RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 21 June to 27 June 2009, CDC Weeks 25

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Center for Vector Biology

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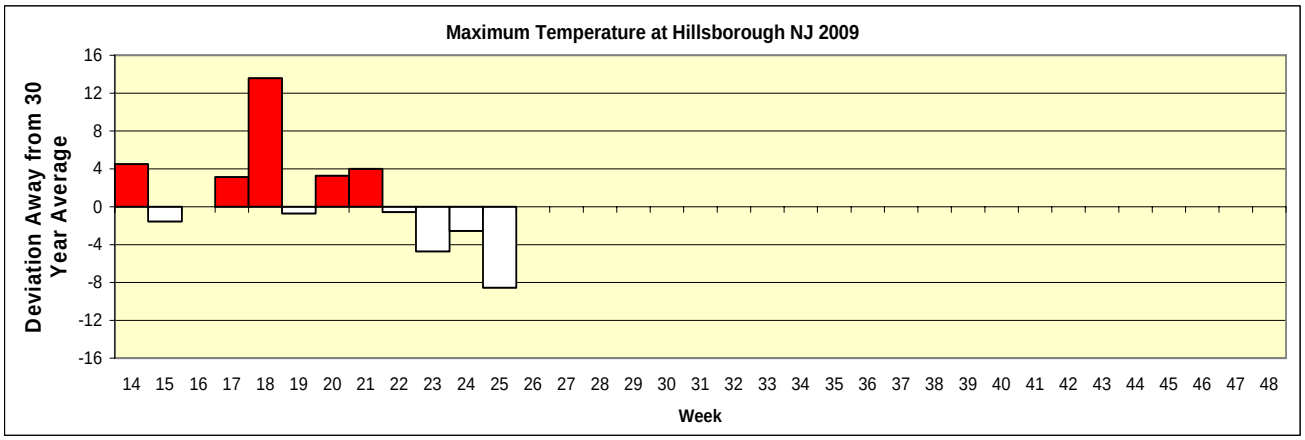
Summary table – Week 25

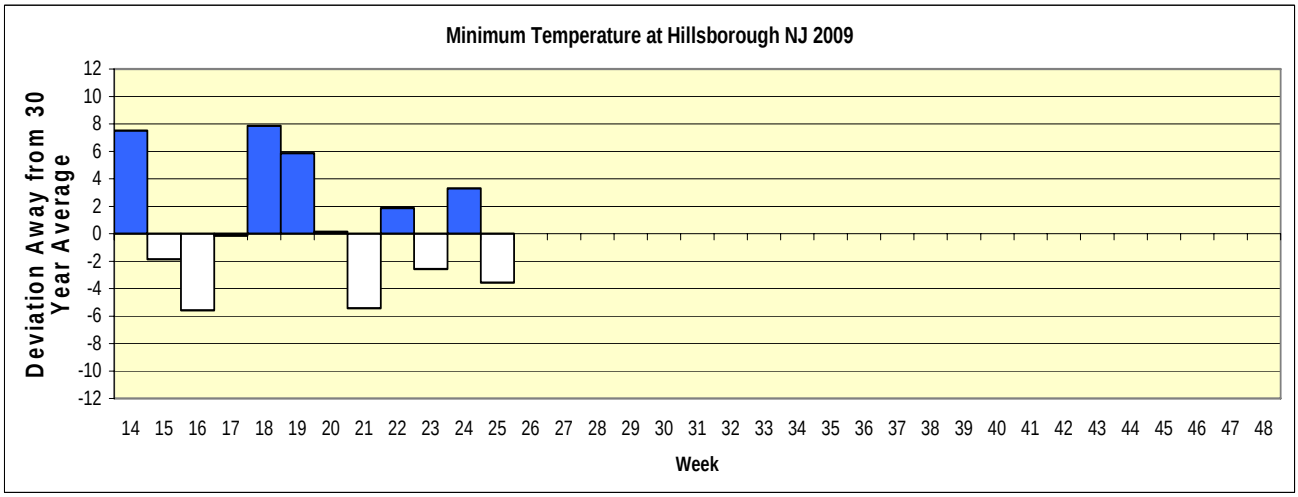
	Aedes vexans			*Culex* Mix			*Coquillettidia perturbans*			*Aedes sollicitans*		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	1.12	3.48	0	0.88	3.65	0	0.02	0.54	0	0.00	0.10	0
Coastal	9.79	9.49	1	3.73	8.74	0	0.03	1.93	0	3.35	23.81	0
Delaware Bayshore	0.00	3.35	0	0.00	13.33	0	0.00	3.00	0	0.00	9.15	0
Delaware River Basin	0.00	10.31	0	0.00	14.21	0	0.00	0.21	0	0.00	0.00	0
New York Metro	5.80	4.37	1	18.53	7.14	4	0.44	0.49	0	0.03	0.66	0
North Central Rural	0.18	0.67	0	0.16	0.73	0	0.00	0.07	0	0.00	0.00	0
Northwest Rural	2.40	15.85	0	1.49	3.56	0	1.40	0.13	4	0.00	0.00	0
Philadelphia Metro	11.31	10.68	1	2.74	9.30	0	0.00	3.61	0	0.00	0.00	0
Pinelands	2.18	1.61	1	0.83	2.47	0	0.04	1.64	0	0.00	0.09	0
Suburban Corridor	2.82	3.31	0	2.45	3.11	0	0.38	1.45	0	0.05	<0.01	4

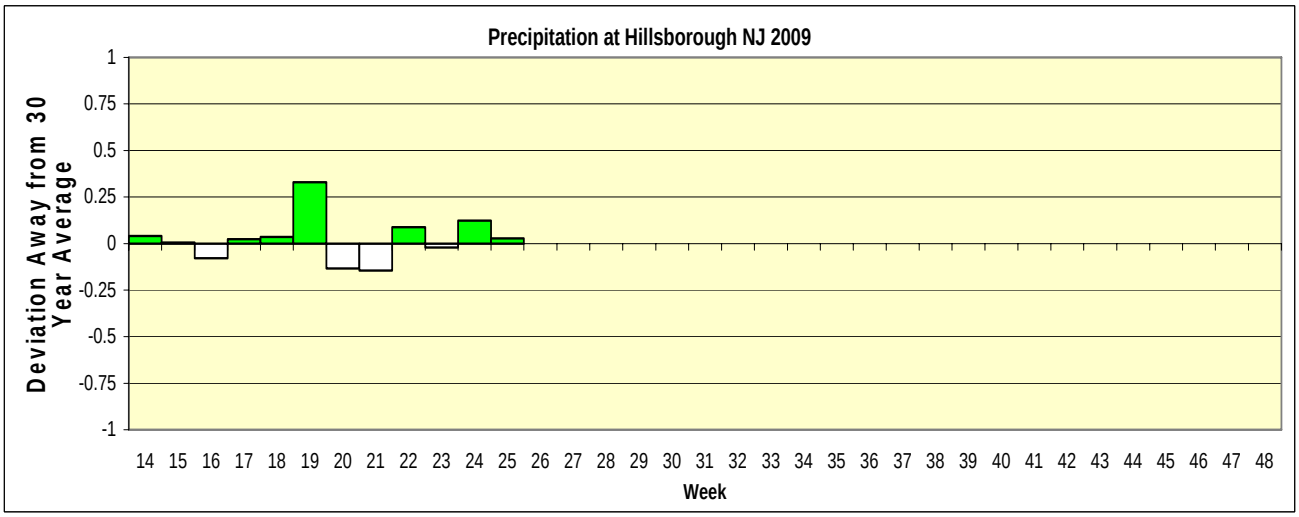
*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference 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: The recent rains in the past several weeks have provided the appropriate larval habitat for floodwater species, resulting in population abundance higher than recent historical trends. This is evident in the Coastal, New York Metropolitan, Philadelphia Metropolitan and Pinelands regions where *Aedes vexans* populations are slightly elevated. More significantly is the continued elevated populations of *Culex* species, particularly in the New York Metropolitan region. With the first WNV positive pools being detected in urban/suburban areas of New Jersey, the abundance of the primary enzootic vectors (and potential bridge vectors) in these areas should be noted.

Climate Deviations



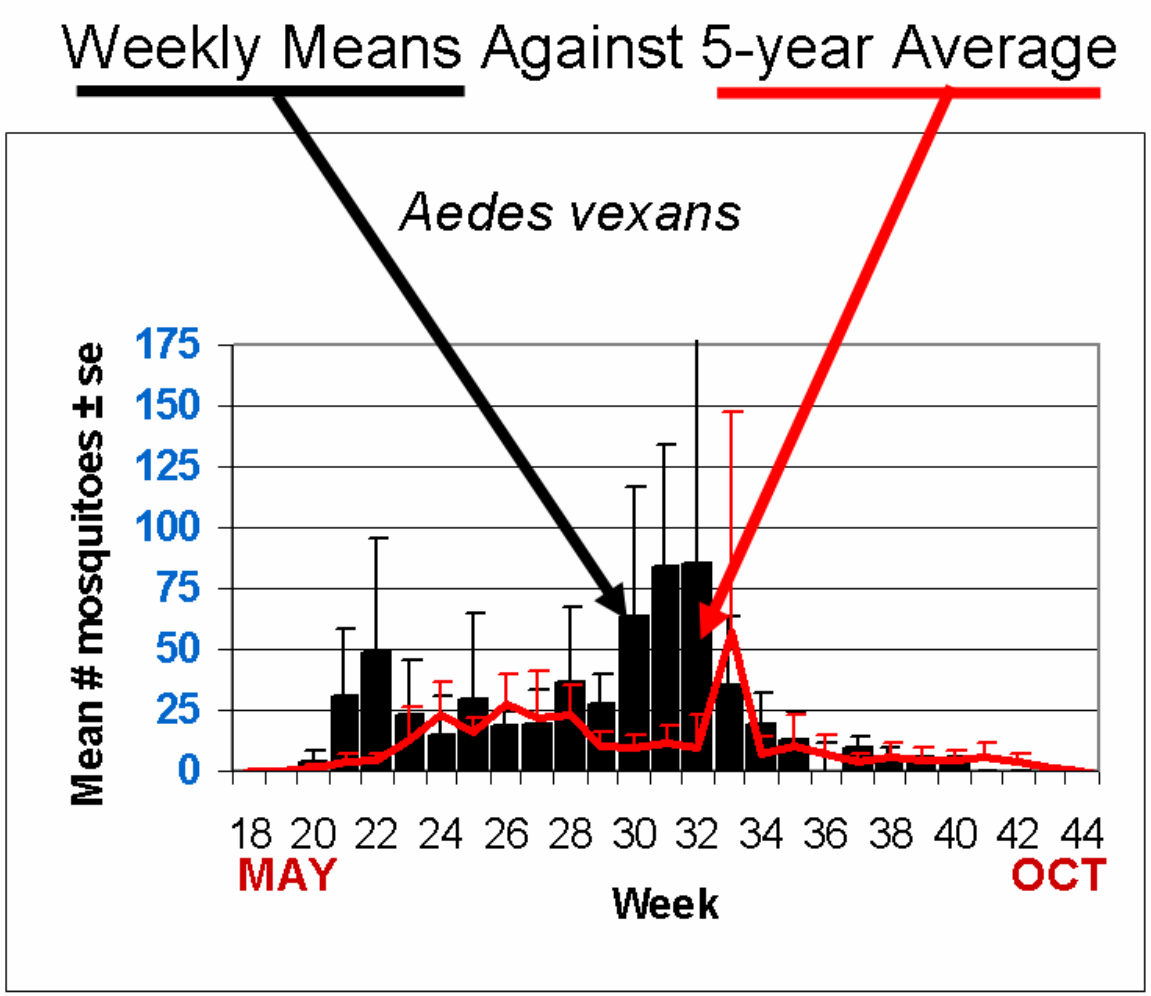




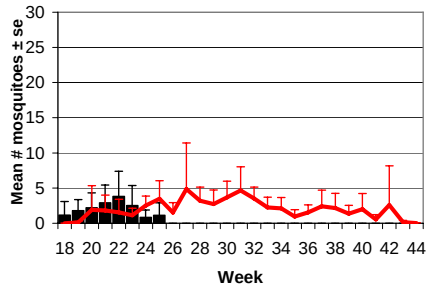
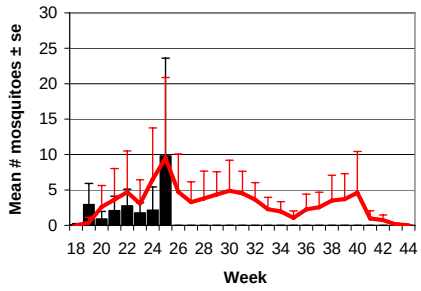
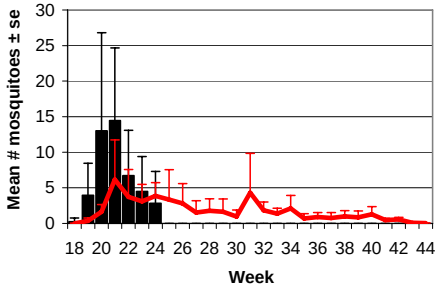
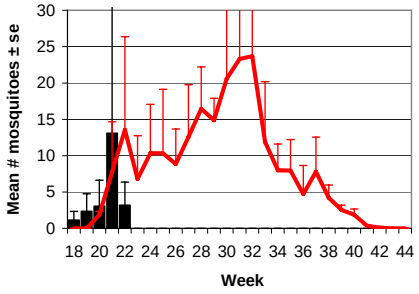
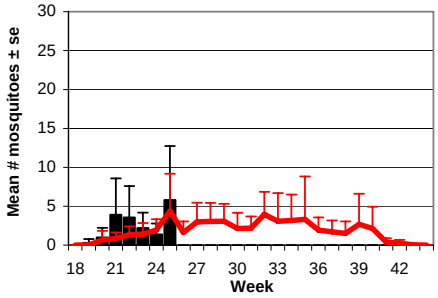
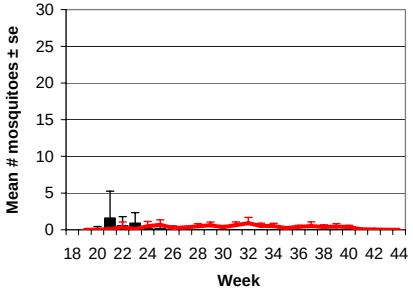
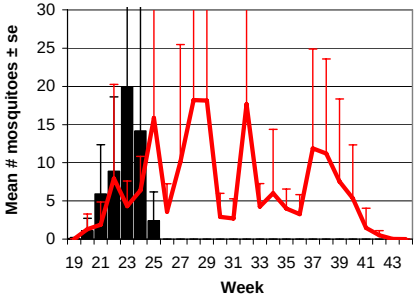
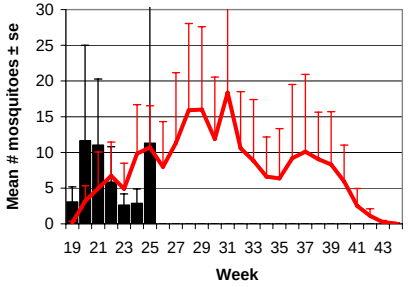
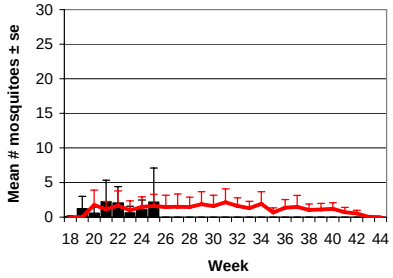
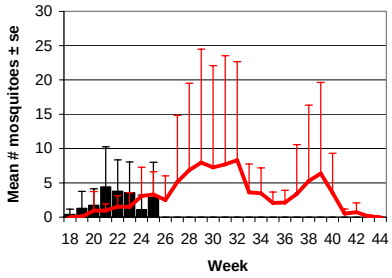
The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data are from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) while historical data was from the New Brunswick weather station. Color bars above the zero line indicate warmer maximum or minimum temperatures and wetter conditions while white bars indicate cooler temperatures and dryer conditions.

Data from: http://climate.rutgers.edu/njwxnet/index.php

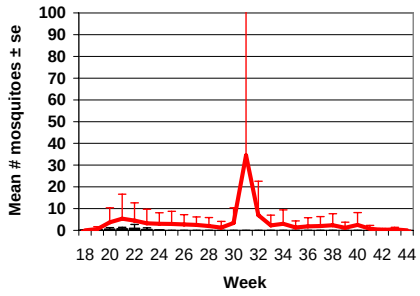
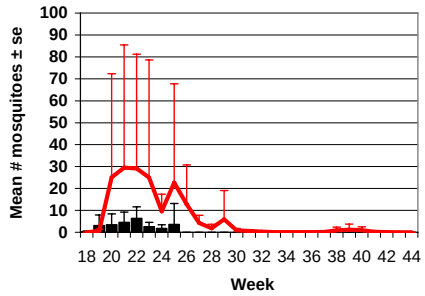
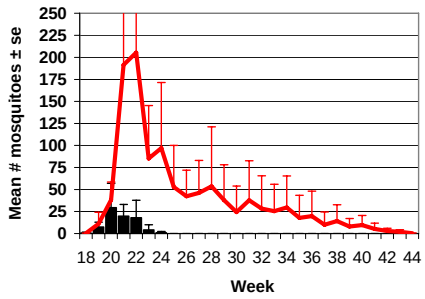
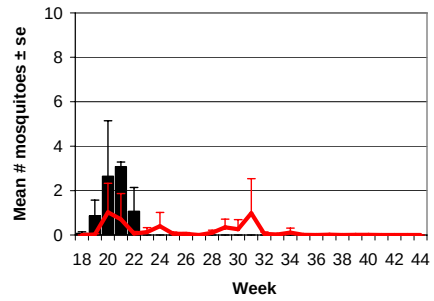
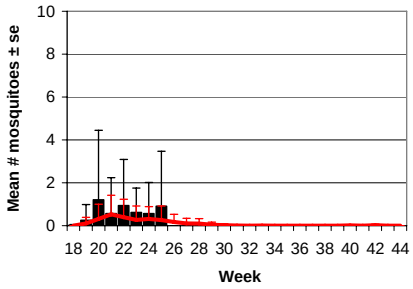
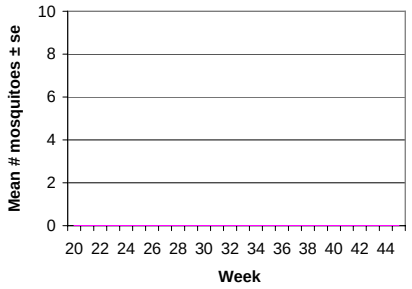
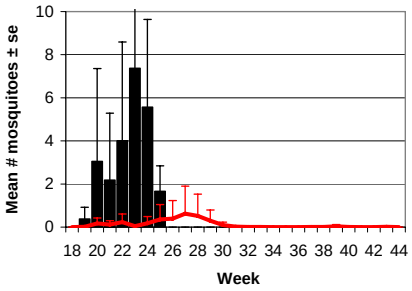
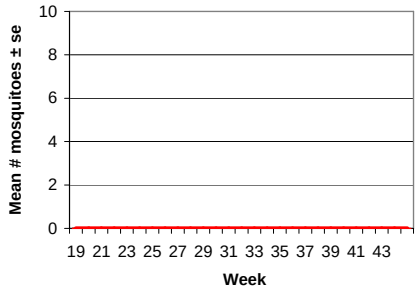
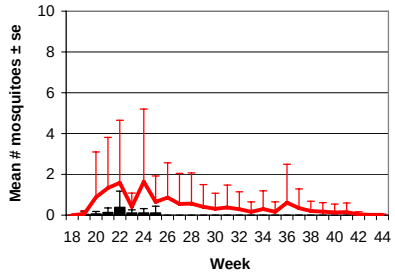
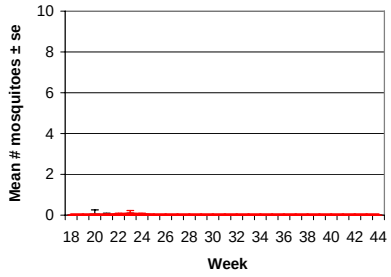
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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, Camden, Hudson, Middlesex, Monmouth, Morris, 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 appear to be approaching historical levels throughout New Jersey. An abundance of rainfall over the past several weeks has provided an abundance of suitable larval habitat, local populations have emerged in numbers along coastal and metropolitan regions.	

Aedes cantator - 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**	
		*Aedes cantator* populations in the Northwest Rural region continue to flourish.	

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

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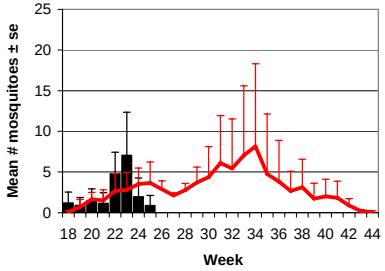
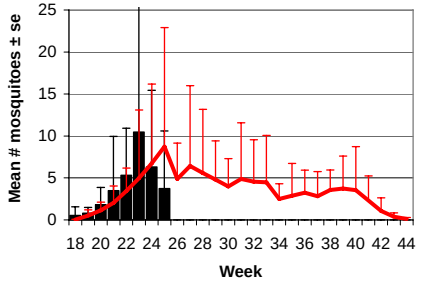
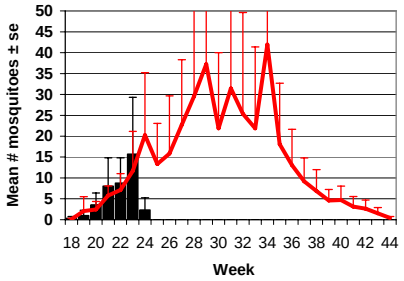
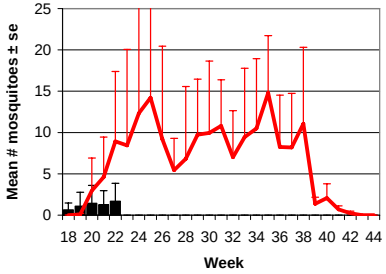
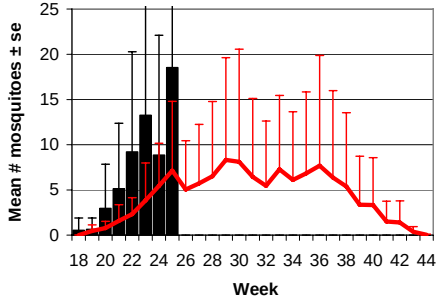
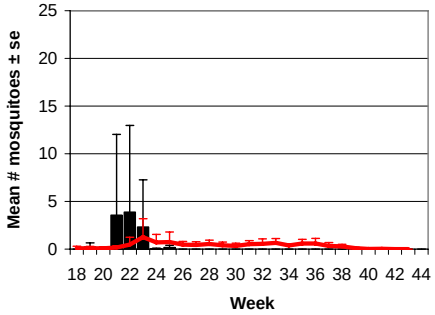
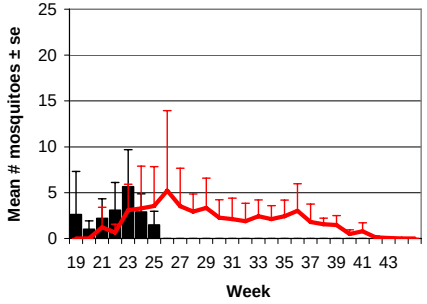
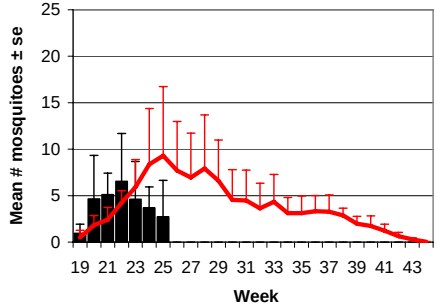
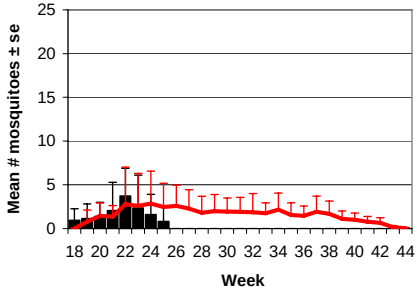
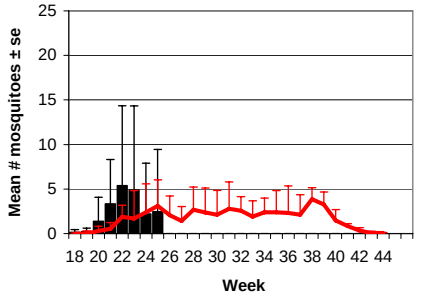
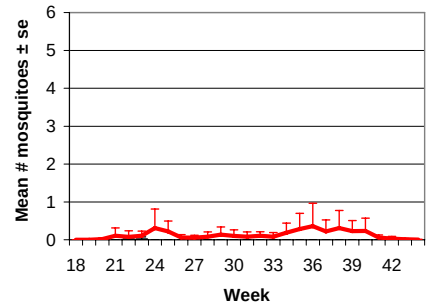
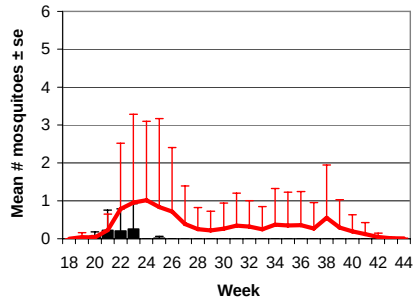
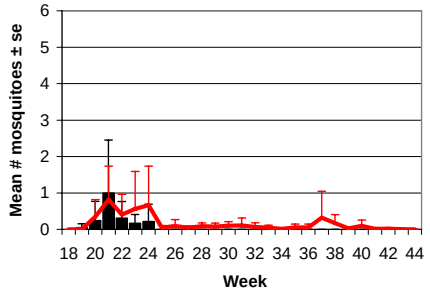
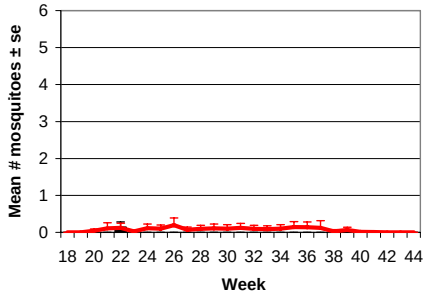
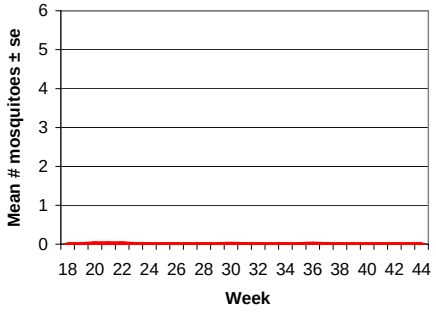
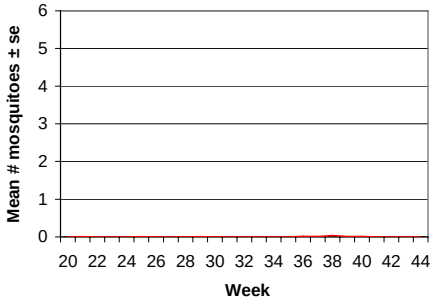
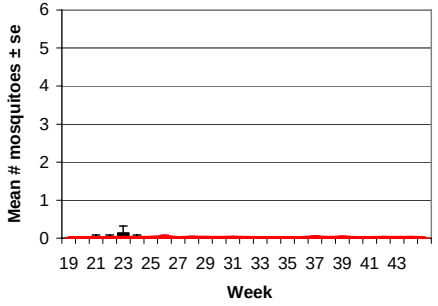
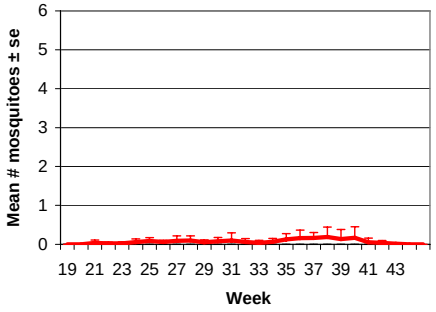
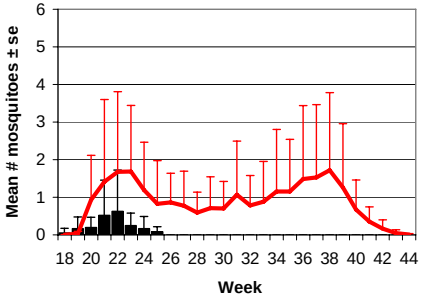
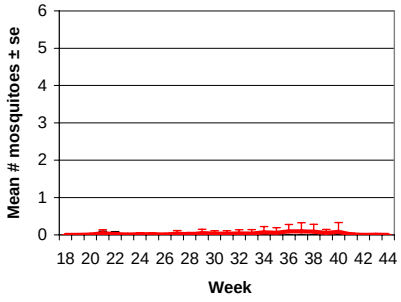
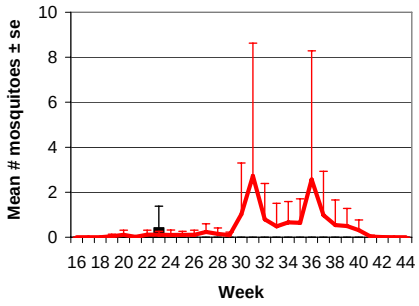
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* populations continue to be high in the New York Metropolitan region. Other regions throughout New Jersey are showing *Culex* abundances close to historical trends. At this point in time, two pools of mixed *Culex* species have been found positive for West Nile virus. Given that populations are either at or above historical levels plus the role that *Culex* species that comprise mixed *Culex* pools plays in the amplification and transmission of West Nile virus, due diligence is understandable.	

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

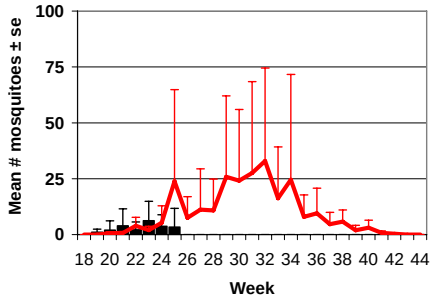
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura*, the enzootic ornithophilic vector of eastern equine encephalitis, is displaying values at historical levels in the Delaware Bayshore region while showing apparently lower levels in the Coastal and Pineland regions. However, error bars in these two regions are large, and current year's value may reflect the recent historical past. To date, there have been no positive eastern equine encephalitis pools detected by the New Jersey PHEL. However, EEE activity has been ongoing in the southeastern parts of the US.	

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

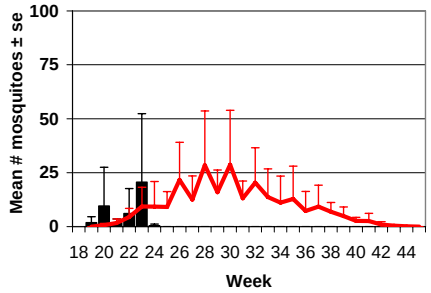
Agricultural



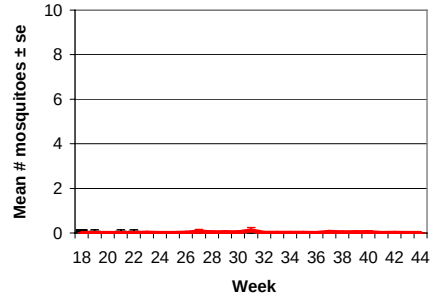
Coastal



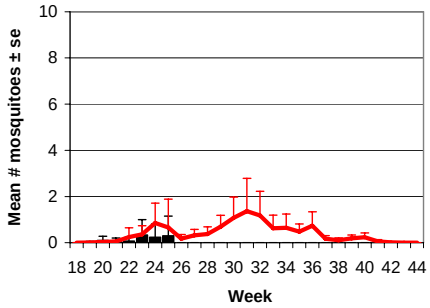
Delaware Bayshore



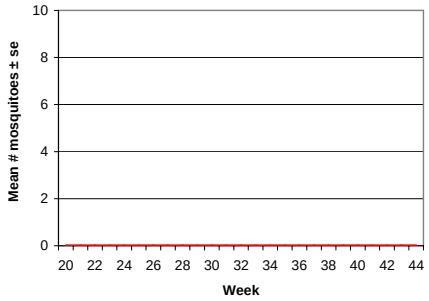
Delaware River Basin



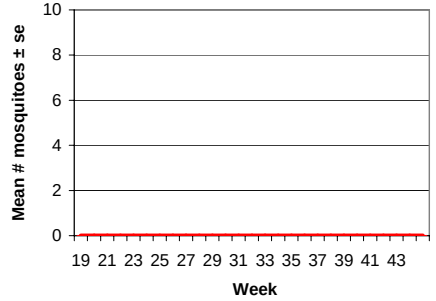
New York Metro



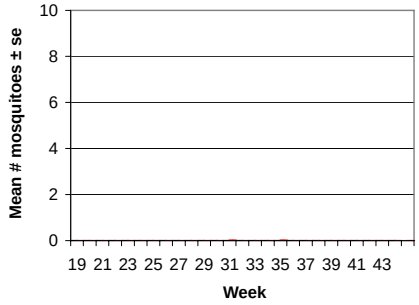
North Central Rural



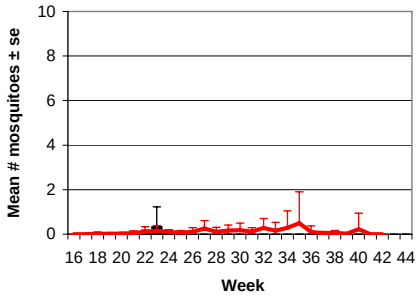
Northwestern Rural



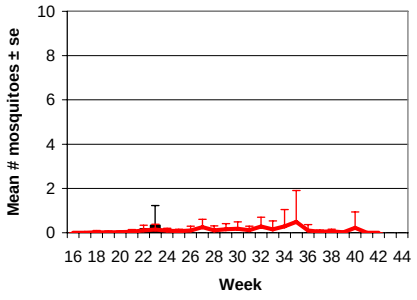
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

Like other floodwater species, *Aedes sollicitans* larvae can take only a few days to emerge once the eggs have been inundated with water under the optimal temperature conditions (which we are approaching). The first brood of *Ae. sollicitans* has emerged, and with the recent rainfall, in addition to tidal action, significant umbers of *Ae. sollicitans* can be expected in the next few weeks. As *Ae. sollicitans* eggs can last 5 years in the mud bank and still hatch (McNelly 1998), it is quite possible that individuals emerging this year in the abundance of floodwaters may be last year's cohorts.

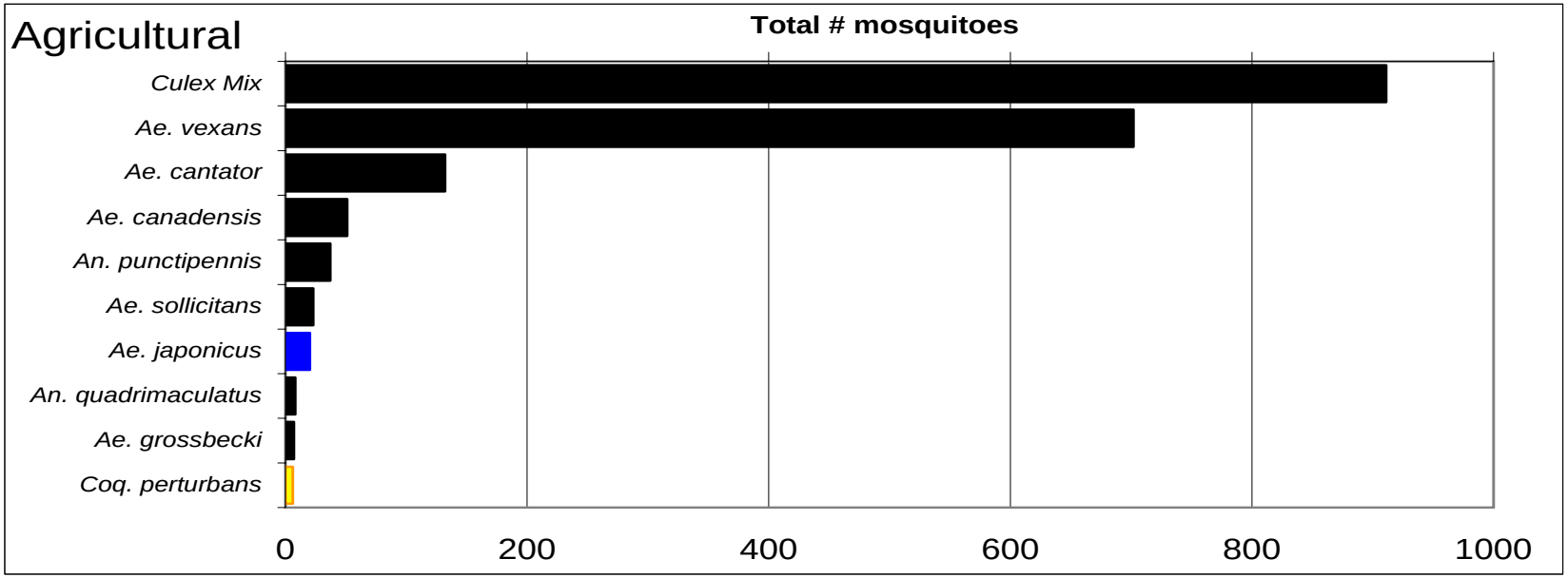
Next Full Moon: 7 July

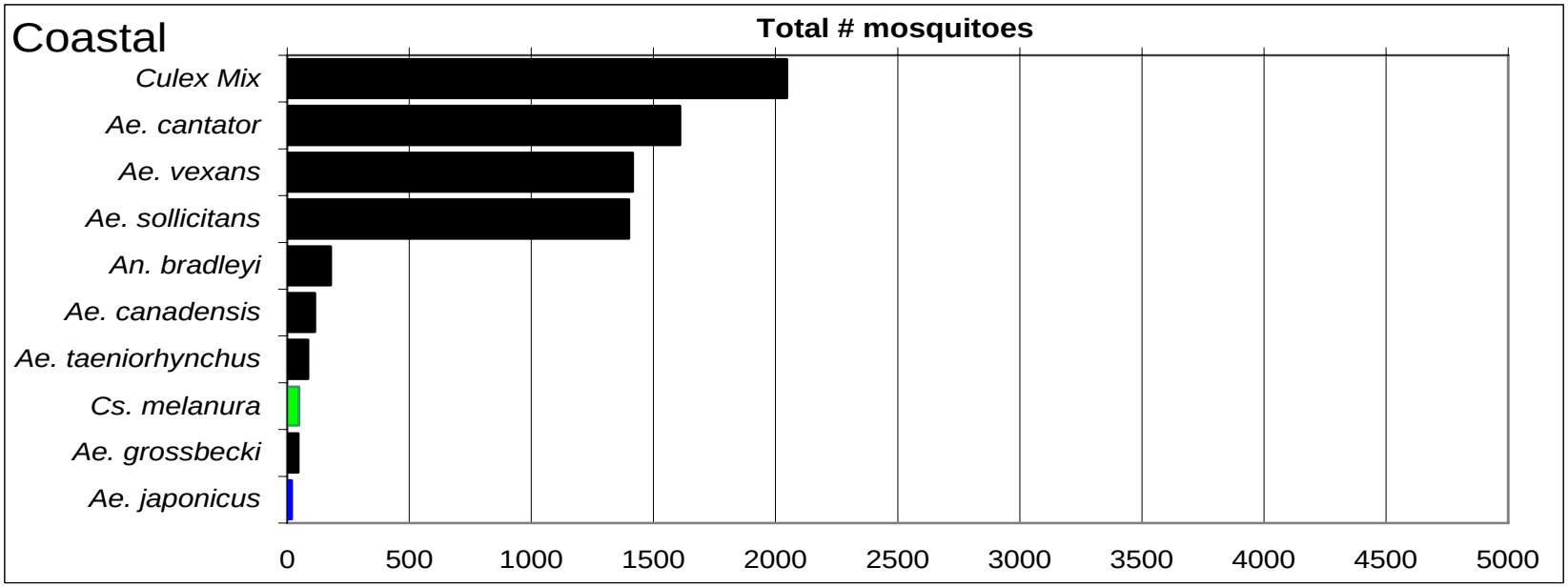
McNelley, J. 1998 The multivoltine *Aedes* life cycle type: *Aedes sollicitans*. NMCA http://www.nmca.org/PAPER17.htm

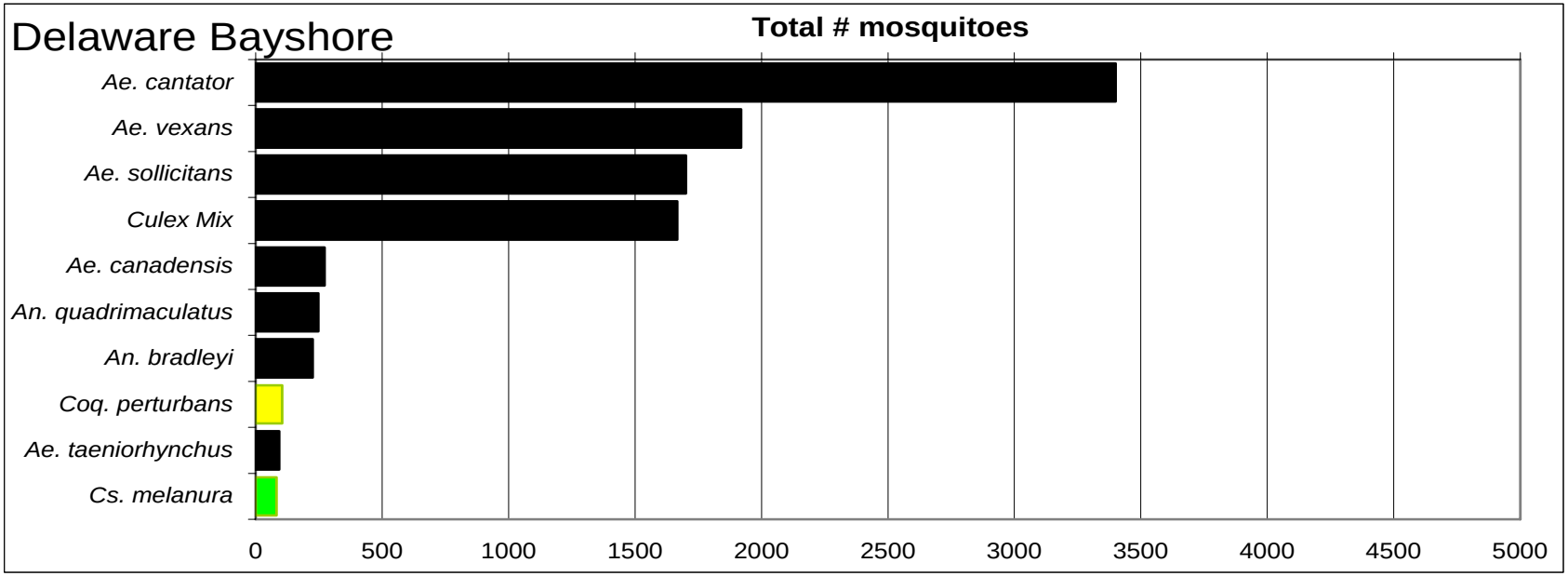
WNV *EEE*

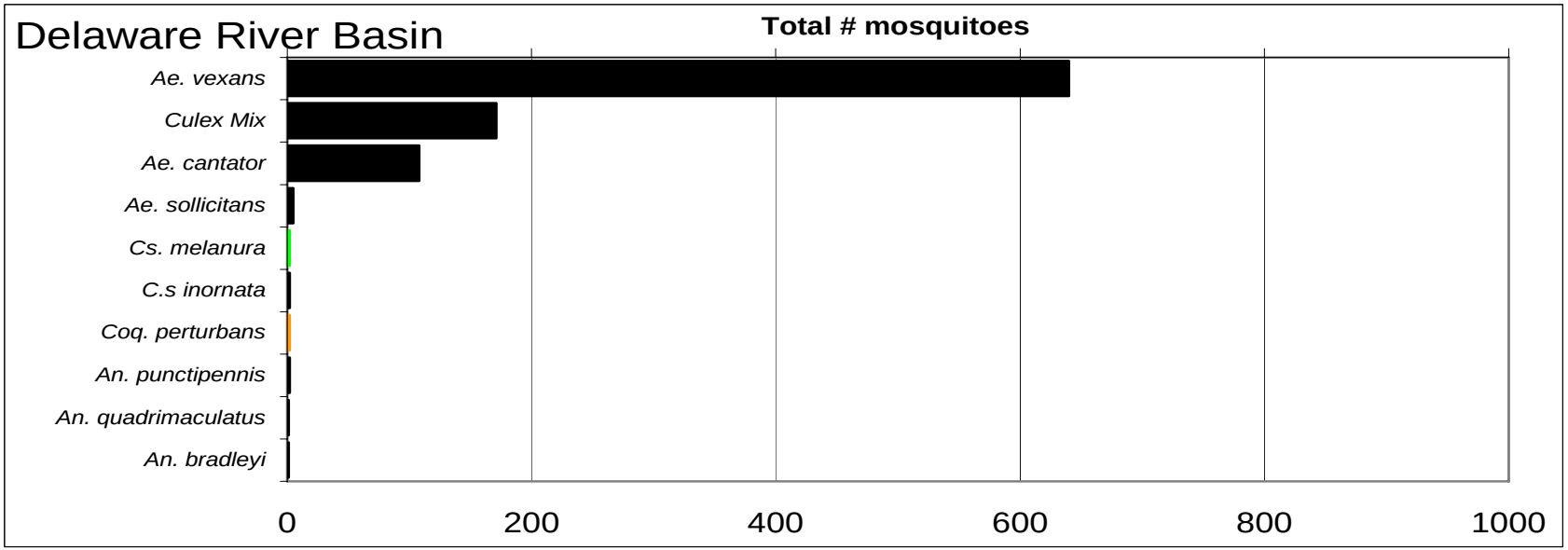
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

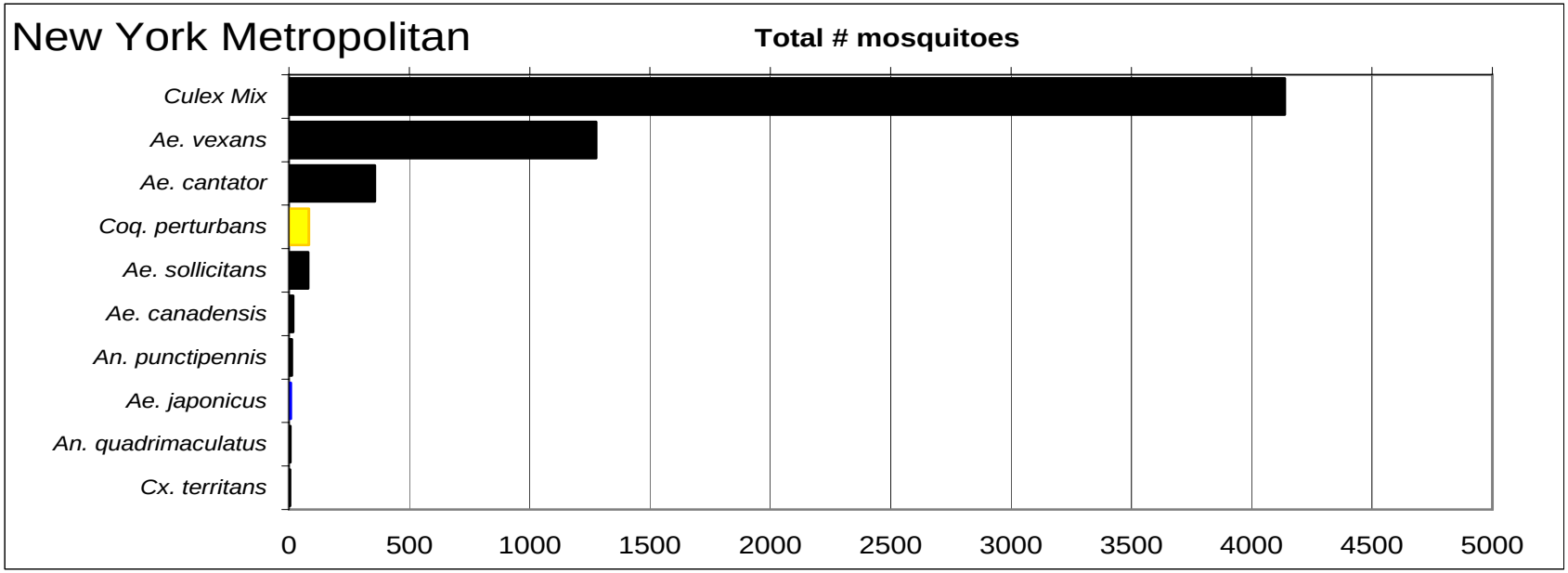
Note: In early season when fewer species are caught, graphs may show less than ten species listed.

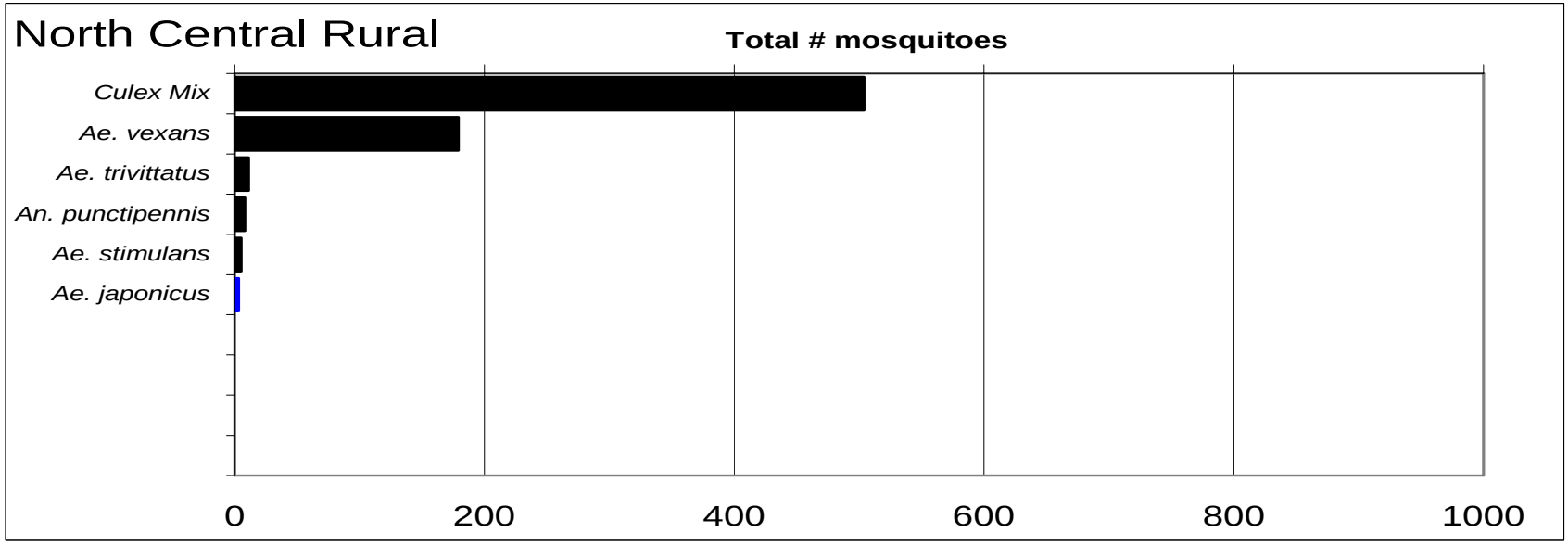


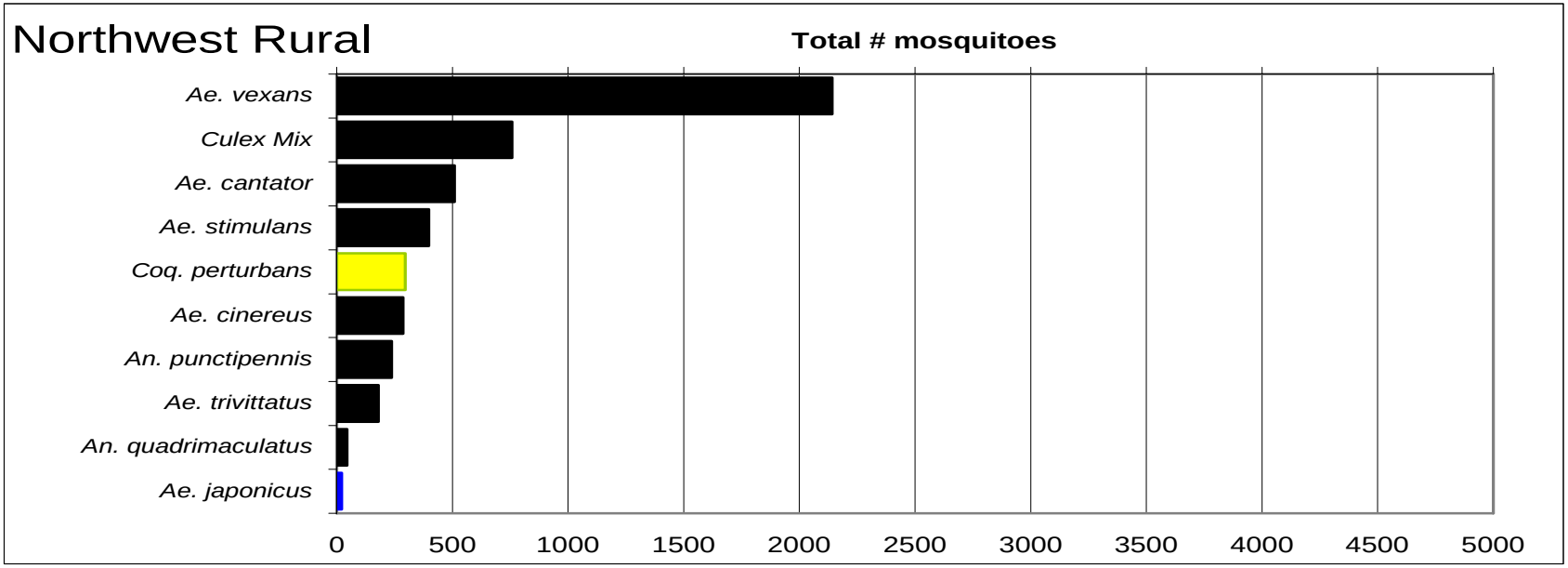


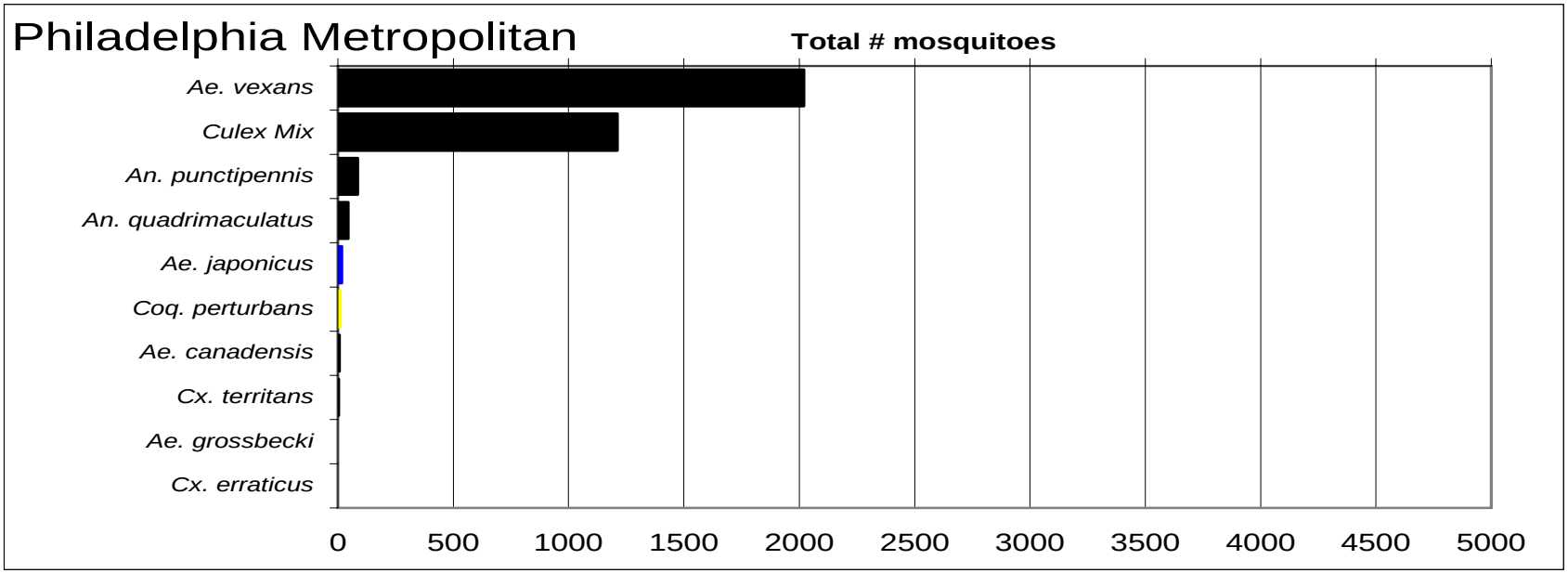

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Ae. vexans
Ae. sollicitans
Culex Mix
Ae. canadensis
An. quadrimaculatus
An. bradleyi
Coq. perturbans
Ae. taeniorhynchus
Cs. melanura
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

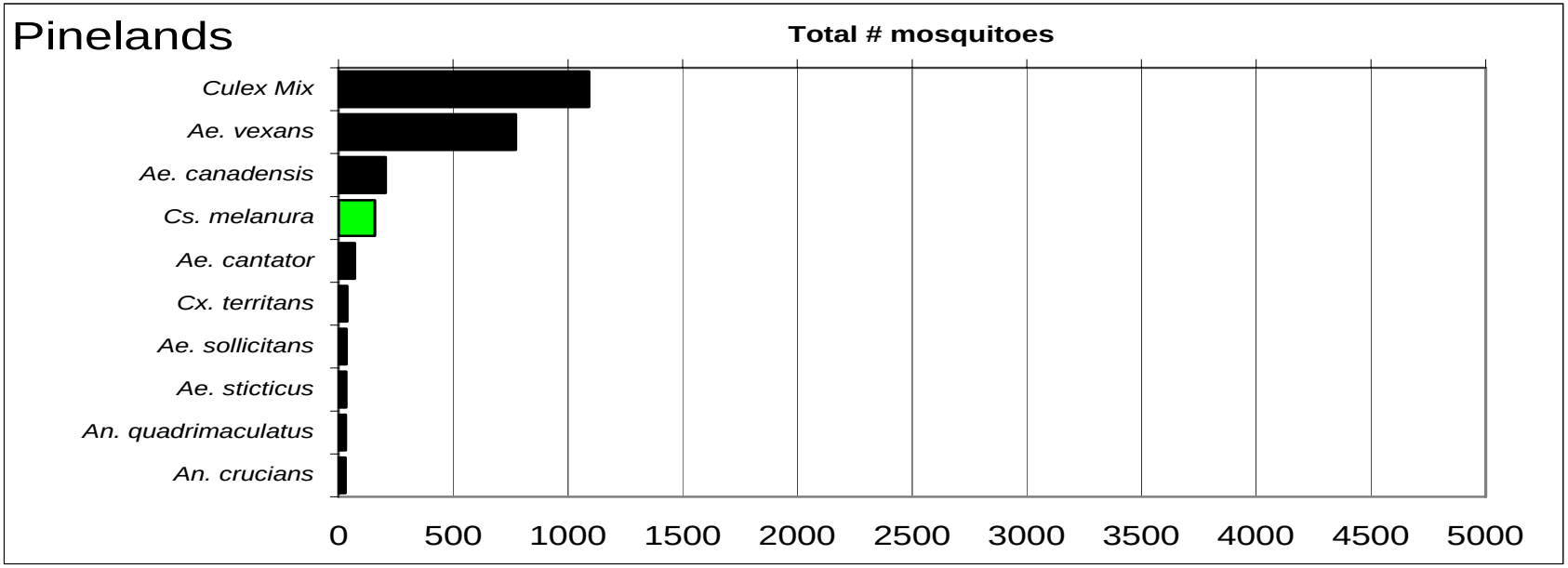

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ae. sollicitans
Cs. melanura
C.s inornata
Coq. perturbans
An. punctipennis
An. quadrimaculatus
An. bradleyi
0
200
400
600
800
1000

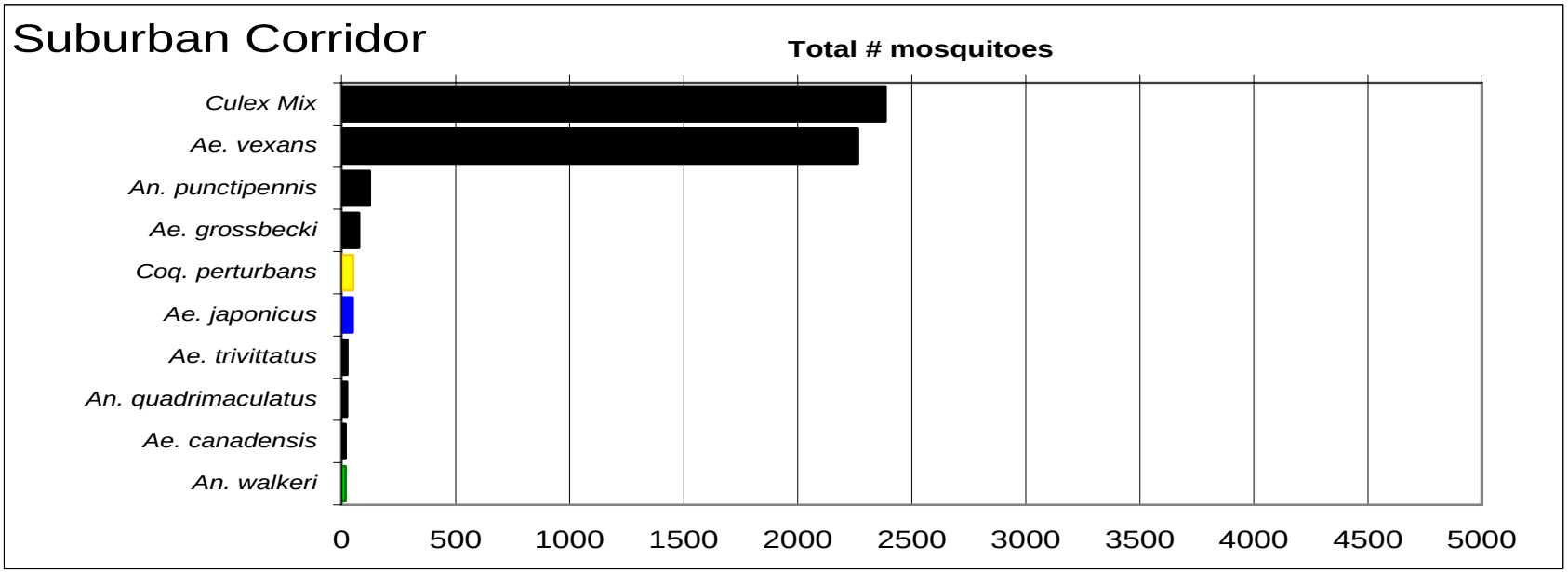

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Coq. perturbans
Ae. sollicitans
Ae. canadensis
An. punctipennis
Ae. japonicus
An. quadrimaculatus
Cx. territans
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. trivittatus
An. punctipennis
Ae. stimulans
Ae. japonicus
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. cantator
Ae. stimulans
Coq. perturbans
Ae. cinereus
An. punctipennis
Ae. trivittatus
An. quadrimaculatus
Ae. japonicus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Coq. perturbans
Ae. canadensis
Cx. territans
Ae. grossbecki
Cx. erraticus
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. canadensis
Cs. melanura
Ae. cantator
Cx. territans
Ae. sollicitans
Ae. sticticus
An. quadrimaculatus
An. crucians
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
Ae. grossbecki
Coq. perturbans
Ae. japonicus
Ae. trivittatus
An. quadrimaculatus
Ae. canadensis
An. walkeri
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000