NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 21 August to 27 August 2011, CDC Week 34

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Center for Vector Biology

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funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

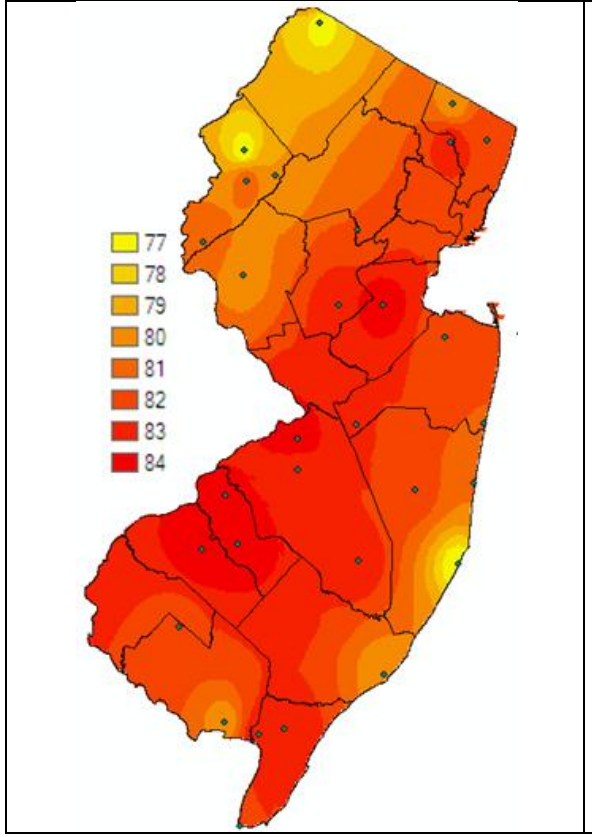
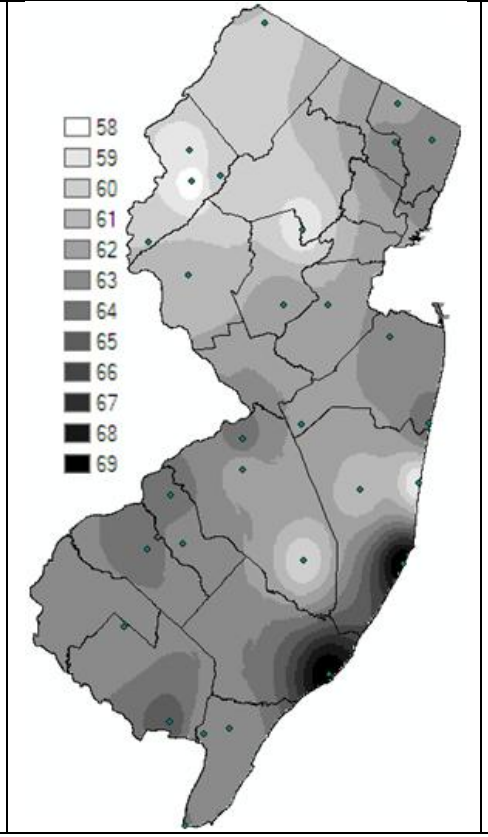
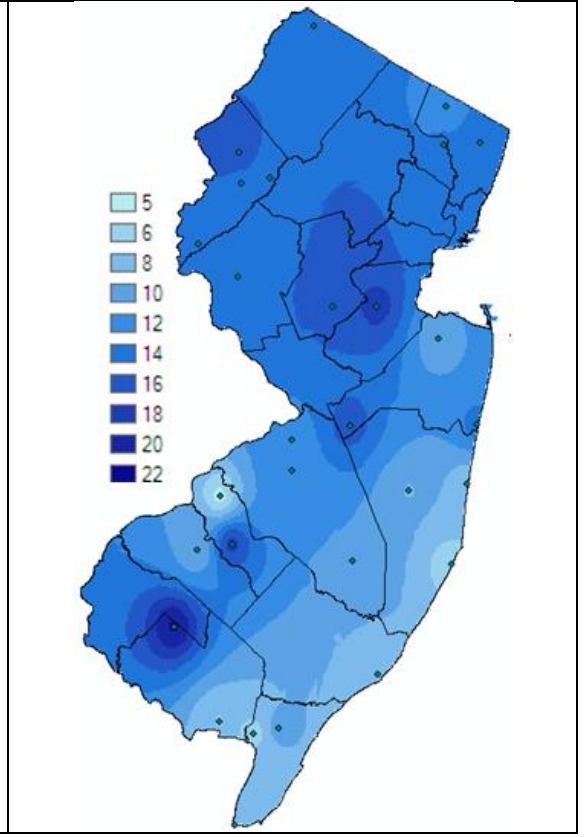
Summary Table – Week 34

Region	*Aedes vexans*			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.83	1.36	0	1.07	3.76	0	0.17	0.21	0	0.00	0.45	0
Coastal	1.21	2.54	0	4.67	5.21	0	0.00	0.09	0	5.57	10.34	0
Delaware Bayshore	1.37	1.42	0	6.31	13.90	0	0.00	0.23	0	1.11	4.84	0
Delaware River Basin	3.36	3.99	0	1.79	2.77	0	0.00	0.21	0	0.00	0.01	0
New York Metro	3.61	2.68	1	3.09	6.18	0	0.04	0.10	0	0.14	0.09	2
North Central Rural	0.06	0.36	0	0.39	0.49	0	0.00	0.00	0	0.00	0.00	0
Northwest Rural	22.57	5.53	4	5.86	4.33	1	0.10	0.32	0	0.00	0.00	0
Philadelphia Metro	6.14	4.74	1	2.46	2.98	0	0.00	0.09	0	0.00	0.00	0
Pinelands	1.04	1.21	0	2.43	3.24	0	0.16	0.24	0	0.03	0.11	0
Suburban Corridor	1.47	4.15	0	0.90	2.14	0	0.05	0.46	0	0.00	0.01	0

*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: Both *Aedes vexans* and *Culex* Mix species were higher than historical levels in three regions (*Ae. vexans* in both metropolitan regions and in Northwest Rural; *Culex* in the Northwest Rural). *Aedes sollicitans* was also higher in the New York Metro region, but at low values. This situation is likely to change, particularly for the floodwater species (*Ae. vexans* and *Ae. sollicitans*) given the abundance of water that Hurricane Irene dropped on New Jersey.

Climate Factors

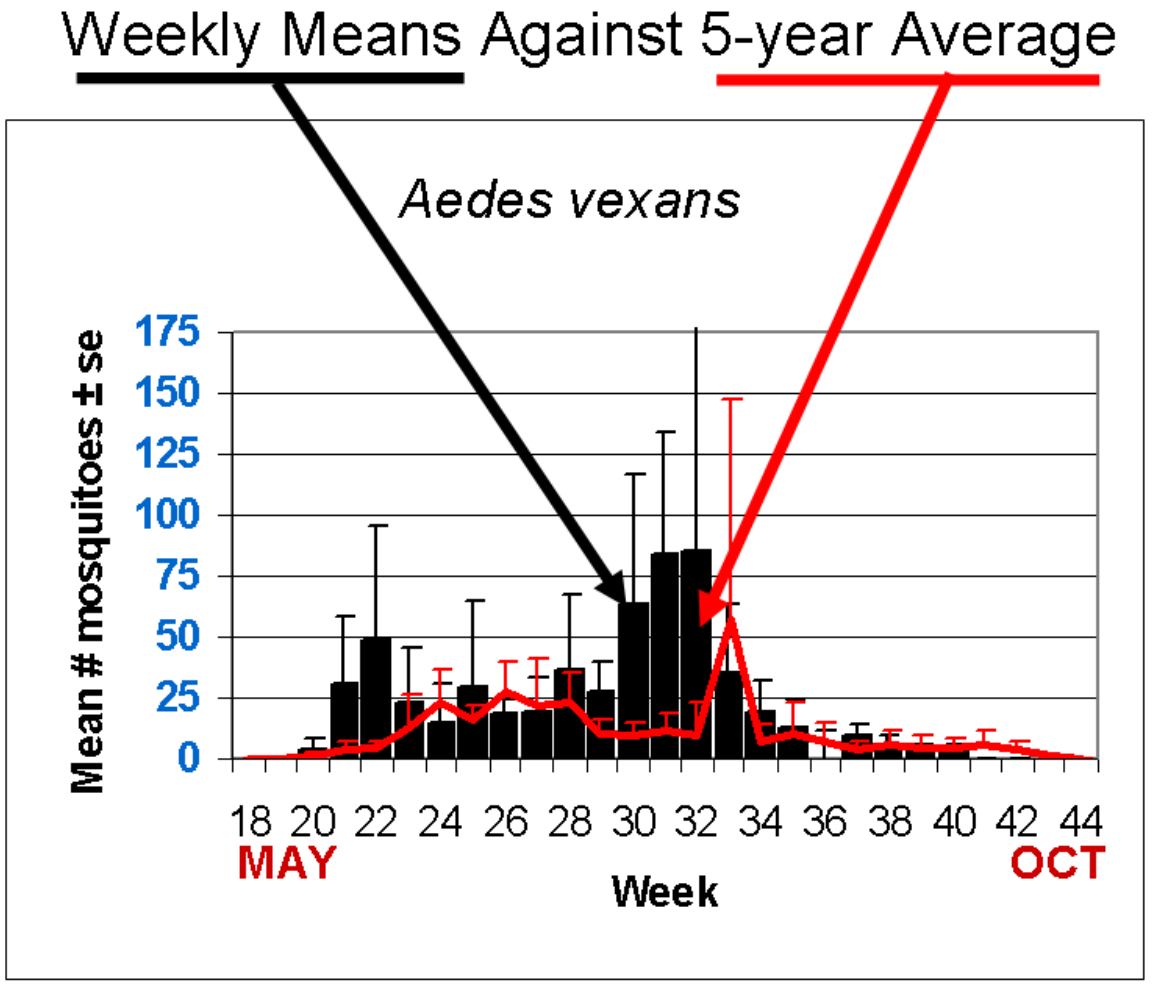
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum and minimum temperature and total precipitation for the month of August, 2011 in New Jersey. Data points are from about 34 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10. Several stations were eliminated from the maps due to going offline (recognizably incomplete data).

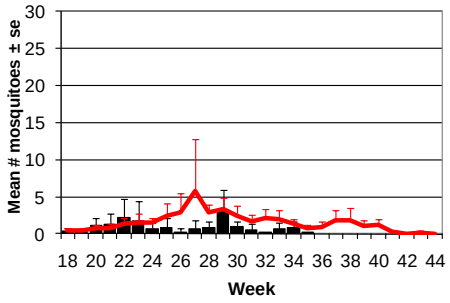
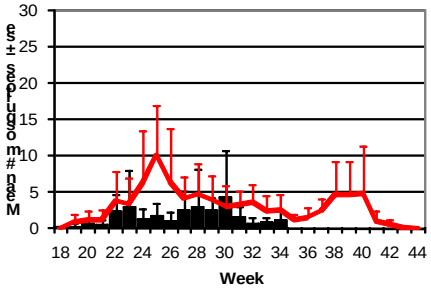
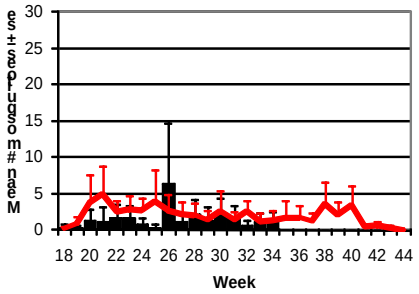
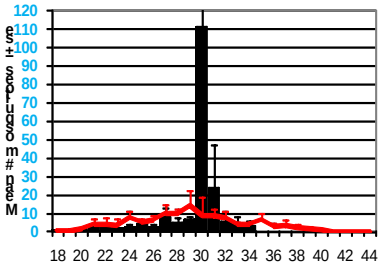
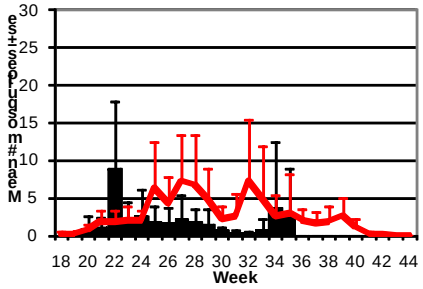
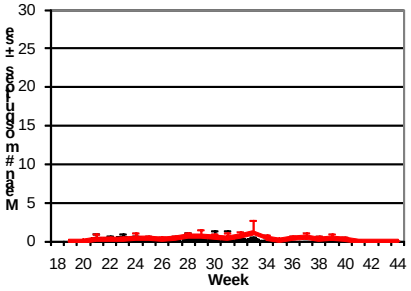
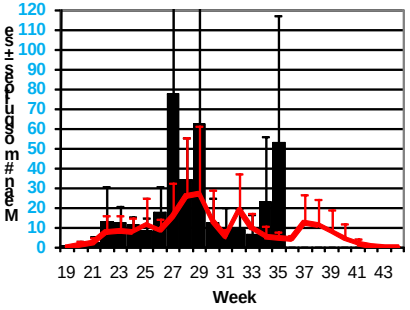
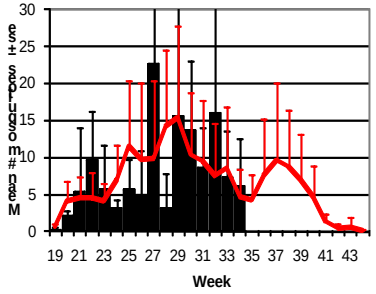
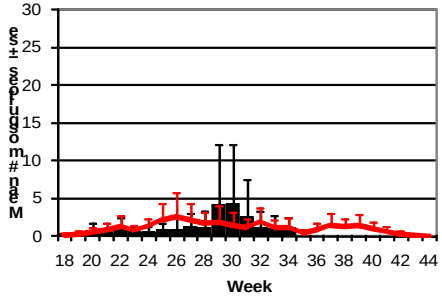
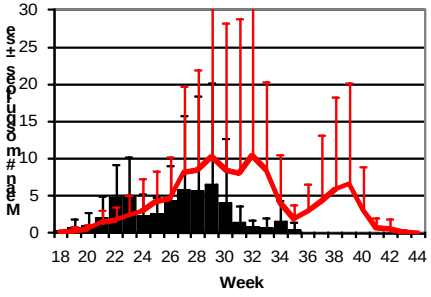
Again, average high and low temperatures were only slightly different from the previous report. Precipitation increased tremendously as Hurricane Irene passed through the state on the 28th of August (note scale tops at 22 inches). Average increases in rainfall were 6.21 inches, with Stewartville and New Brunswick receiving more than 10 inches. Previous to the arrival of Hurricane Irene, the state also experienced significant rainfall so the effects of the past weeks will likely be observed for floodwater species over the next few weeks.

NJ Weather & Climate NETWORK ONJSC at Rutgers University

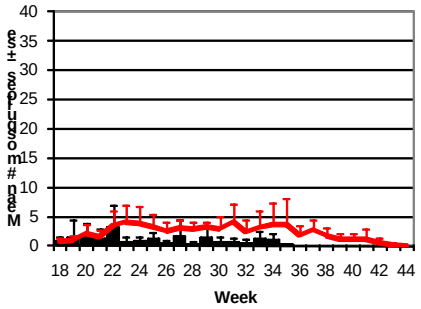
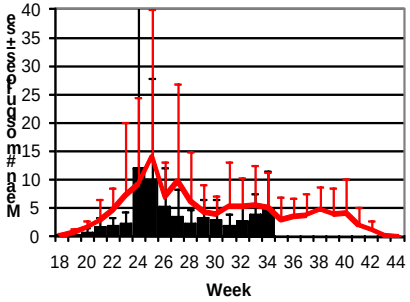
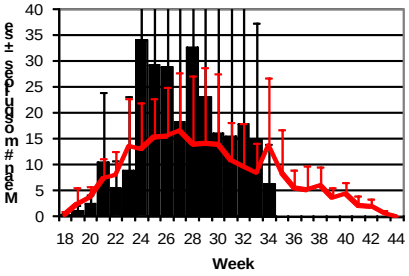
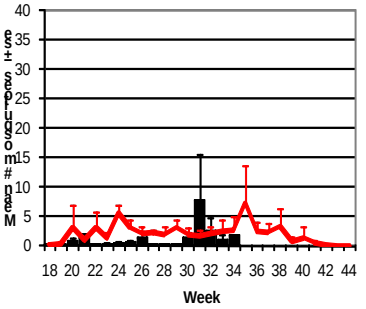
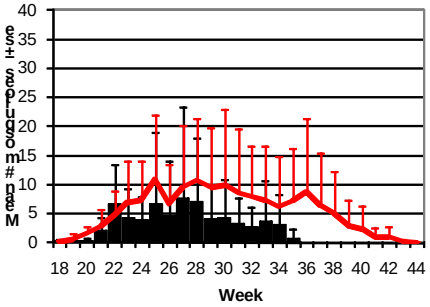
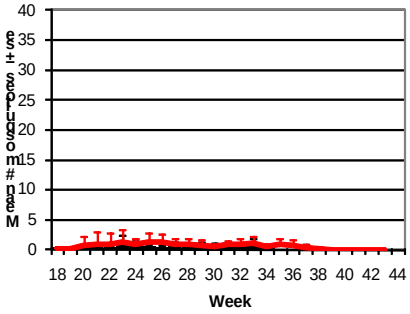
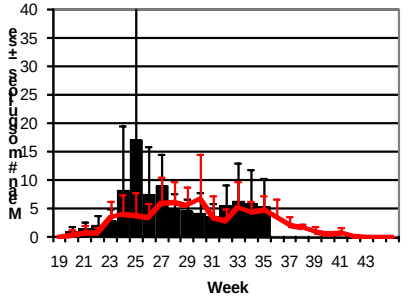
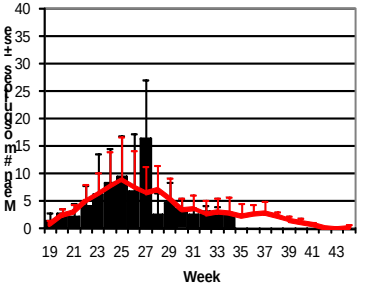
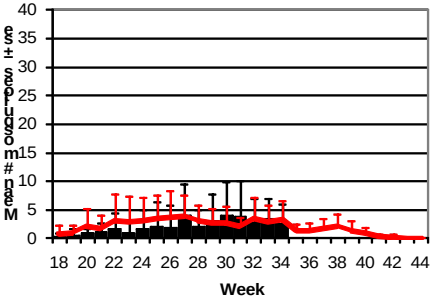
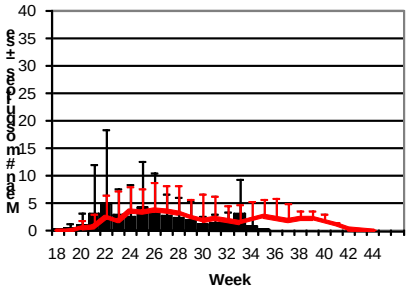
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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 these weeks are from Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Sussex, Union and Warren counties. Last week included Atlantic, Bergen, Burlington, Camden, Cape May, Essex, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Salem, Sussex, Union and Warren counties. Note: County data is sent in at a variety of times during the week.



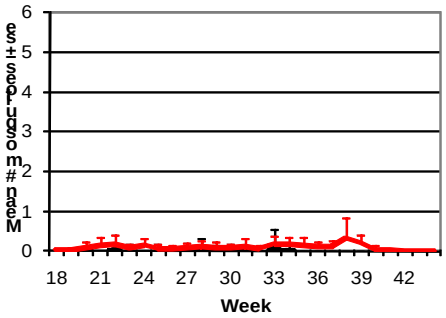
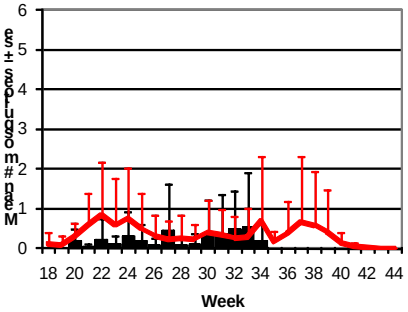
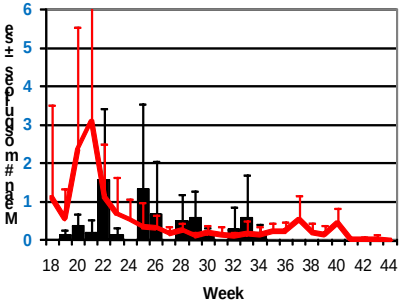
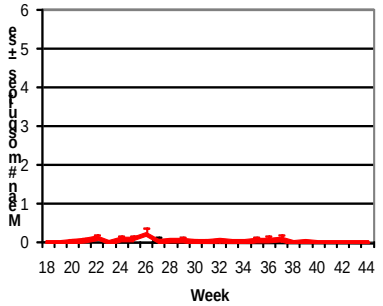
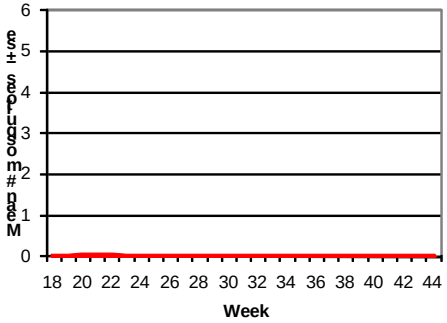
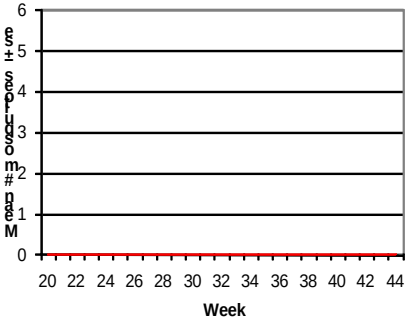
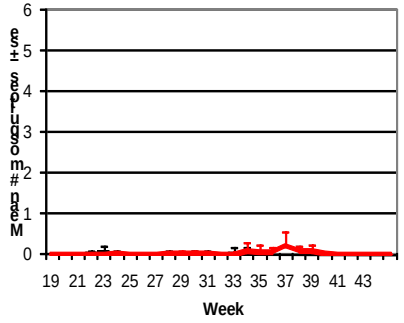
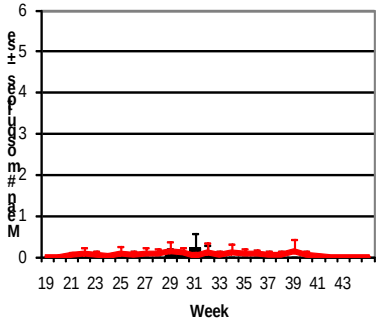
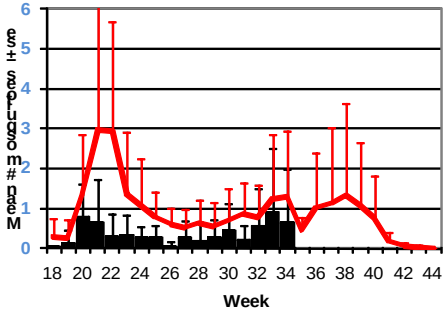
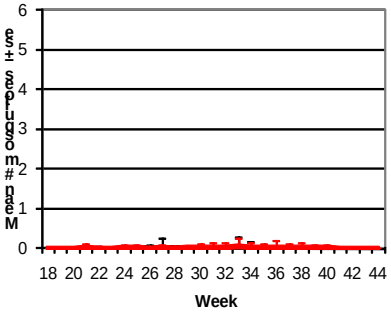
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations were above historical levels in several areas in response to precipitation in the previous weeks, including both metropolitan areas as well as the Northwestern Rural region. This latter region also shows that the current week (35) is above historical trends with only a partial dataset. It is anticipated that *multivoltine* floodwater species (Aedes vexans, trivitattus…) will respond accordingly to the excessive amounts of rainfall brought by Hurricane Irene. We may see a robust return of the univoltine species (Ae. sticticus, canadensis, cinereus). However previous local flooding patterns will likely ameliorate this egg hatching.	

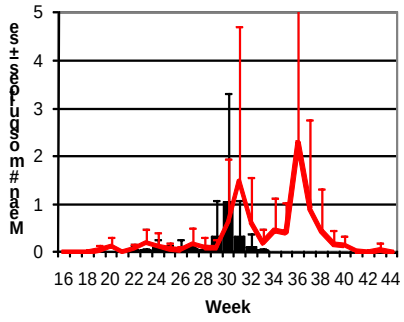
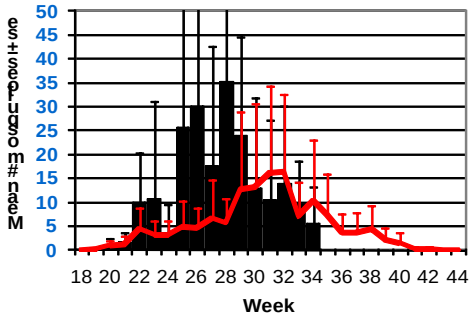
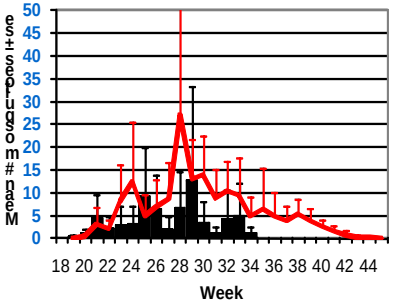
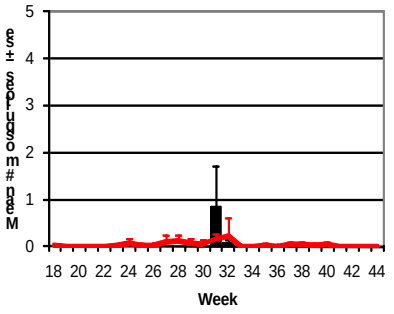
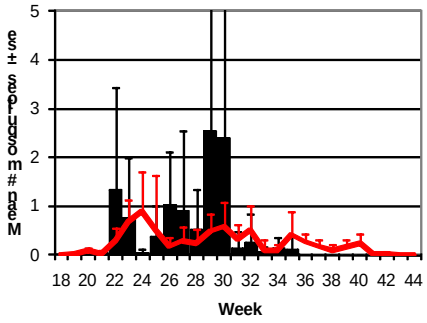
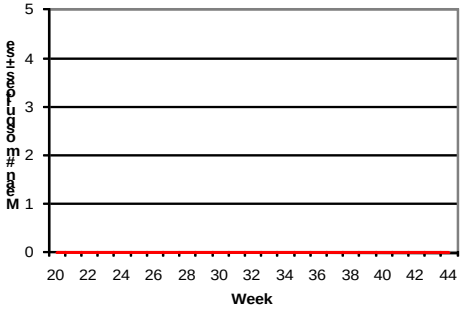
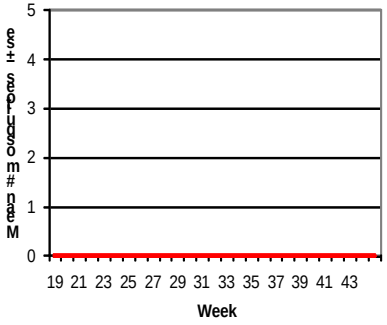
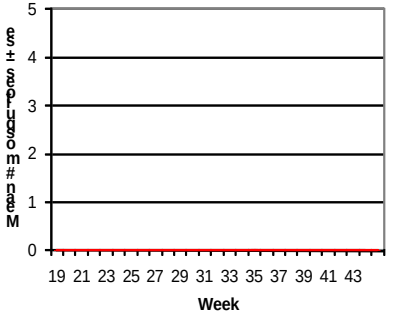
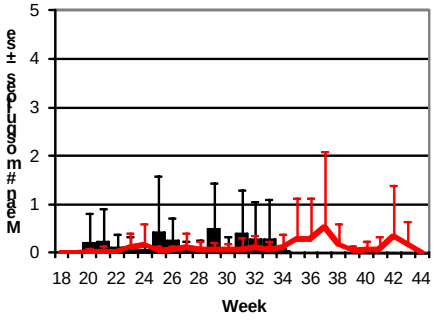
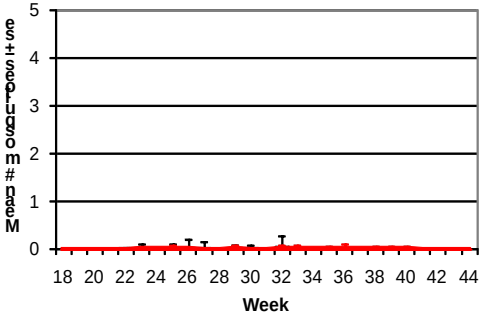
Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. These species continue to be near, or sometimes above historical values for some regions. The Delaware Bayshore has experienced significant populations, primarily from *Culex salinarius*. Other regions, such as the New York Metropolitan, or the Agricultural region appear to be around or somewhat under historical values. West Nile virus has been detected routinely among the ornithophilic *Culex*.	

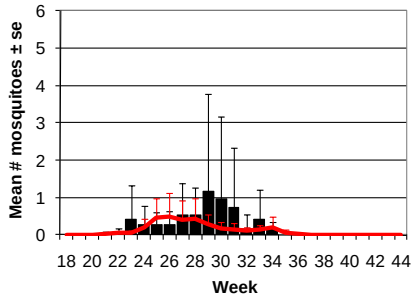
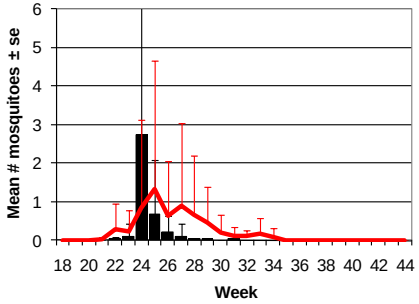
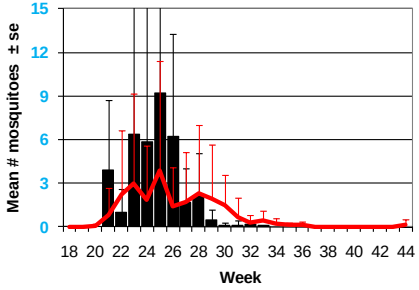
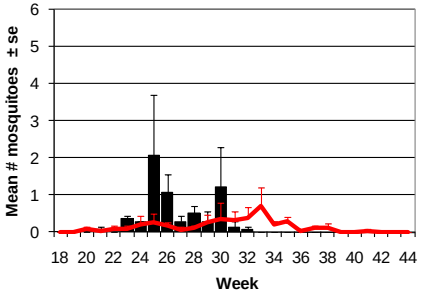
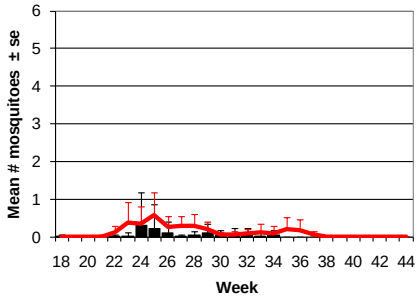
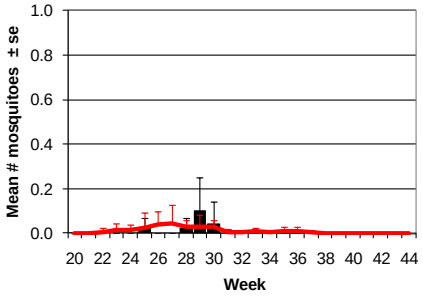
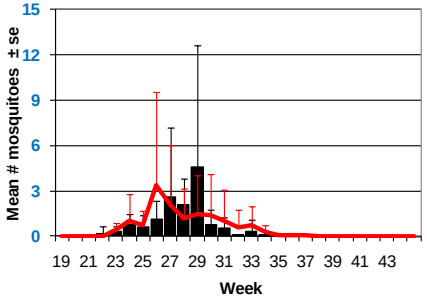
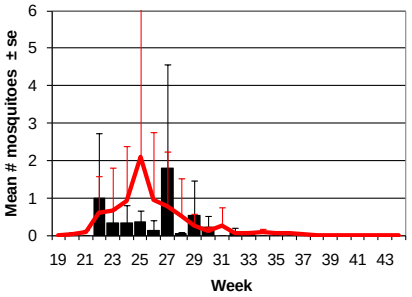
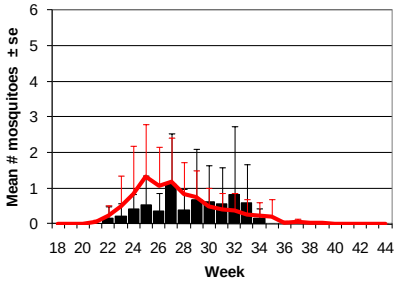
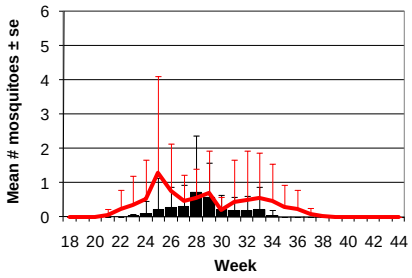
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* is the enzootic ornithophilic vector of eastern equine encephalitis. *Cs. melanura* abundances have been erratic at most sites, with levels generally being well below historical values. EEE activity has been evident in states surrounding New Jersey, with both positive mosquito pools in the enzootic vector as well as horses and a human. But detection of EEE has yet to happen in New Jersey despite detections occurring in previous years with low *Cs. melanura* populations.	

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**	
		Coastal values continued to remain below historical levels with the 3rd/4th emergence having occurred a few weeks ago. *Aedes sollicitans* population abundances were only higher in the New York Metropolitan region. As with other floodwater species, Hurricane Irene is likely to have an effect on coastal populations as these species respond not only to lunar tidal action (spring tide of the new moon) but also to precipitation and storm surge brought in by the hurricane. Next Full Moon: 12 September.	

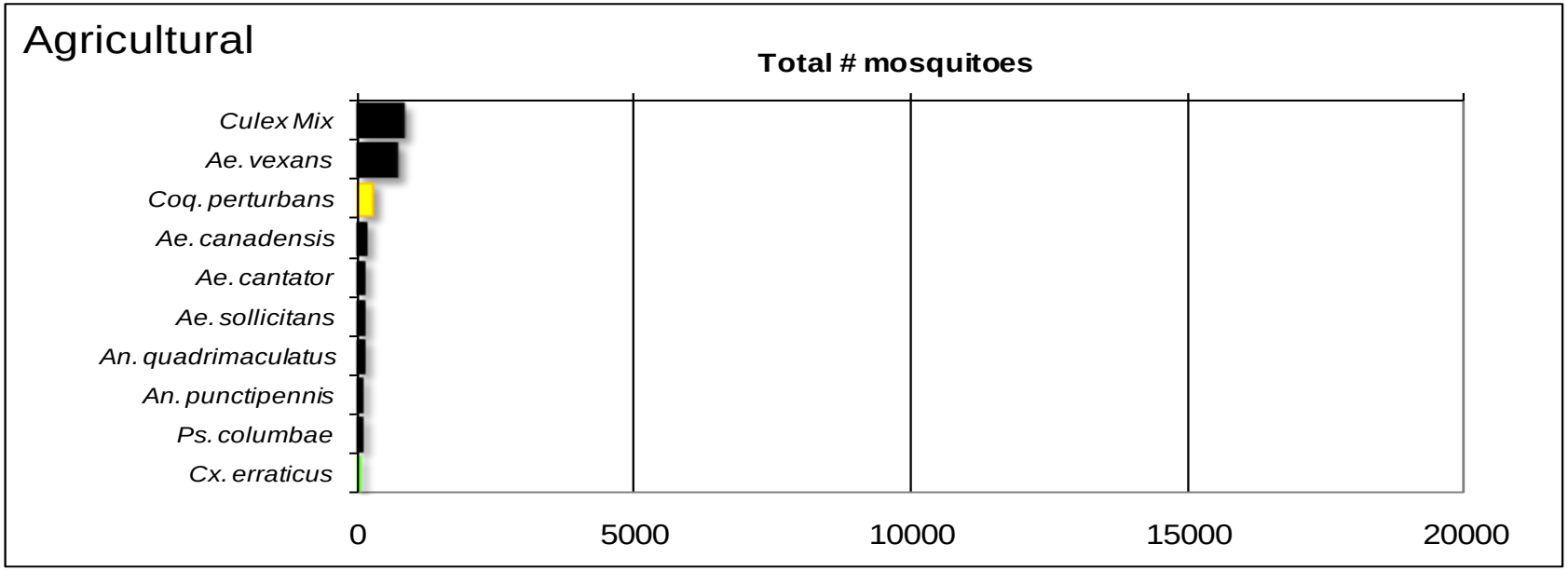
Coquillettidia perturbans
Monotypic (*Coq. perturbans* Type)

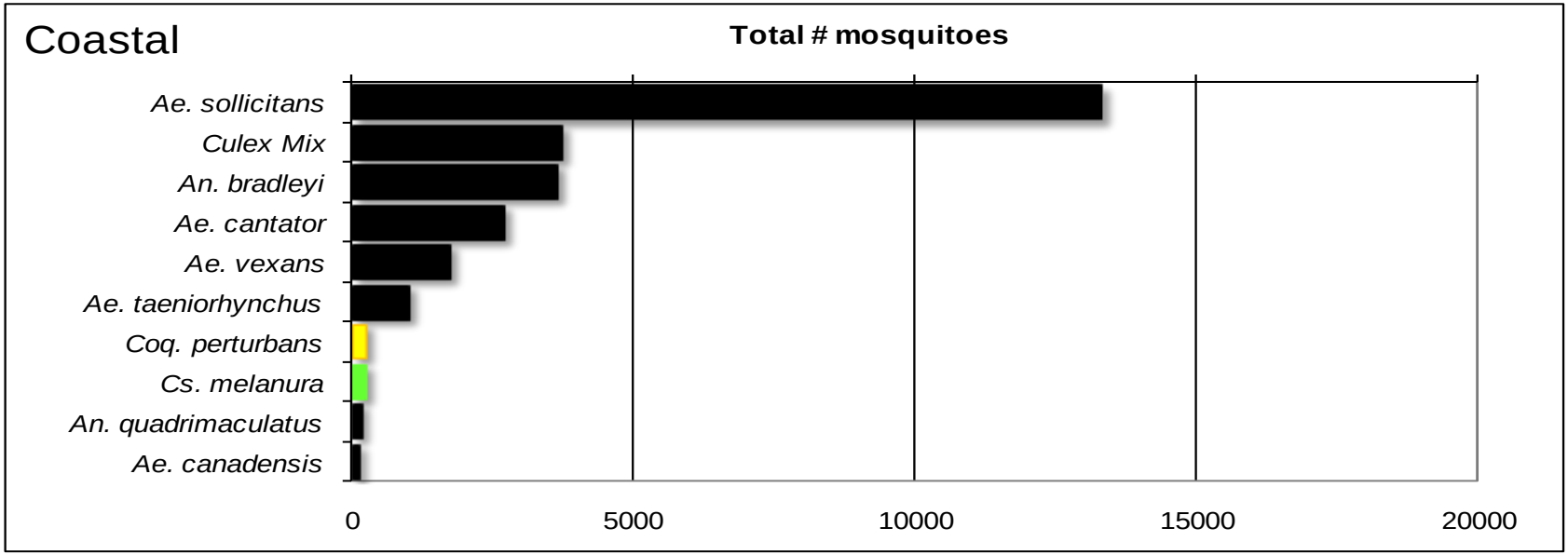
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* abundances were not higher than historical values in any of the regions. This species, for most areas, is on the downward side of population values.	

WNV *EEE*

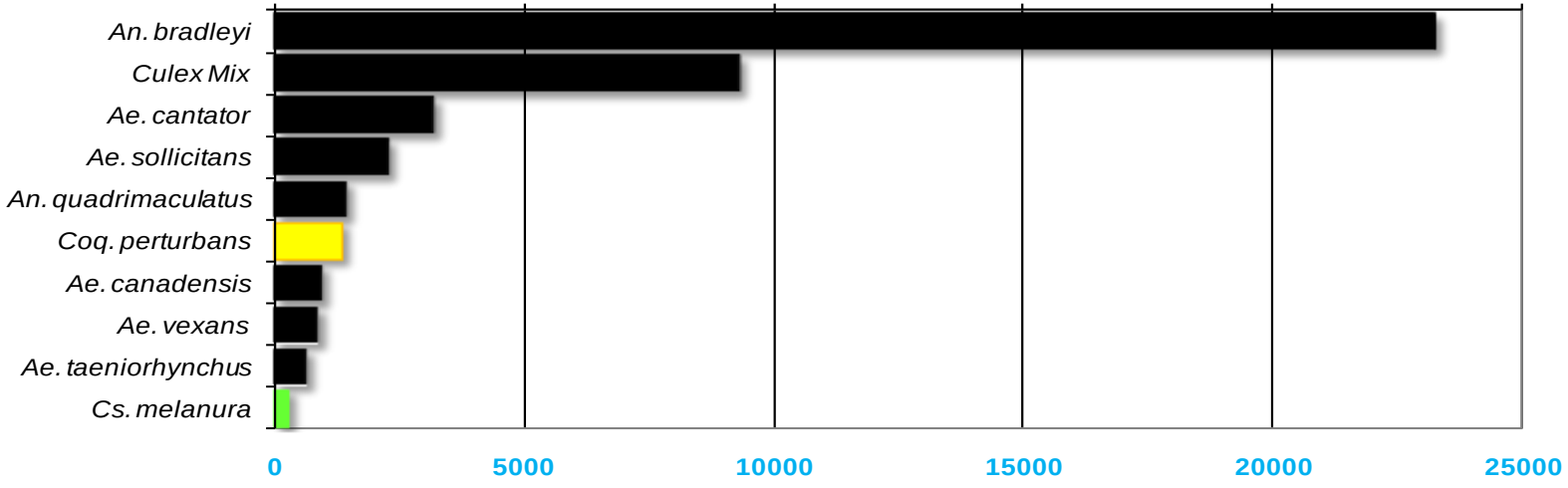
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

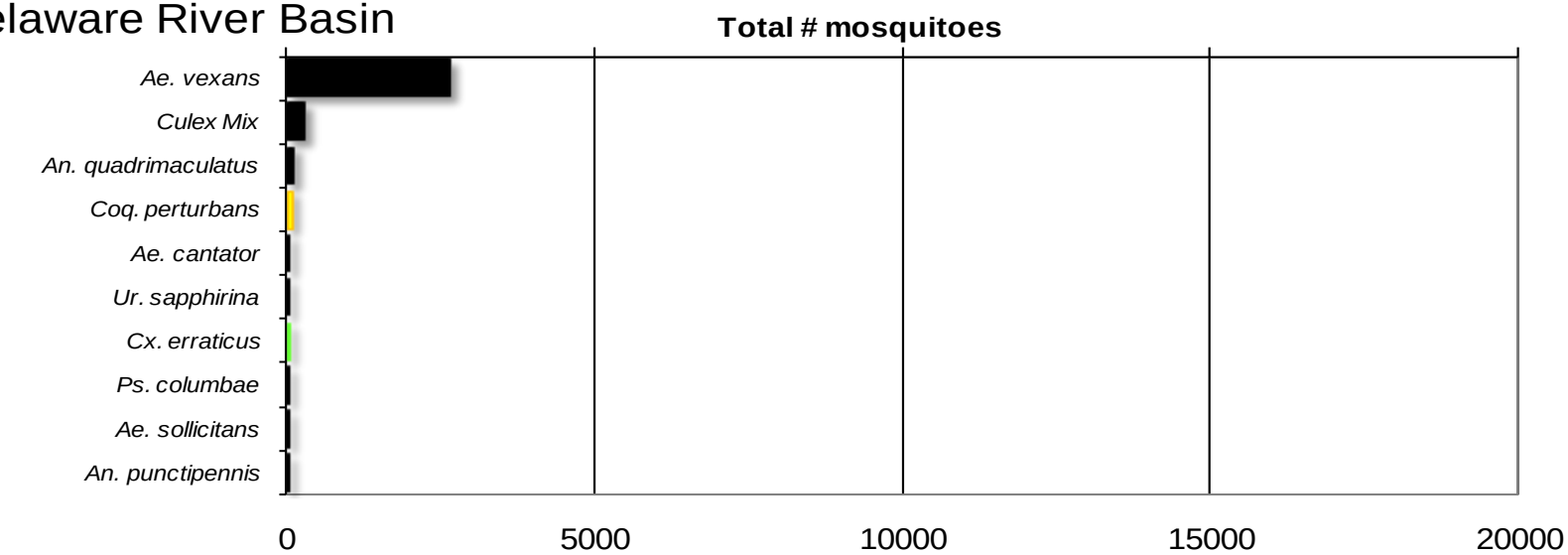




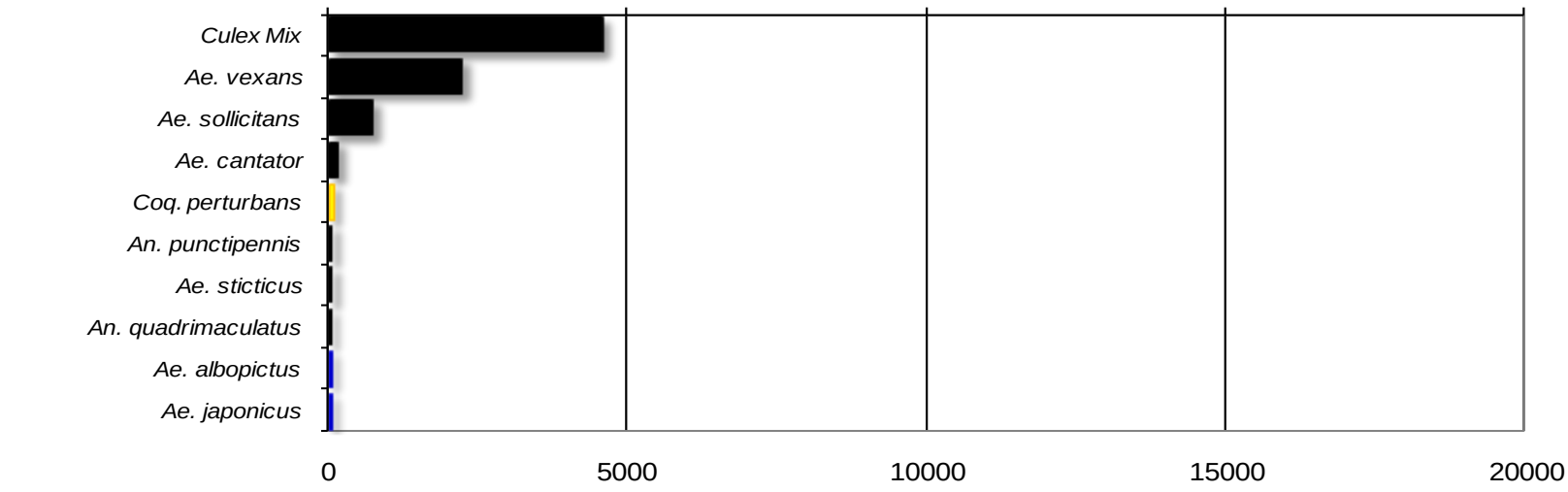
Delaware Bayshore



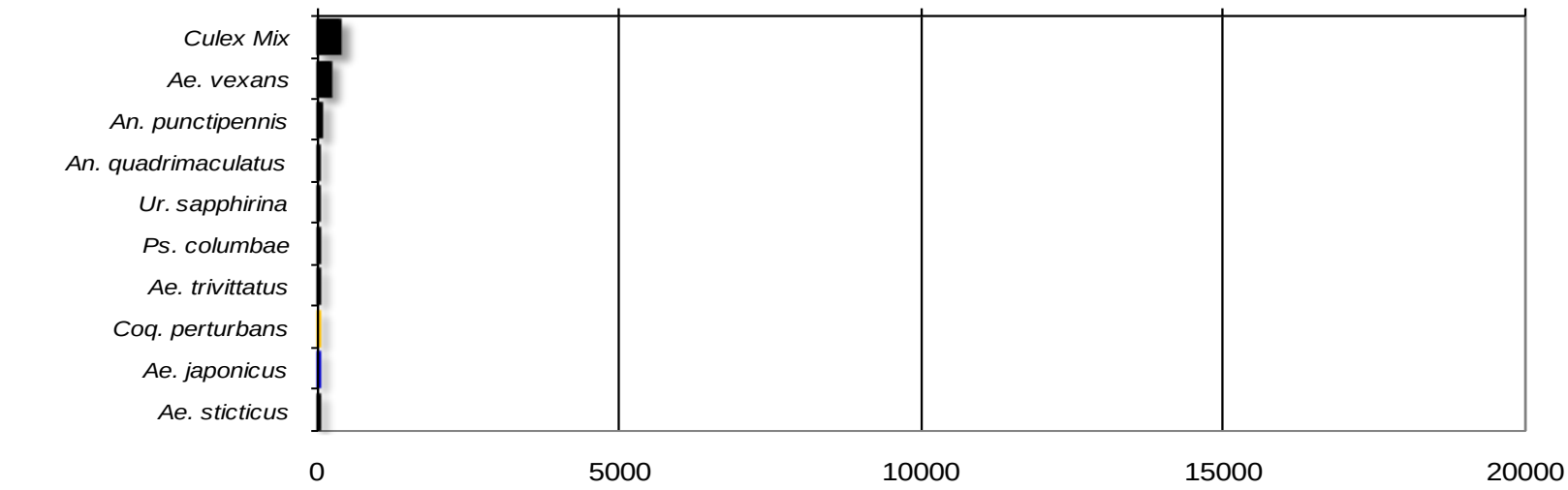
Delaware River Basin



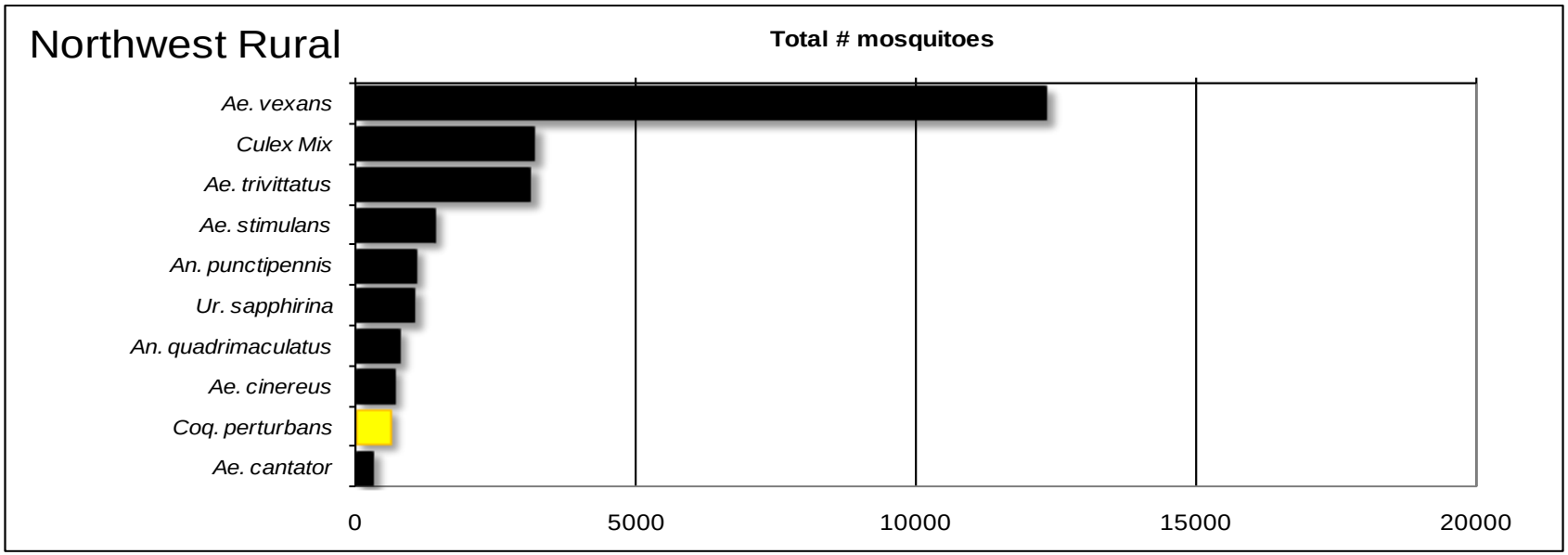
New York Metropolitan



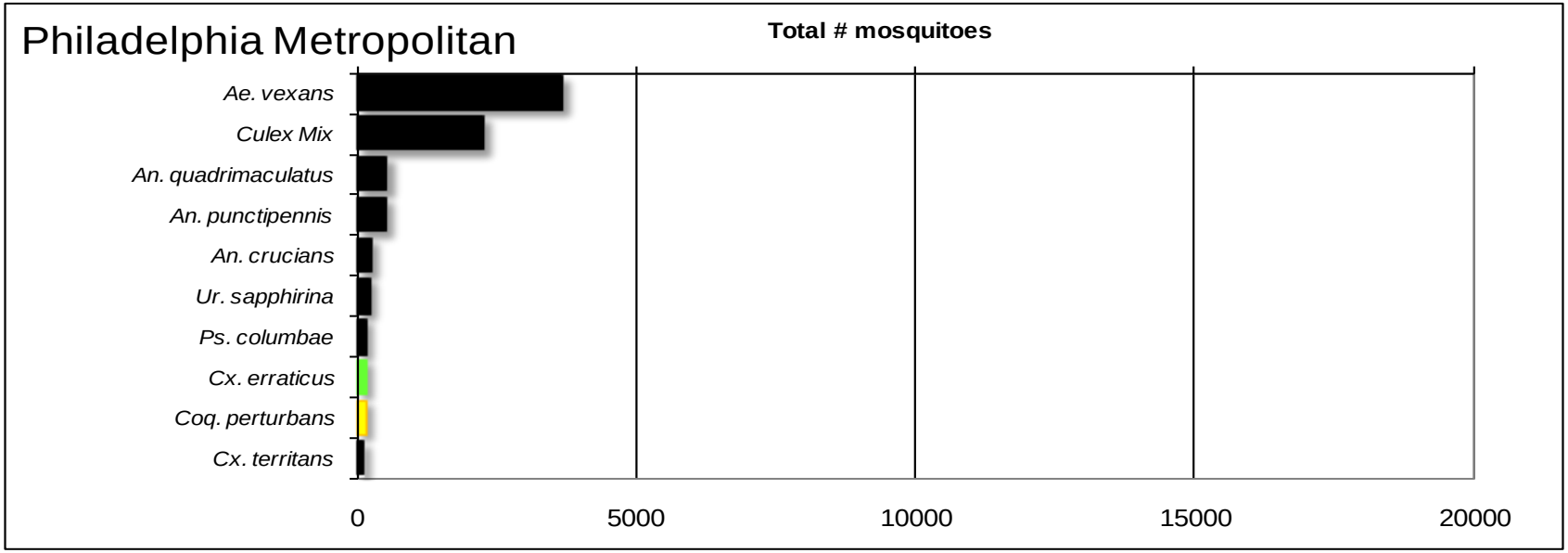
North Central Rural



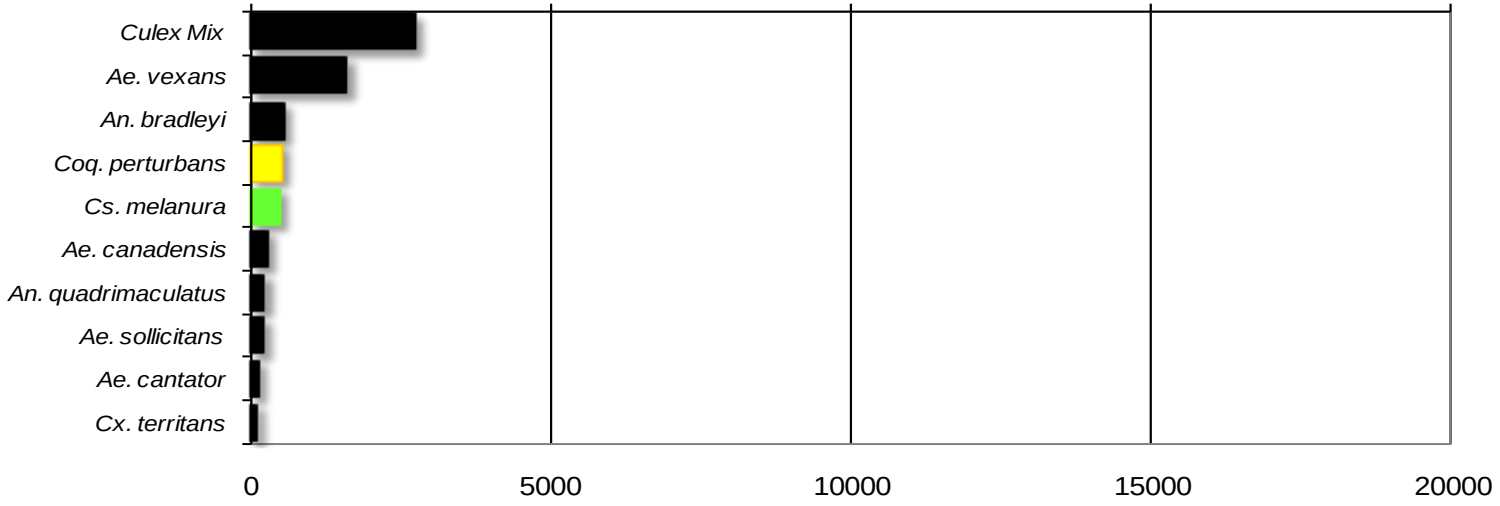
Northwest Rural



Philadelphia Metropolitan



Pinelands



Suburban Corridor