RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 18 July to 24 July 2010, CDC Week 29

Prepared by Lisa M. Reed, Scott Crans and Mark Robson
Center for Vector Biology

This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds, funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

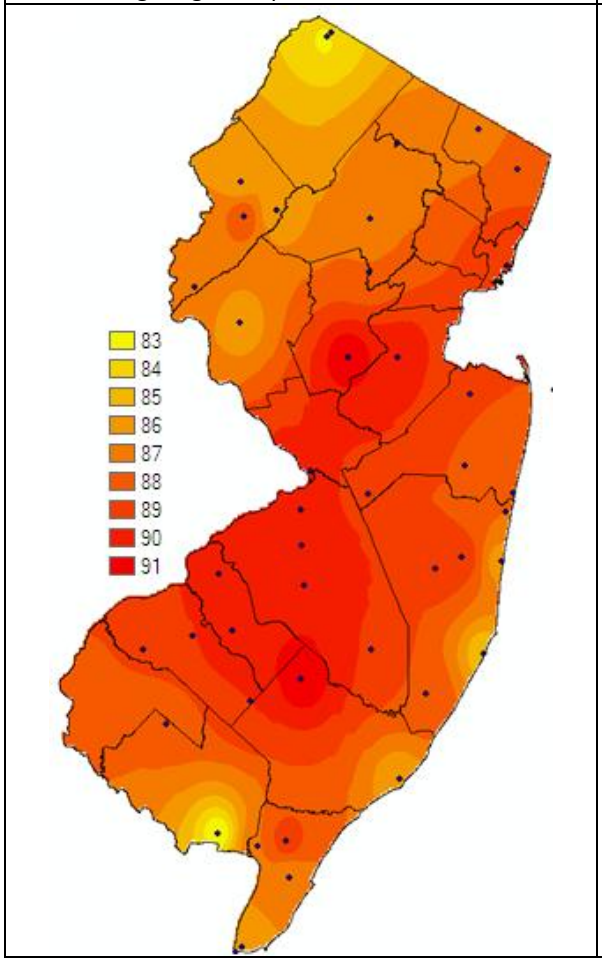
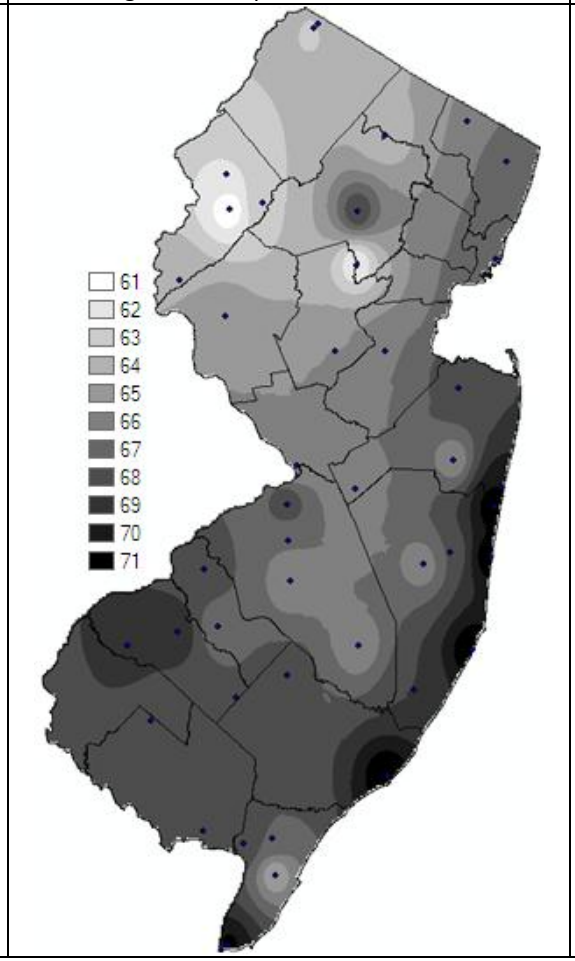
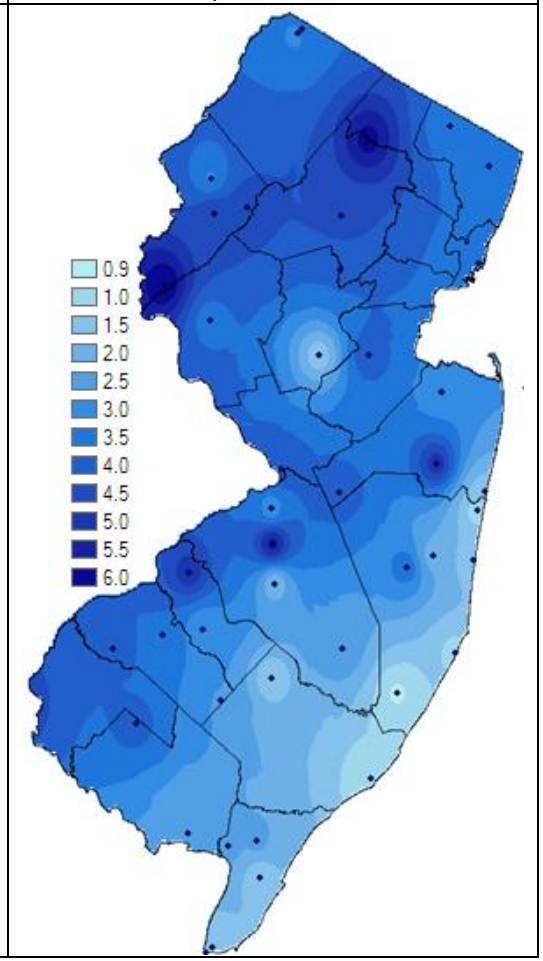
Summary table – Week 29

	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**1.40**	**4.12**	**0**	**0.67**	**3.46**	**0**	**0.10**	**0.57**	**0**	**0.00**	**0.10**	**0**
Coastal	**1.06**	**6.18**	**0**	**0.59**	**4.78**	**0**	**0.16**	**1.15**	**0**	**32.65**	**11.51**	**4**
Delaware Bayshore	**0.09**	**1.17**	**0**	**1.34**	**16.94**	**0**	**0.11**	**1.93**	**0**	**2.89**	**14.49**	**0**
Delaware River Basin	**15.82**	**15.49**	**1**	**0.00**	**3.90**	**0**	**0.14**	**0.16**	**0**	**0.00**	**<0.01**	**0**
New York Metro	**0.20**	**5.52**	**0**	**1.56**	**10.22**	**0**	**0.03**	**0.23**	**0**	**0.27**	**0.76**	**0**
North Central Rural	**0.20**	**0.72**	**0**	**0.14**	**0.73**	**0**	**0.00**	**0.03**	**0**	**0.00**	**0.00**	**0**
Northwest Rural	**0.86**	**26.81**	**0**	**0.71**	**5.51**	**0**	**0.90**	**1.27**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**1.17**	**16.11**	**0**	**0.74**	**5.72**	**0**	**0.00**	**0.38**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.23**	**2.19**	**0**	**0.57**	**2.80**	**0**	**0.27**	**1.61**	**0**	**0.03**	**0.10**	**0**
Suburban Corridor	**0.14**	**11.48**	**0**	**0.55**	**2.57**	**0**	**0.09**	**0.85**	**0**	**0.02**	**<0.01**	**3**

*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given.

State Summary: *Aedes sollicitans* populations exploded along the coast and *Aedes vexans* populations in the Delaware River Basin are beginning to respond as well to recent rainfall. *Ae. sollicitans* were also higher in the Suburban Corridor, but these population levels are low in comparison to Coastal or Delaware Bayshore population abundances.

Climate Factors

Average High Temperatures 1 Jul to 28 Jul	Average Low Temperatures 1 Jul to 28 Jul	Total Precipitation 1 Jul to 28 Jul
		

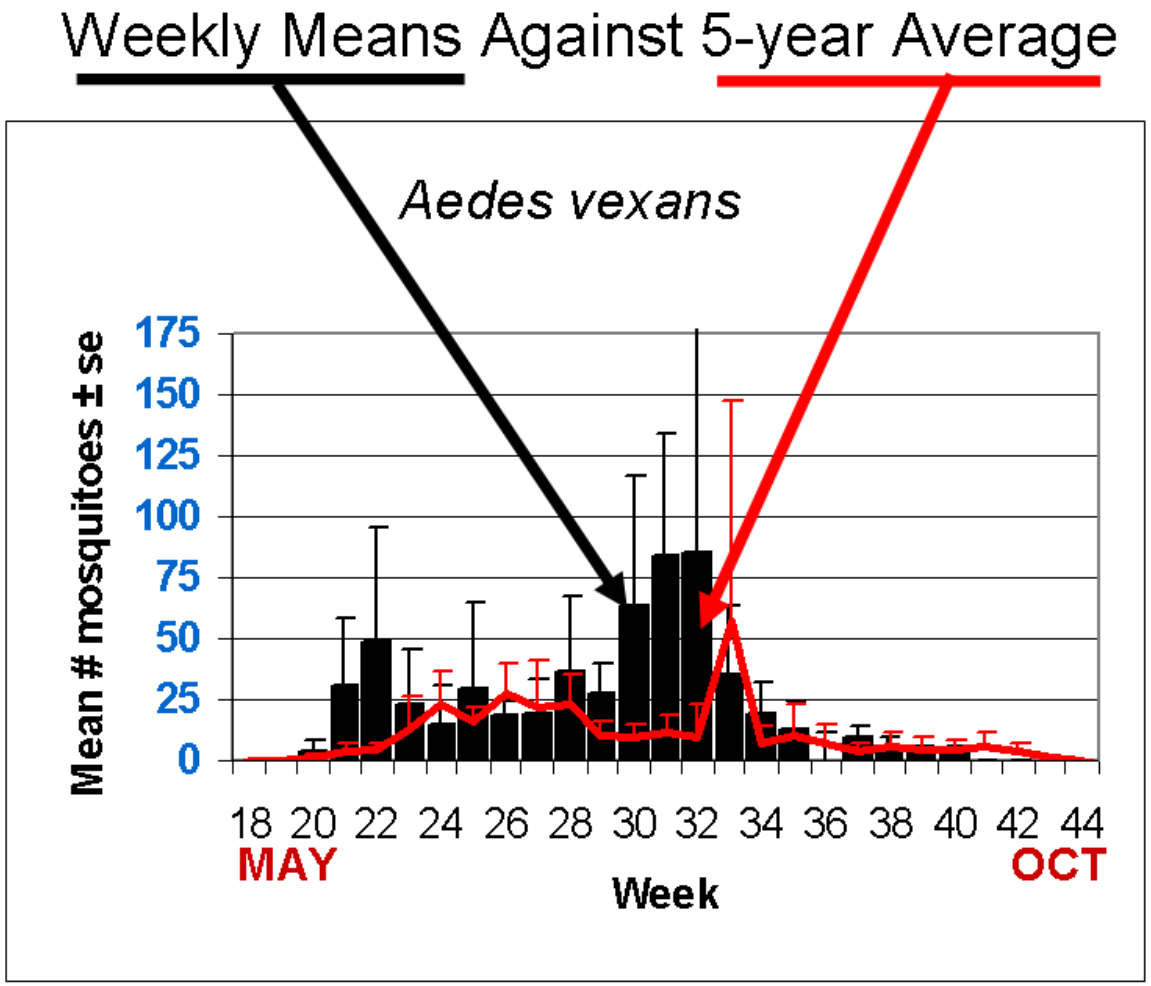
The three figures show the interpolation of average maximum and minimum temperature and total precipitation from July 1 to July 28, 2010 in New Jersey. Data points are from 40 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 9.2.

Average high and low temperatures changed little from last week, but all weather stations received rainfall. As with last week, coastal and higher elevation areas are cooler during the day, but the coastal areas retain heat during the night. Less rain fell to the southern coastal areas.

NJ Weather & Climate NETWORK

ONJSC at Rutgers University

The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Atlantic, Bergen, Camden, Cape May, Essex, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset, Sussex and Warren counties. Note: Previous week's data are from Atlantic, Bergen, Camden, Cape May, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Somerset, Sussex, Union and Warren counties.



Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

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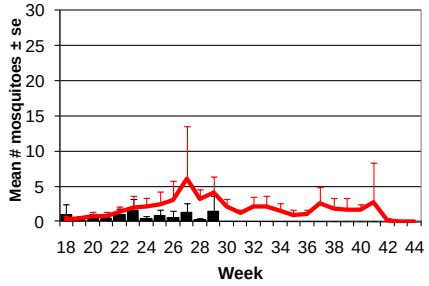
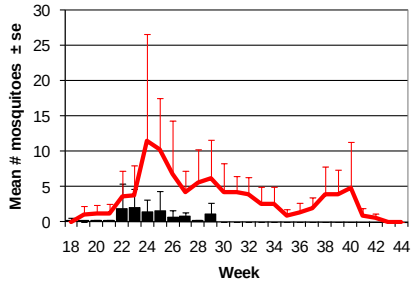
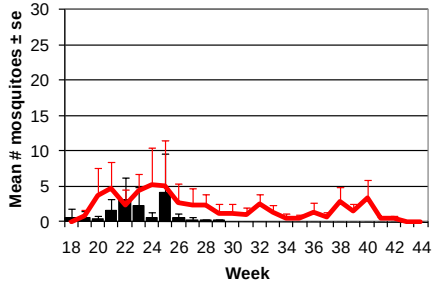
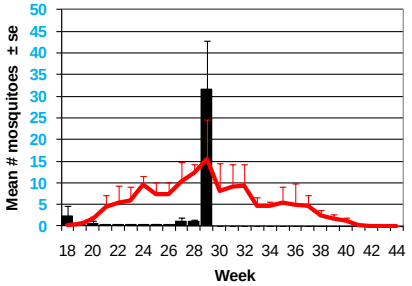
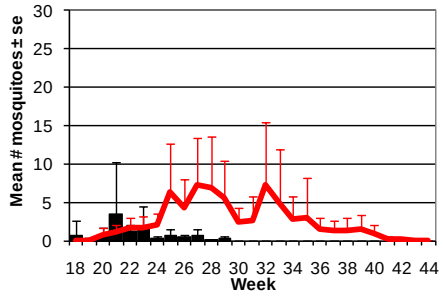
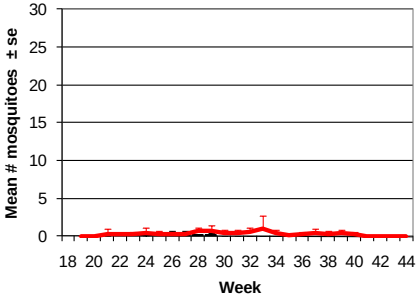
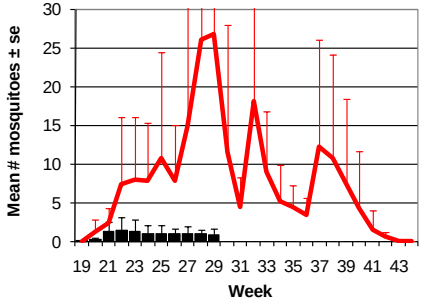
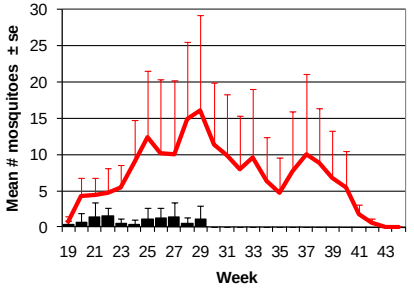
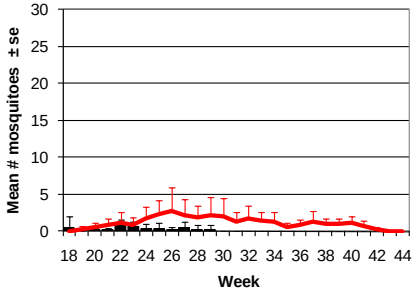
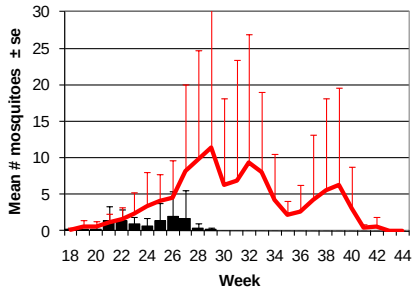
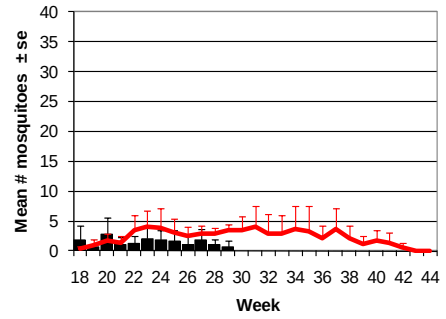
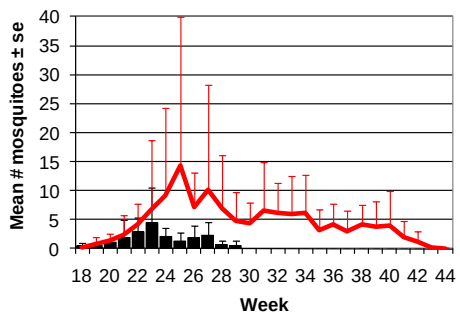
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations began to creep up in several regions, but exploded in the Delaware River Basin. Dredge spoils in that region began to fill with rainfall providing habitat for this fresh floodwater species. Rainfall is anticipated for the state over the next several days, adding potential habitat that can result in higher *Ae. vexans* populations. http://kamala.cod.edu/nj/	

Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

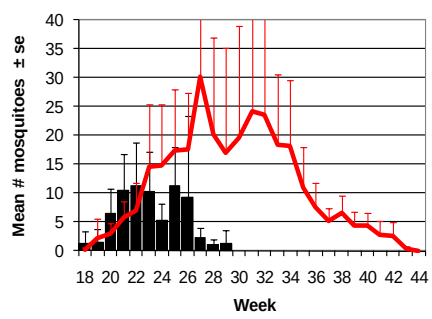
Agricultural



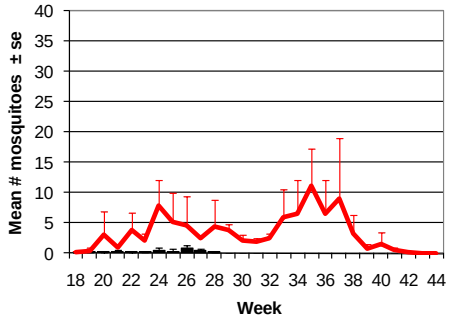
Coastal



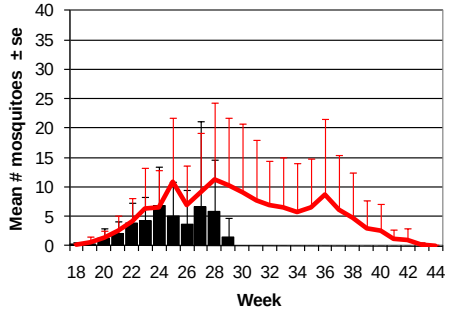
Delaware Bayshore



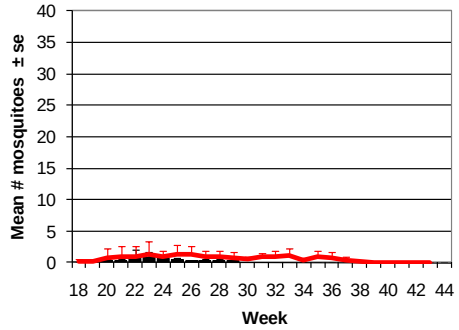
Delaware River Basin



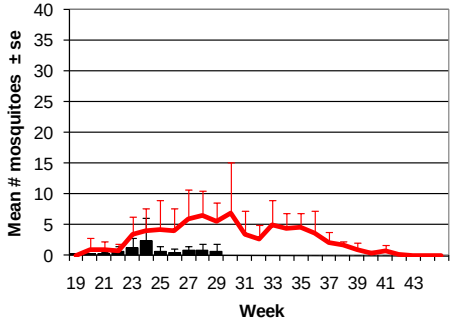
New York Metro



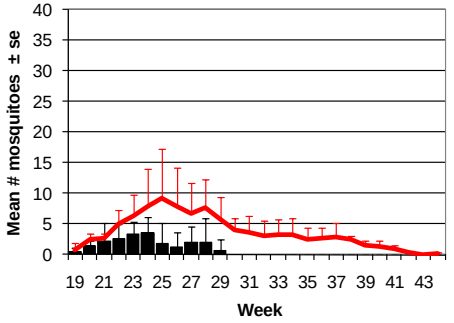
North Central Rural



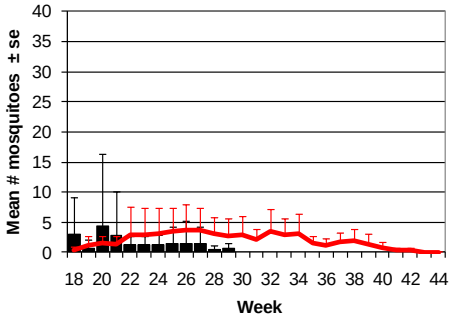
Northwestern Rural



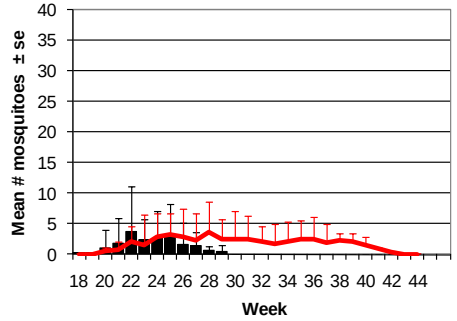
Philadelphia Metro



Pinelands



Suburban Corridor

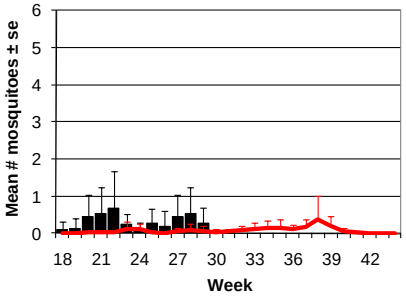
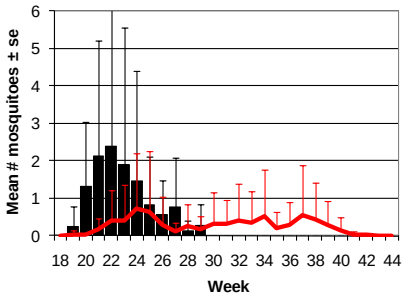
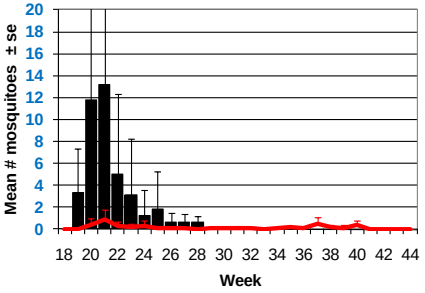
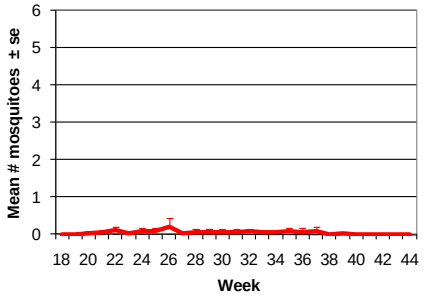
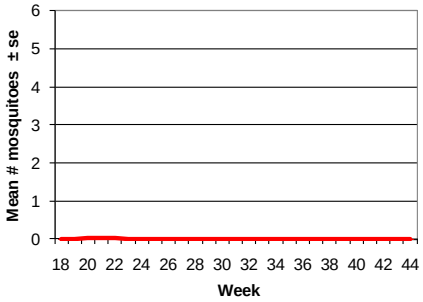
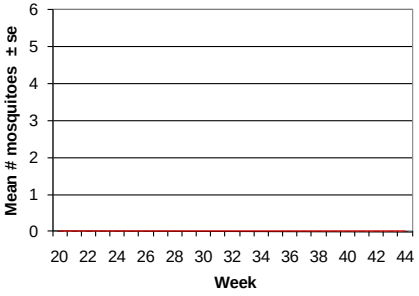
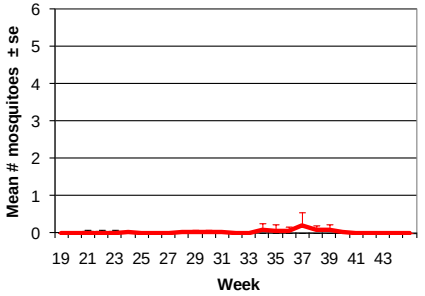
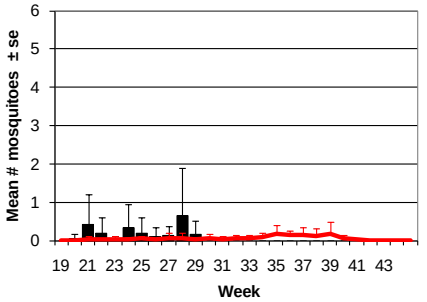
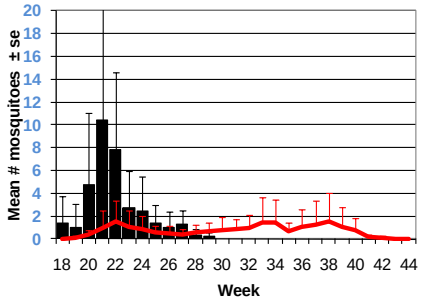
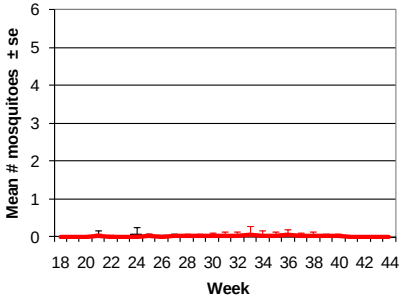


Comments

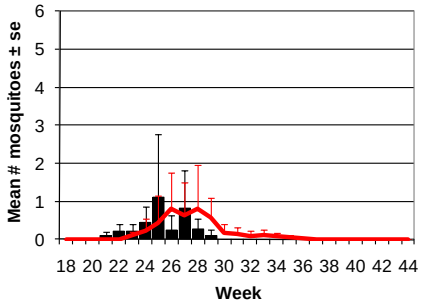
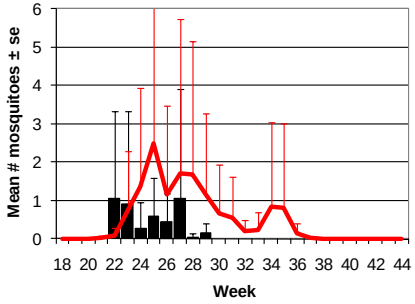
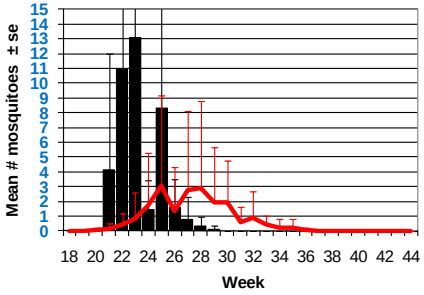
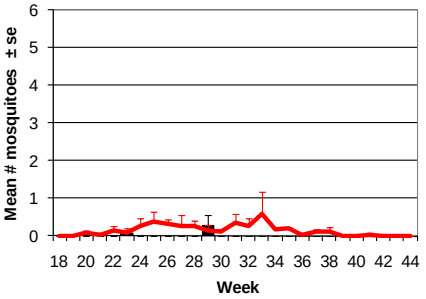
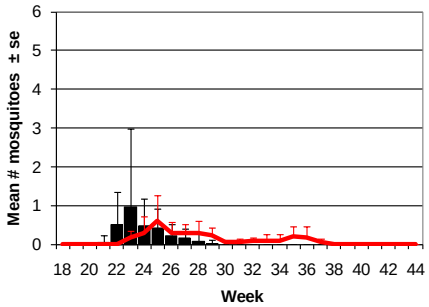
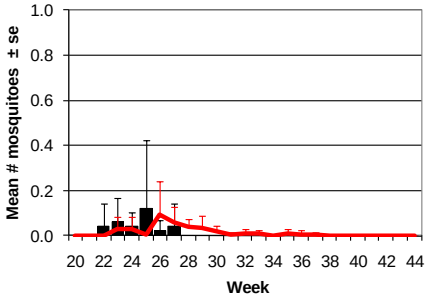
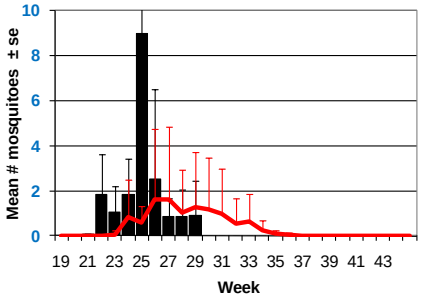
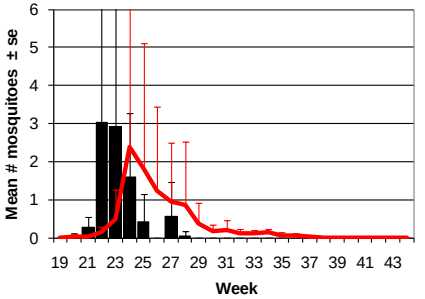
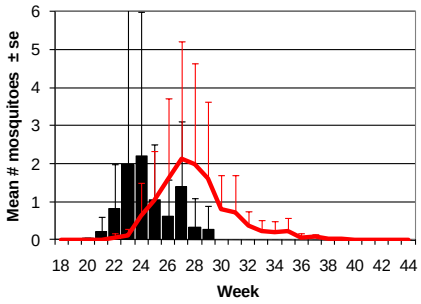
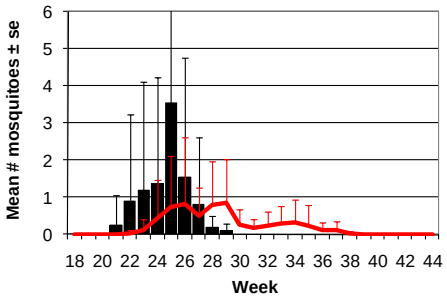
Culex Mix is represented by three species of *Culex* mosquitoes: *Cx. pipiens, Cx. restuans* and *Cx. salinarius*. These mosquitoes are usually grouped together as there is considerable difficulty in separating them to species easily after travelling through the grind of the light trap, often in the company of protesting moths and beetles.

These populations of permanent water species continue to remain at lower population levels despite the upturn of floodwater species. Lower numbers, however, continue to produce WNV positive pools in the Vector Surveillance program and thus warrant close monitoring.

Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

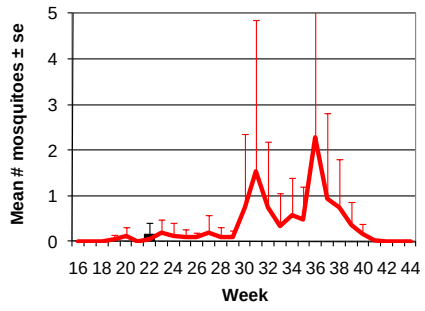
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, continue to remain around historic trends in areas that they are normally found. Eastern equine encephalitis activity has begun several days earlier than last year, a markedly active year. Populations should begin to increase in the next few weeks if they are following the early season highs displayed at the beginning of the program.	

Coquillettidia perturbans – Miscellaneous Group
Monotypic (*Coq. perturbans* Type)

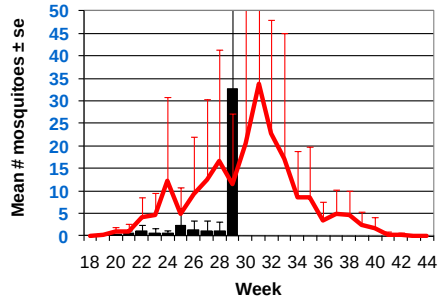
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations continue to decrease throughout the state. If numbers begin to fall, this page will stop, unless late season activity begins again.	

Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

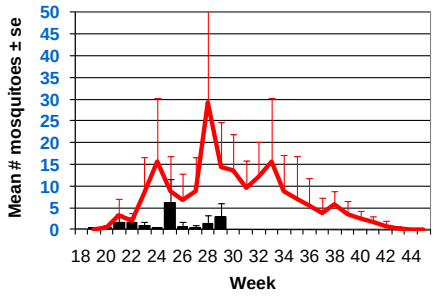
Agricultural



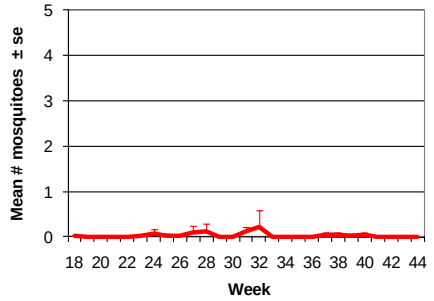
Coastal



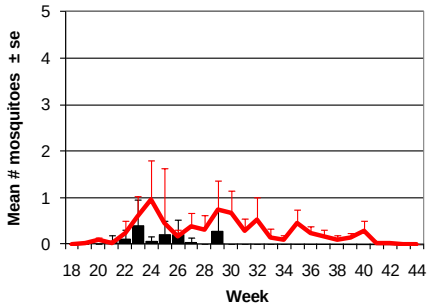
Delaware Bayshore



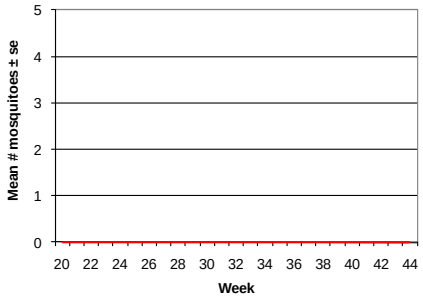
Delaware River Basin



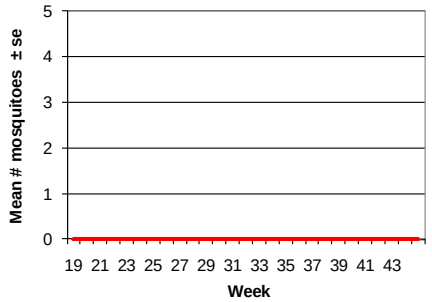
New York Metro



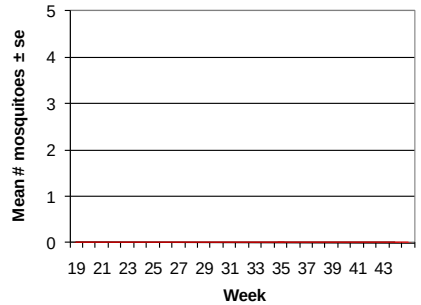
North Central Rural



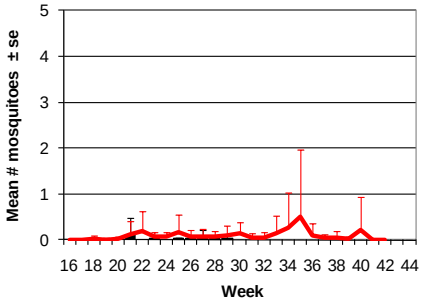
Northwestern Rural



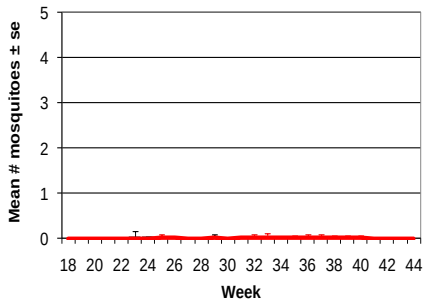
Philadelphia Metro



Pinelands

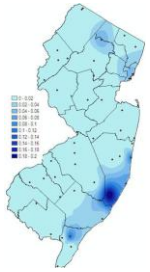


Suburban Corridor

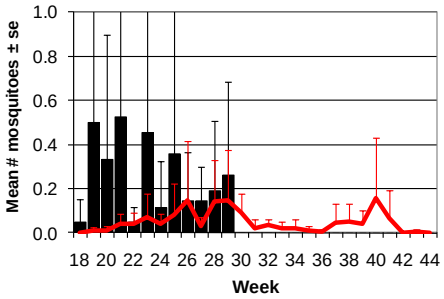
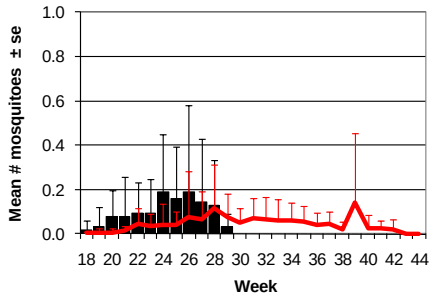
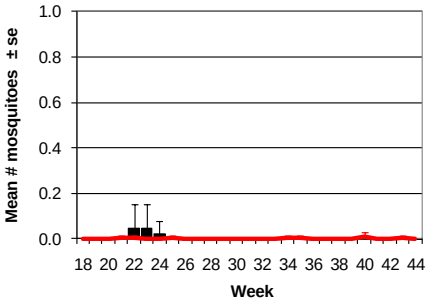
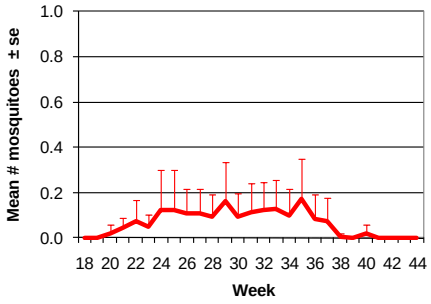
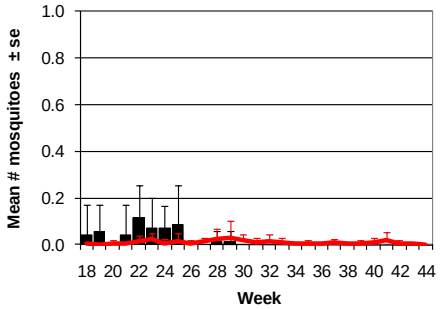
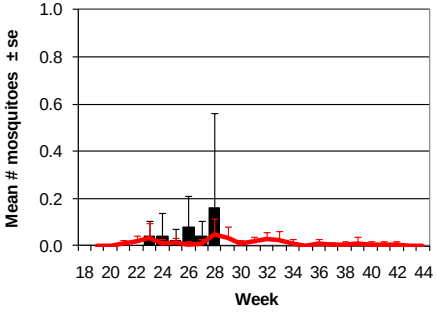
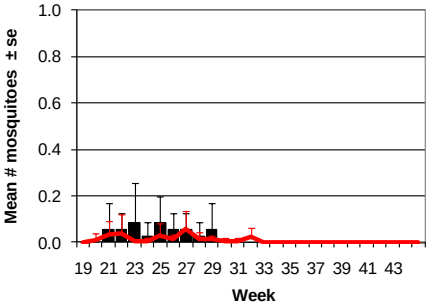
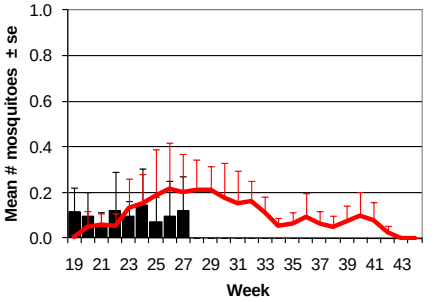
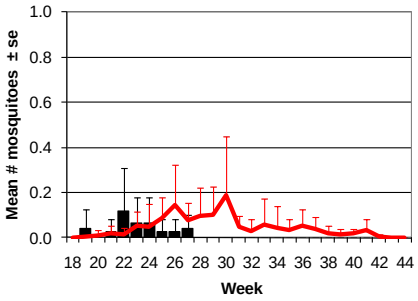
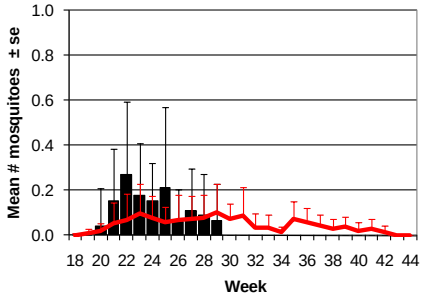


Comments

Like their fresh floodwater counterpart, *Aedes sollicitans* population numbers climbed significantly higher than historical values in the Coastal region. Rainfall (see map from week 26, at right) helped flood upland salt marsh, illustrating that tidal action is not the only way to produce a salt marsh mosquito. Increases in populations were also observed in the Delaware Bayshore and New York Metro regions.



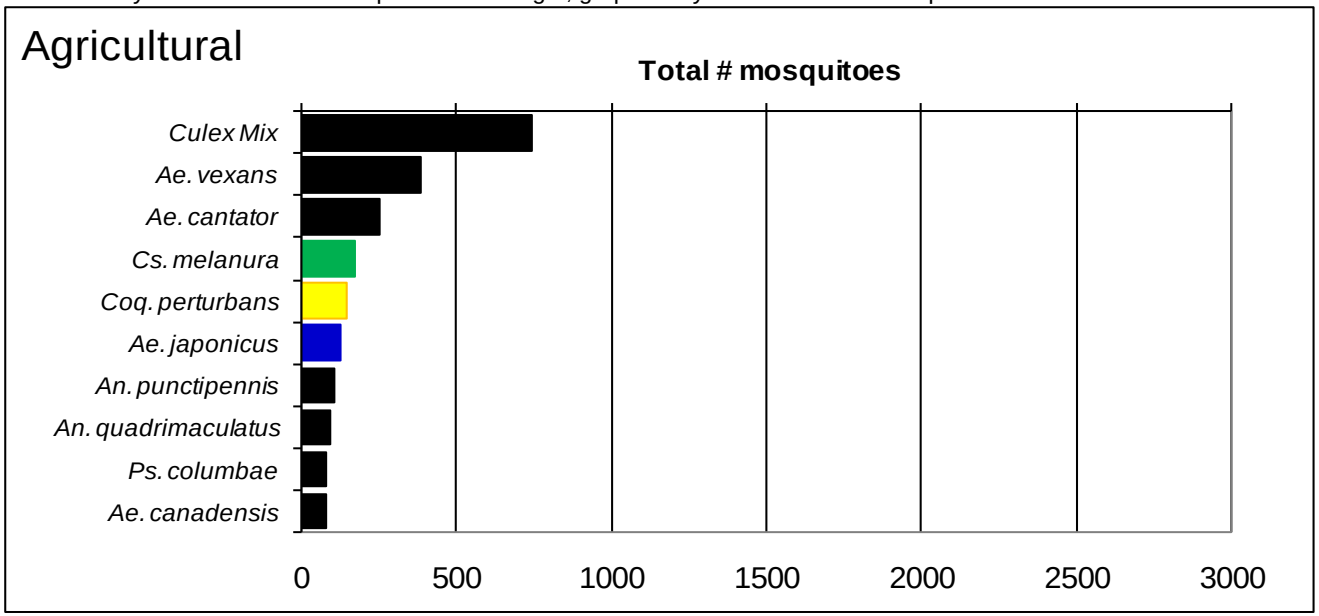
Aedes japonicus – Container Species
Multivoltine Aedine (*Ae. triseriatus* Type)

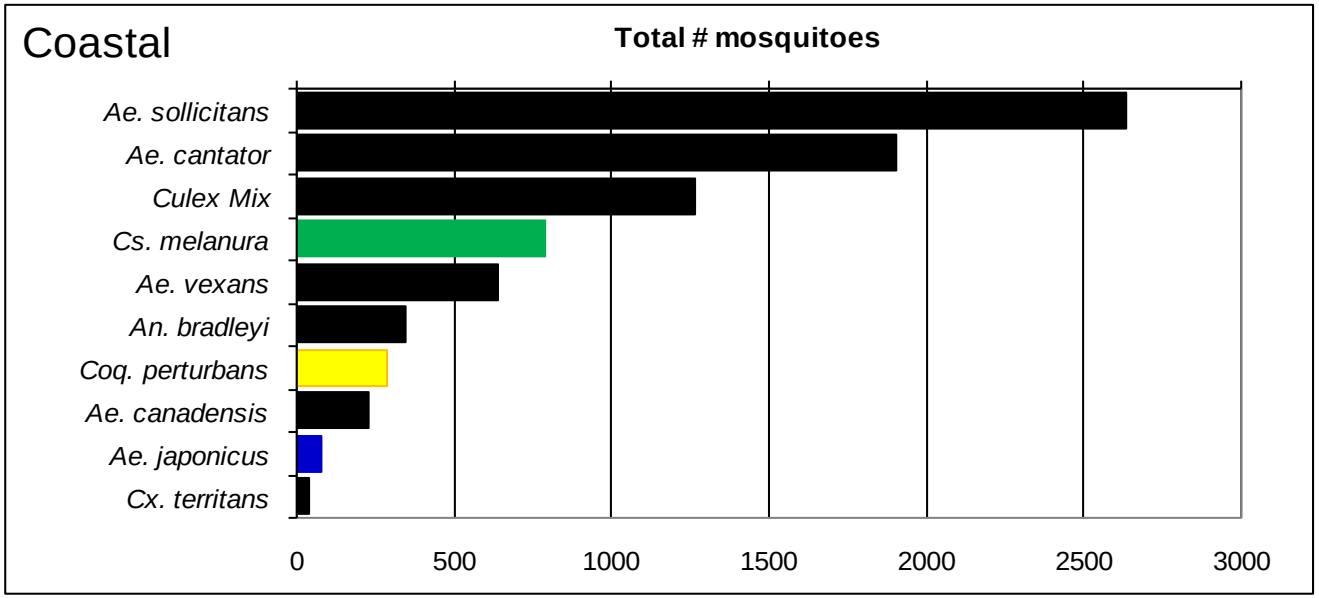
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes japonicus*, a hardy cold-tolerant species, has shown higher than historical numbers for several regions over several weeks. Populations continue to be around or below historical trends.	

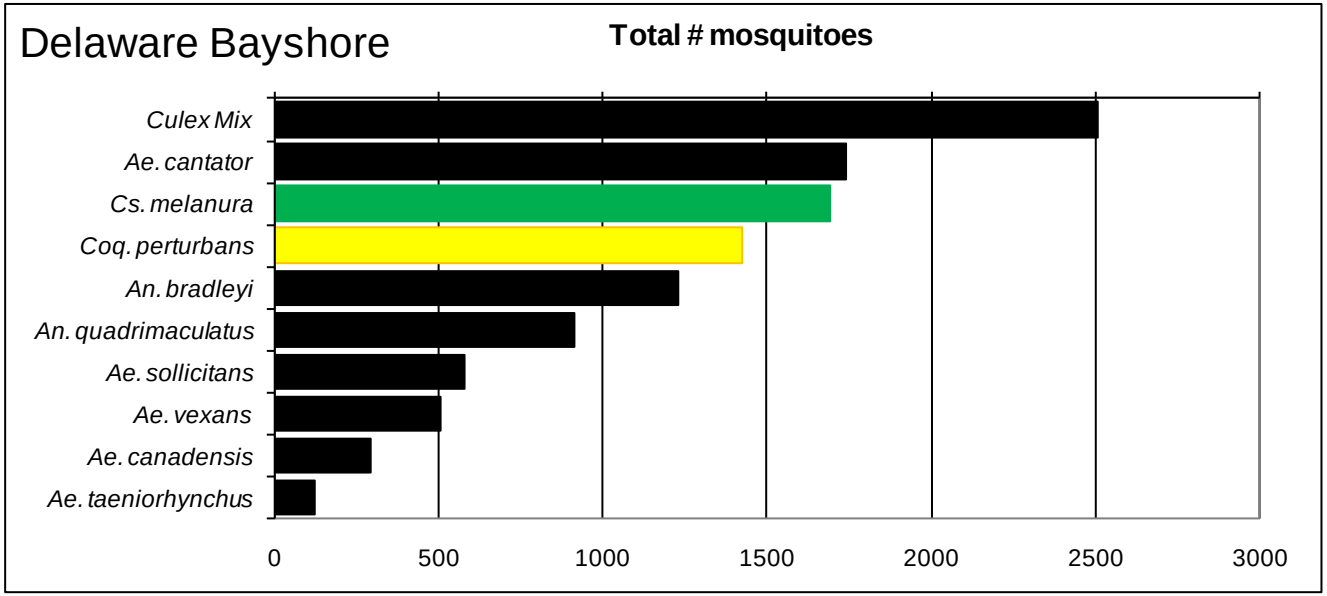
WNV *EEE*

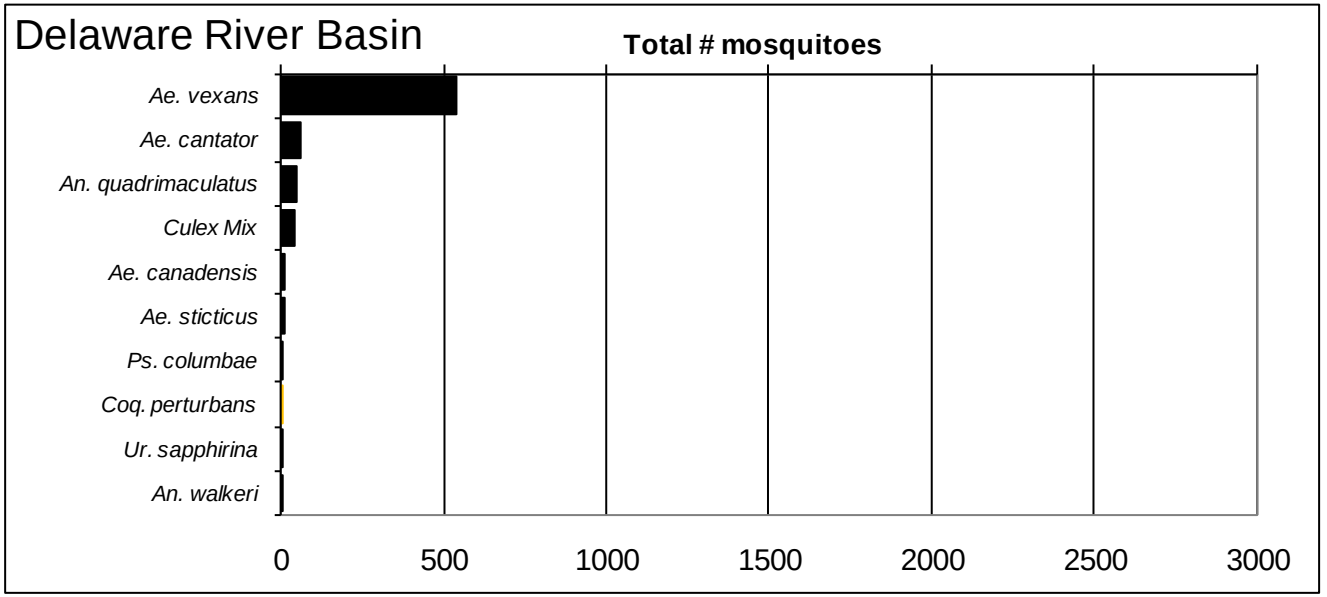
Top Ten Cumulative Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

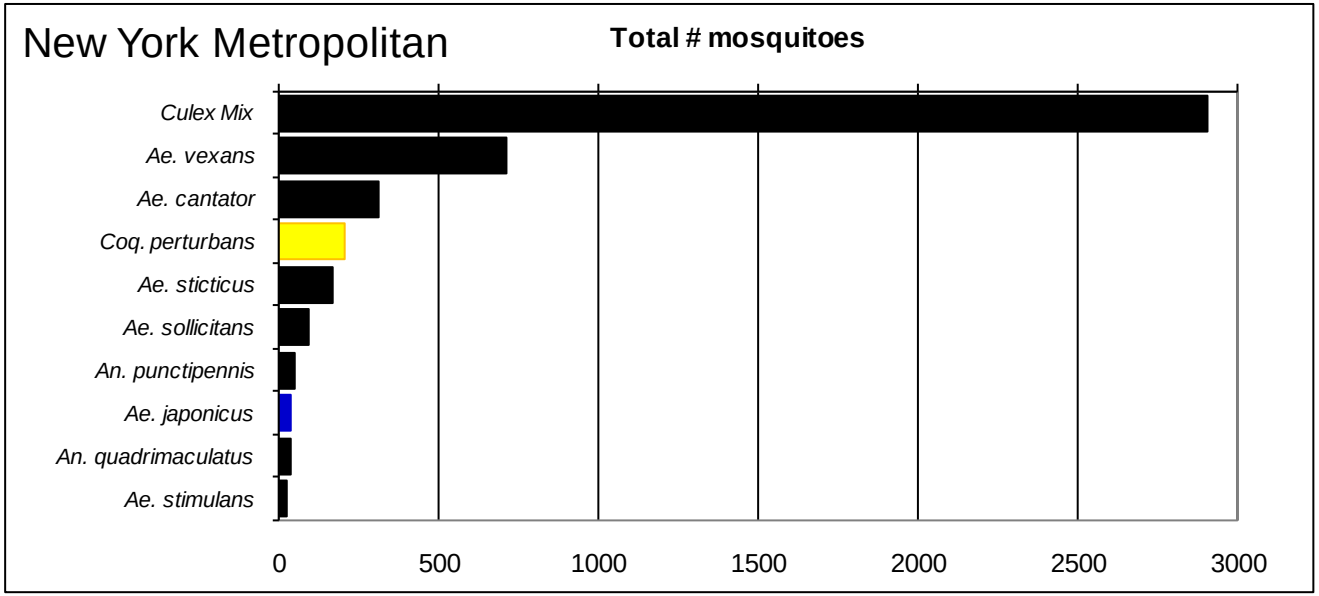
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

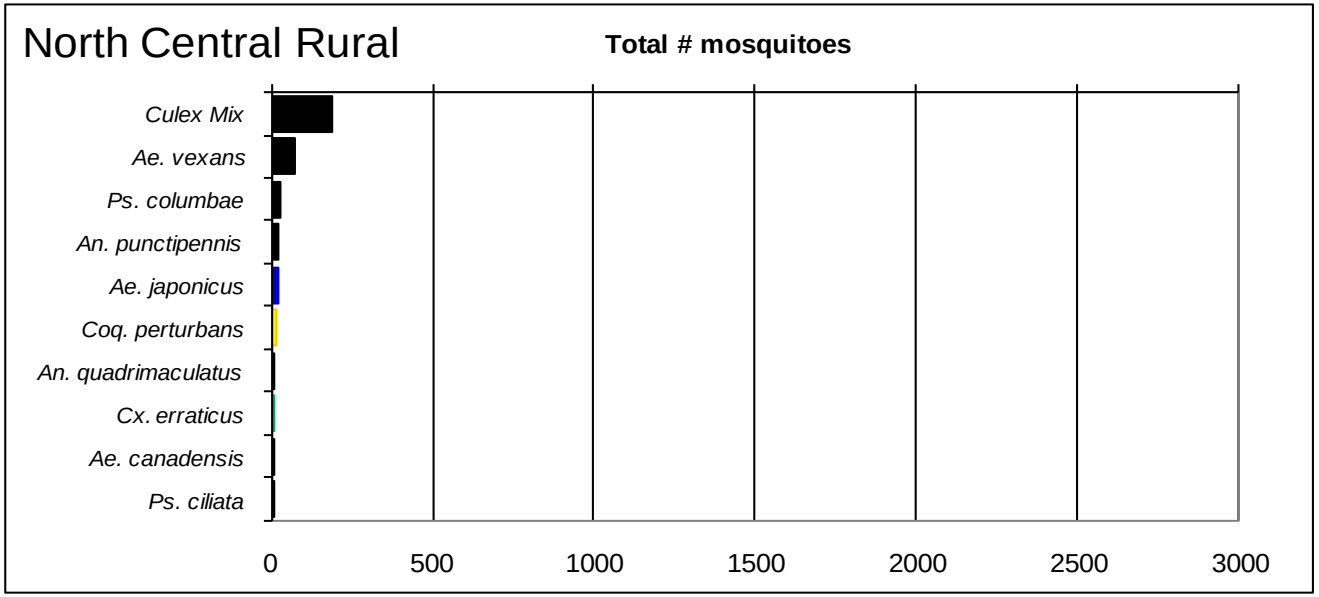


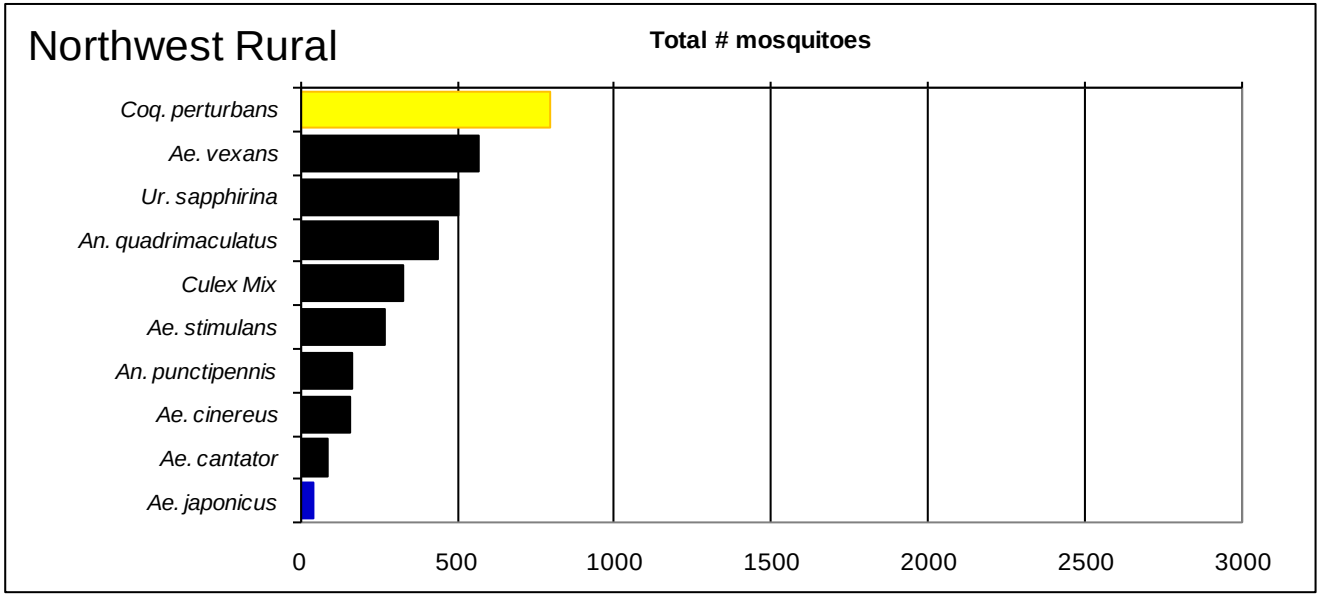


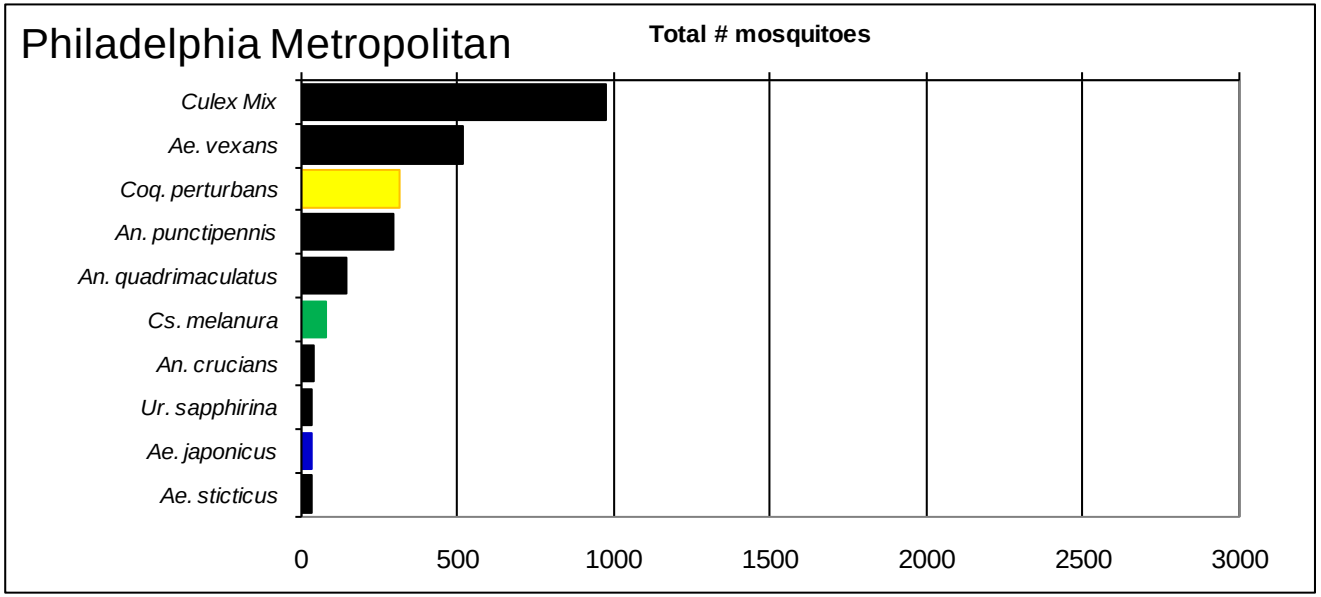

Delaware Bayshore
Total # mosquitoes
Culex Mix
Ae. cantator
Cs. melanura
Coq. perturbans
An. bradleyi
An. quadrimaculatus
Ae. sollicitans
Ae. vexans
Ae. canadensis
Ae. taeniorhynchus
0
500
1000
1500
2000
2500
3000

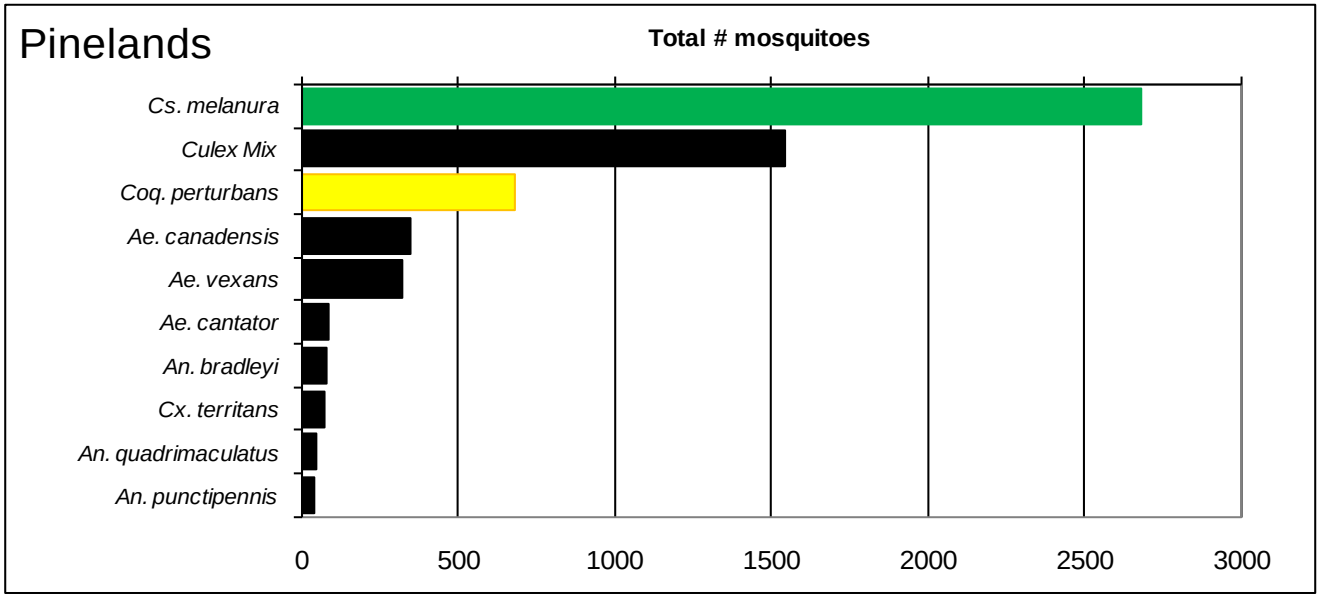

Delaware River Basin
Total # mosquitoes
Ae. vexans
Ae. cantator
An. quadrimaculatus
Culex Mix
Ae. canadensis
Ae. sticticus
Ps. columbae
Coq. perturbans
Ur. sapphirina
An. walkeri
0
500
1000
1500
2000
2500
3000

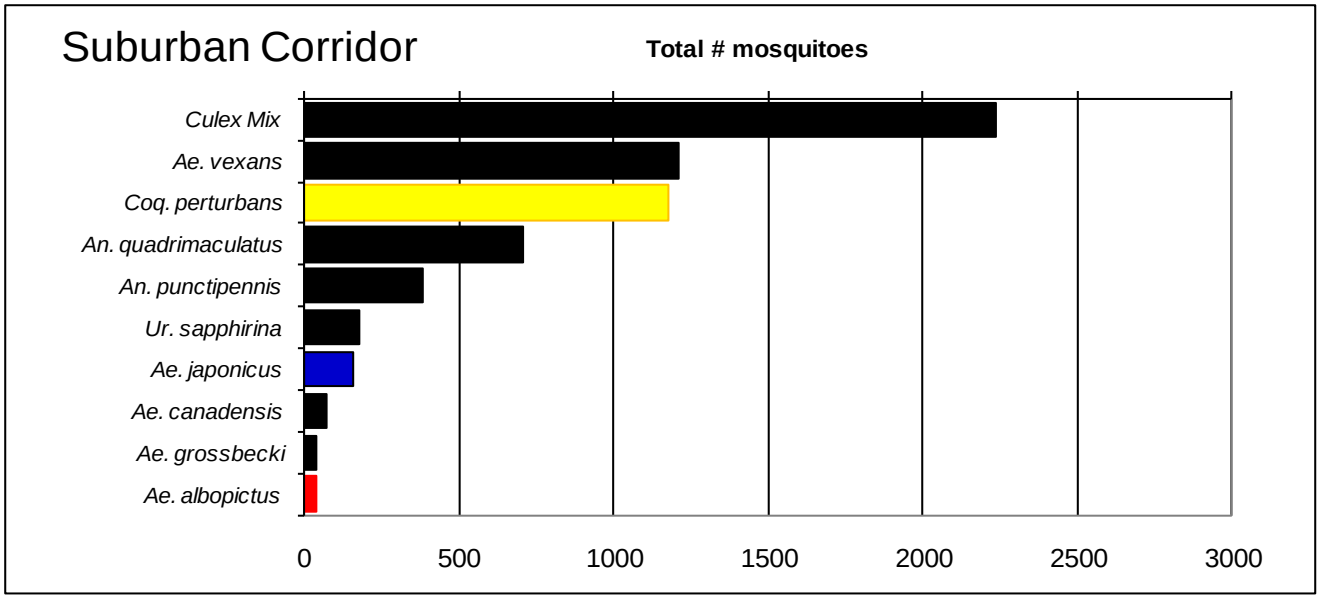

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sticticus
Ae. sollicitans
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Ae. stimulans
0
500
1000
1500
2000
2500
3000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbae
An. punctipennis
Ae. japonicus
Coq. perturbans
An. quadrimaculatus
Cx. erraticus
Ae. canadensis
Ps. ciliata
0
500
1000
1500
2000
2500
3000


Northwest Rural
Total # mosquitoes
Coq. perturbans
Ae. vexans
Ur. sapphirina
An. quadrimaculatus
Culex Mix
Ae. stimulans
An. punctipennis
Ae. cinereus
Ae. cantator
Ae. japonicus
0
500
1000
1500
2000
2500
3000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. punctipennis
An. quadrimaculatus
Cs. melanura
An. crucians
Ur. sapphirina
Ae. japonicus
Ae. sticticus
0
500
1000
1500
2000
2500
3000


Pinelands
Total # mosquitoes
Cs. melanura
Culex Mix
Coq. perturbans
Ae. canadensis
Ae. vexans
Ae. cantator
An. bradleyi
Cx. territans
An. quadrimaculatus
An. punctipennis
0
500
1000
1500
2000
2500
3000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. quadrimaculatus
An. punctipennis
Ur. sapphirina
Ae. japonicus
Ae. canadensis
Ae. grossbecki
Ae. albopictus
0
500
1000
1500
2000
2500
3000