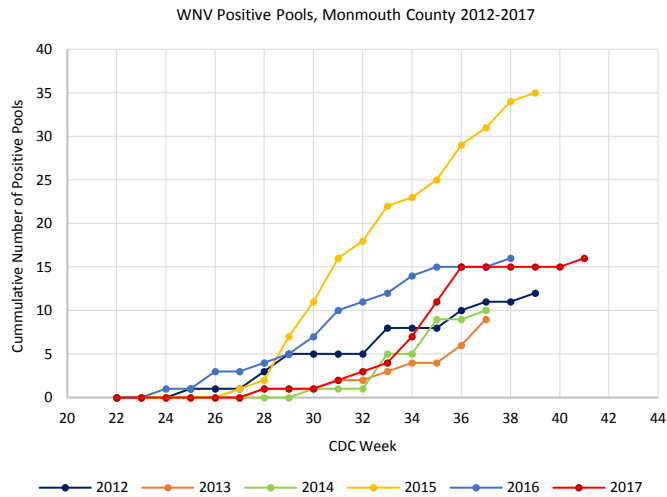
Mercer County



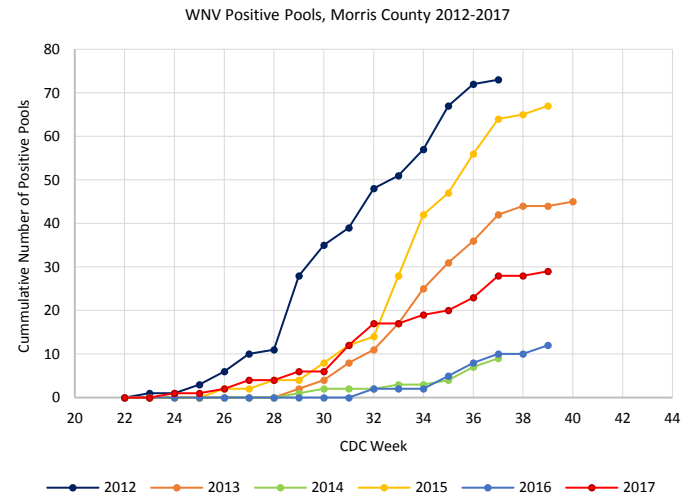
Middlesex County



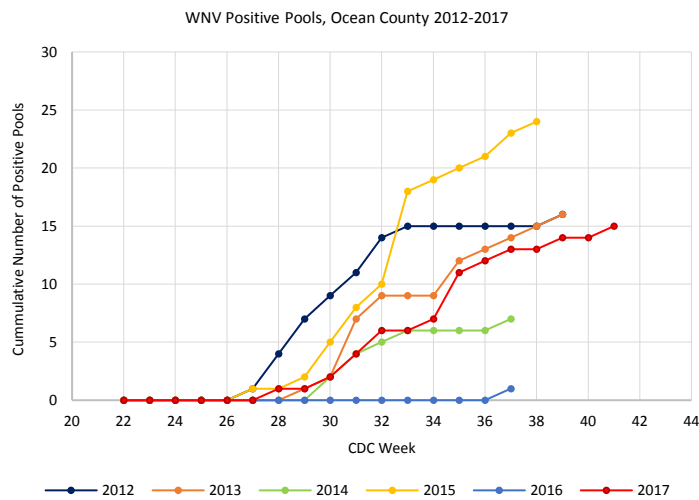
Monmouth County



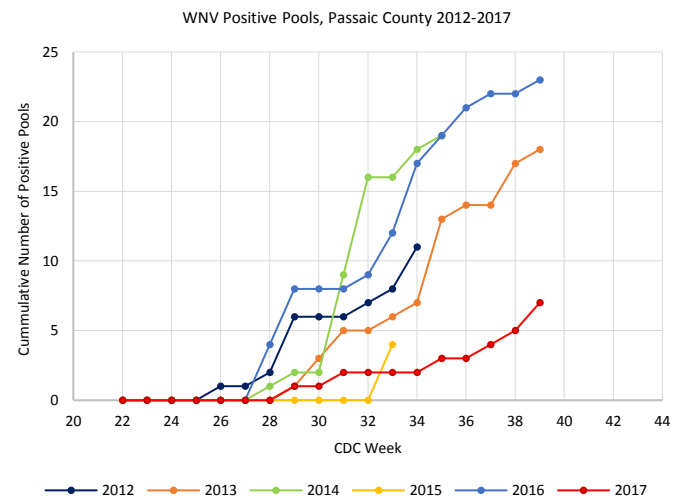
Morris County



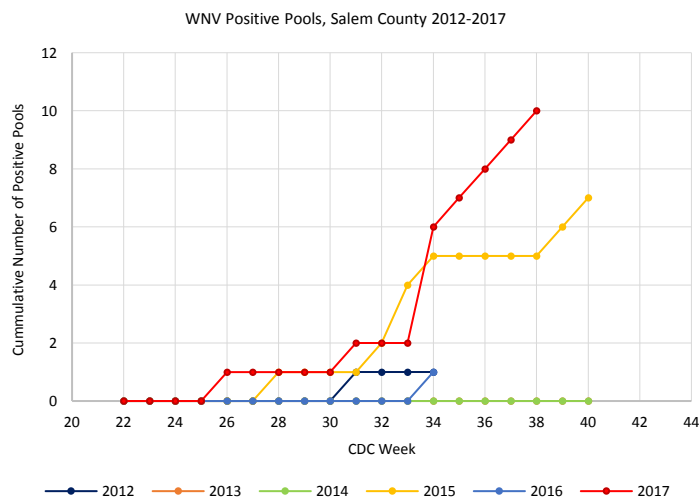
Ocean County



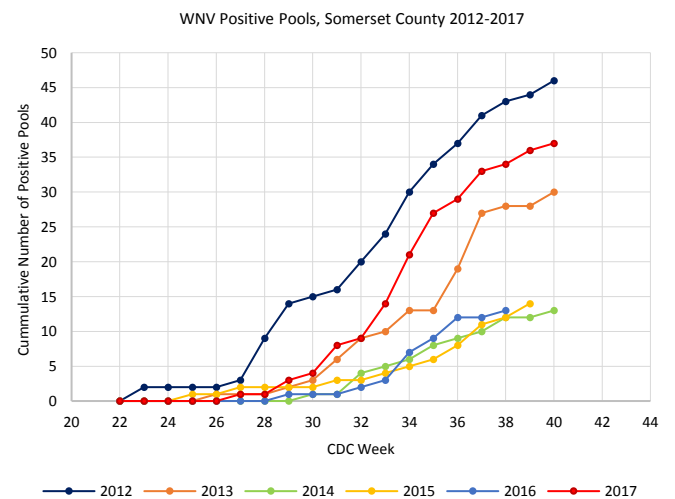
Passaic County



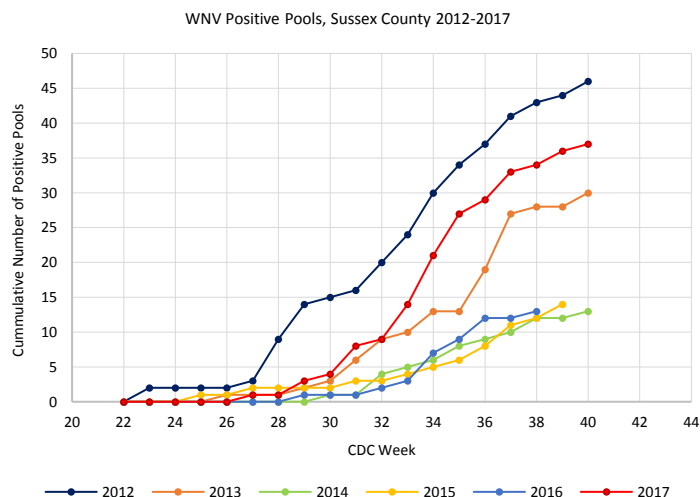
Salem County



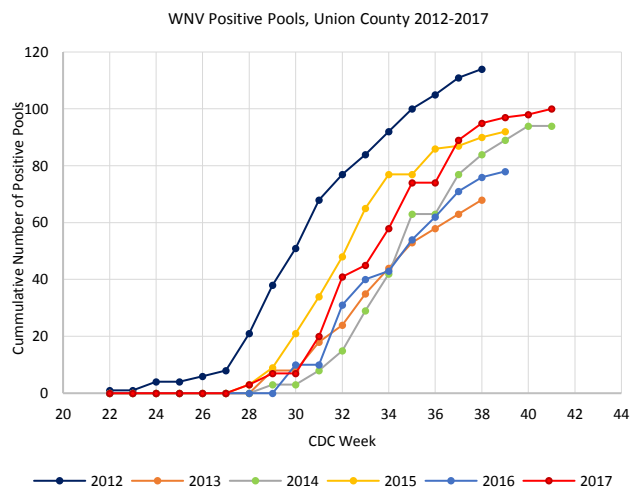
Somerset County



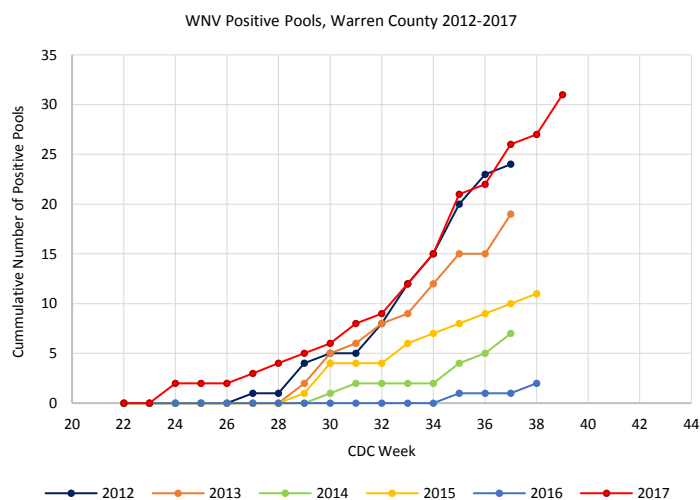
Sussex County



Union County



Warren County



- Between 2012-2017, Hunterdon, Salem and Warren Counties reported their highest number of WNV positive pools in 2017.
- Burlington, Cumberland, Gloucester, Monmouth, Somerset, Sussex and Union Counties reported the 2nd highest number of WNV positive pools in 2017.

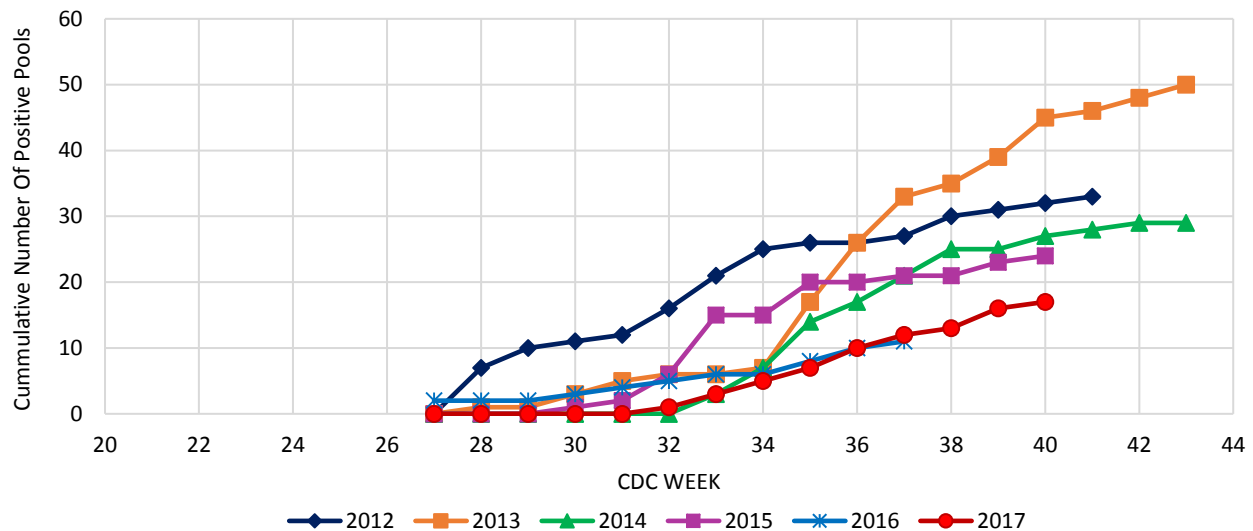
Eastern equine encephalitis virus (EEE)

- In 2017, 2,730 mosquito pools (27,255 mosquitoes) from 15 counties (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Salem, Sussex, and Warren) have been tested for EEE.
- 70% of the pools ($n = 1,922$) tested for EEE were collected in Cape May County.
- 18 mosquito pools in 8 counties (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth and Salem) tested positive for EEE in 2017 (Table 2.2). This is 64% higher than 2016 but 67% lower than the 5-year average ($n = 30$).
- There were no positive pools reported in the northern part of the state in 2017.
- All EEE positive pools were *Culiseta melanura* species.

Table 2.2 EEE Positive Mosquito Pools

County	Cumulative Total	
	2017	2016
Salem	5	1
Burlington	3	1
Cape May	3	2
Atlantic	3	1
Camden	1	2
Cumberland	1	0
Gloucester	1	1
Monmouth	1	1
Middlesex	0	3
Total	18	11

Figure 2.2 EEE Positive Mosquito Pools in NJ, 2012-2017



Other Viral Testing

In 2017, mosquito pools from 5 counties (Burlington, Cape May, Mercer, Middlesex and Sussex) were tested for other arboviruses. No positive mosquito pools were identified.

Table 2.3 Cumulative 2017 Mosquito Pool Testing (Other Viruses^a)

County	SLE		LAC		CHIKV		DENV		ZIKV	
	Pools	Positives	Pools	Positives	Pools	Positives	Pools	Positives	Pools	Positives
Burlington	23	0	16	0						
Cape May	1051	0	62	0	434	0			793	0
Mercer					13	0	13	0	13	0
Middlesex					2	0	2	0	2	0
Sussex			31	0						
Total	1074	0	109	0	449	0	15	0	808	0

^a St. Louis encephalitis virus (SLE), La Crosse encephalitis virus (LAC), Chikungunya virus (CHIKV), Dengue virus (DENV), Zika Virus (ZIKV)

Numbers in white columns represent number of pools tested in 2017

Numbers in blue shaded columns represent positive pools in 2017

3. Equine Testing

Equine testing for West Nile Virus (WNV) and Eastern equine encephalitis virus (EEE) is conducted at the New Jersey Department of Agriculture's Animal Health and Diagnostic Laboratory.

Eastern equine encephalitis virus (EEE)

In 2017, there were 6 equine cases of EEE reported in New Jersey. All cases were identified in southern counties. There were four equine cases of EEE reported in 2016; three of the four cases occurring in northern counties. Since 2013 there has been an average of 4 EEE cases per year in New Jersey, most cases occurring in southern counties.

2017 EEE cases:

- Atlantic County: 9-year-old mare vaccinated 2 years ago (onset September 17th). The horse recovered.
- Cape May County: 10 and 11-year-old unvaccinated geldings (onset October 17th, October 21st). Both horses were euthanized.

- Cumberland County: 5 and 15-year-old unvaccinated mares (onset August 23rd, September 30th). One horse died and the other was euthanized.
- Gloucester County: 13-year-old unvaccinated mare (onset November 2nd). The horse was euthanized.

West Nile Virus (WNV)

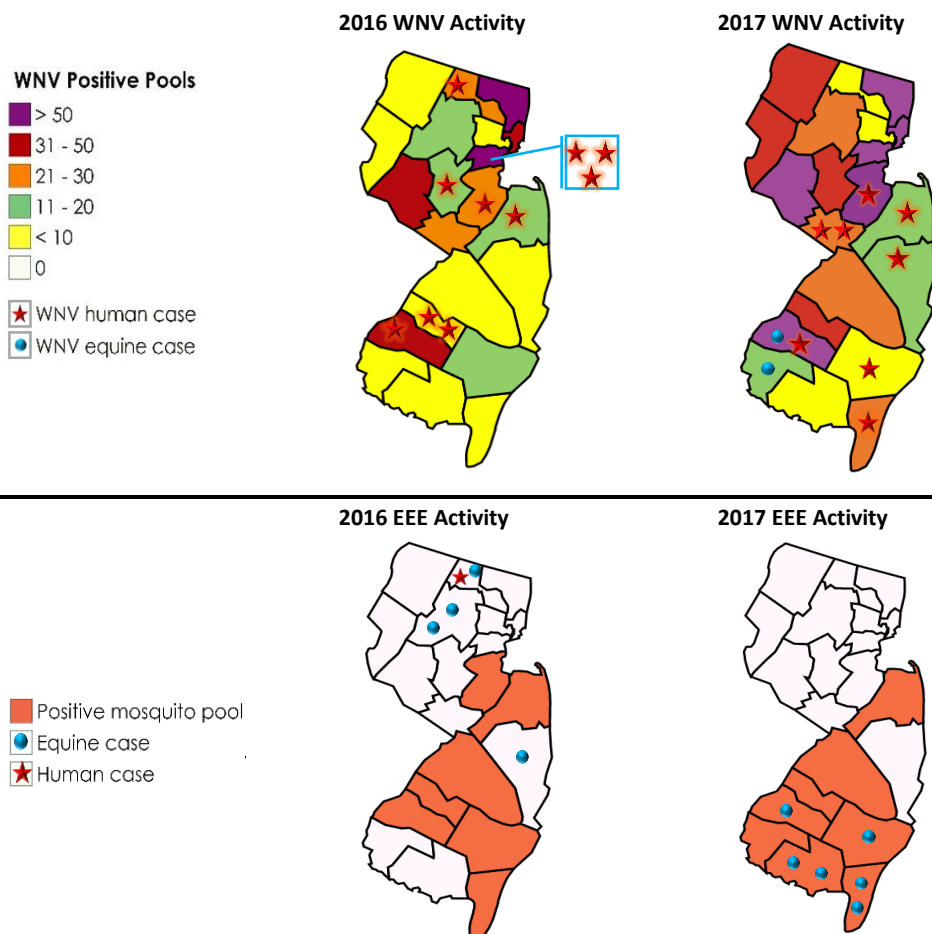
In 2017, 2 equine cases of WNV was reported in New Jersey. Both horses have recovered.

- Gloucester County: 1-year old colt (onset August 24th).
- Salem County: 10-year-old stallion (onset September 29th).

4. Avian /Other Animal Testing

Routine avian testing was discontinued in 2016 but is available upon request at the New Jersey Department of Health Public Health and Environmental Laboratories (PHEL). In 2017, 2 birds were submitted for West Nile Virus testing. Both birds tested negative.

5. Surveillance Maps*



* Data reflects mosquito test results received from PHEL, CMBSL3 and US Army Public Health as of Dec 31, 2017

For More Information

- NJDOH Communicable Disease Service: <http://nj.gov/health/cd/topics/vectorborne.shtml>
- 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/>