RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE
Report for 1 June to 7 June 2008, CDC Week 23

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Center for Vector Biology

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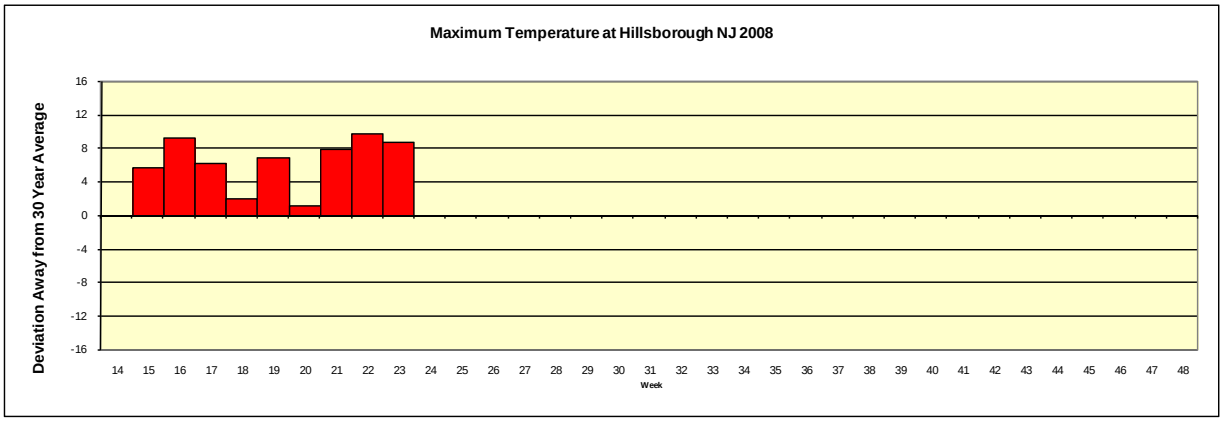
Summary table – Week 23

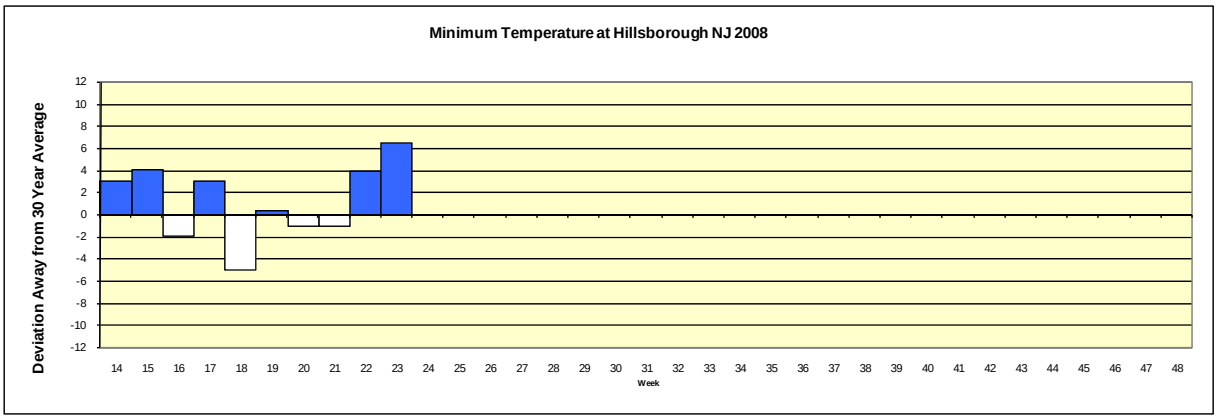
	Aedes vexans			***Culex* Mix**			***Coquillettidia perturbans***			***Aedes sollicitans***		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	0.57	0.84	0	2.74	2.57	1	0.00	0.05	0	0.00	0.05	0
Coastal	6.33	1.49	4	2.56	2.31	1	0.00	0.20	0	3.86	1.13	4
Delaware Bayshore	0.00	1.99	0	0.00	8.62	0	0.00	2.04	0	0.00	6.02	0
Delaware River Basin	0.00	8.73	0	0.00	9.04	0	0.00	0.21	0	0.00	0.01	0
New York Metro	3.11	0.65	4	6.50	2.65	3	0.00	0.05	0	0.10	0.07	1
North Central Rural	0.00	0.09	0	0.02	0.72	0	0.00	0.00	0	0.00	0.00	0
Northwest Rural	0.09	1.86	0	1.26	1.84	0	0.00	0.01	0	0.00	0.00	0
Philadelphia Metro	2.12	3.66	0	6.24	5.29	1	0.23	0.09	4	0.00	0.00	0
Pinelands	0.38	0.89	0	5.31	1.96	4	0.03	1.64	0	0.03	0.17	0
Suburban Corridor	2.39	0.82	4	1.08	1.37	0	0.00	0.01	0	0.00	0.00	0

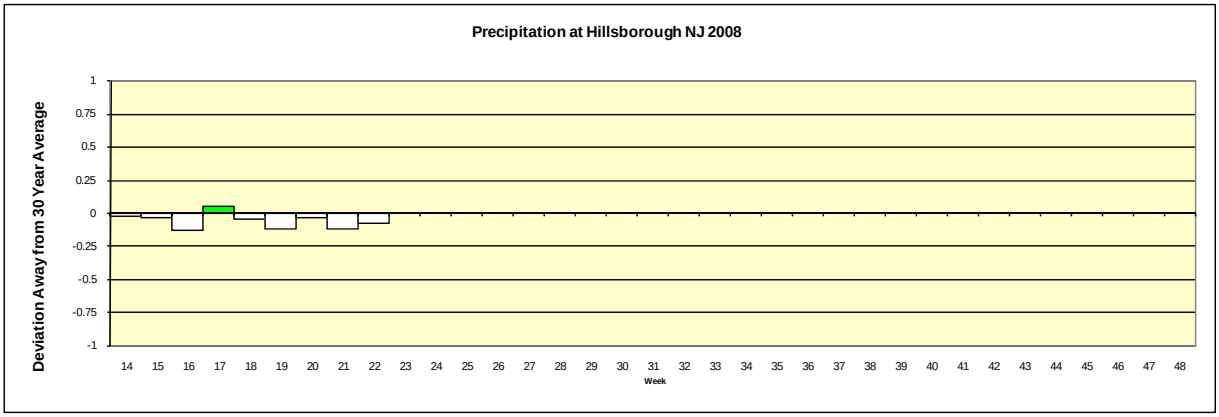
Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference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

State Summary: Both *Aedes vexans* and the *Culex* mixed species group showed population increases from the previous week, primarily in areas along the coast and in urban and suburban areas. Recent locally heavy rains and higher than normal temperatures should factor into significant *Ae. vexans* populations in the coming weeks.

Climate Deviations

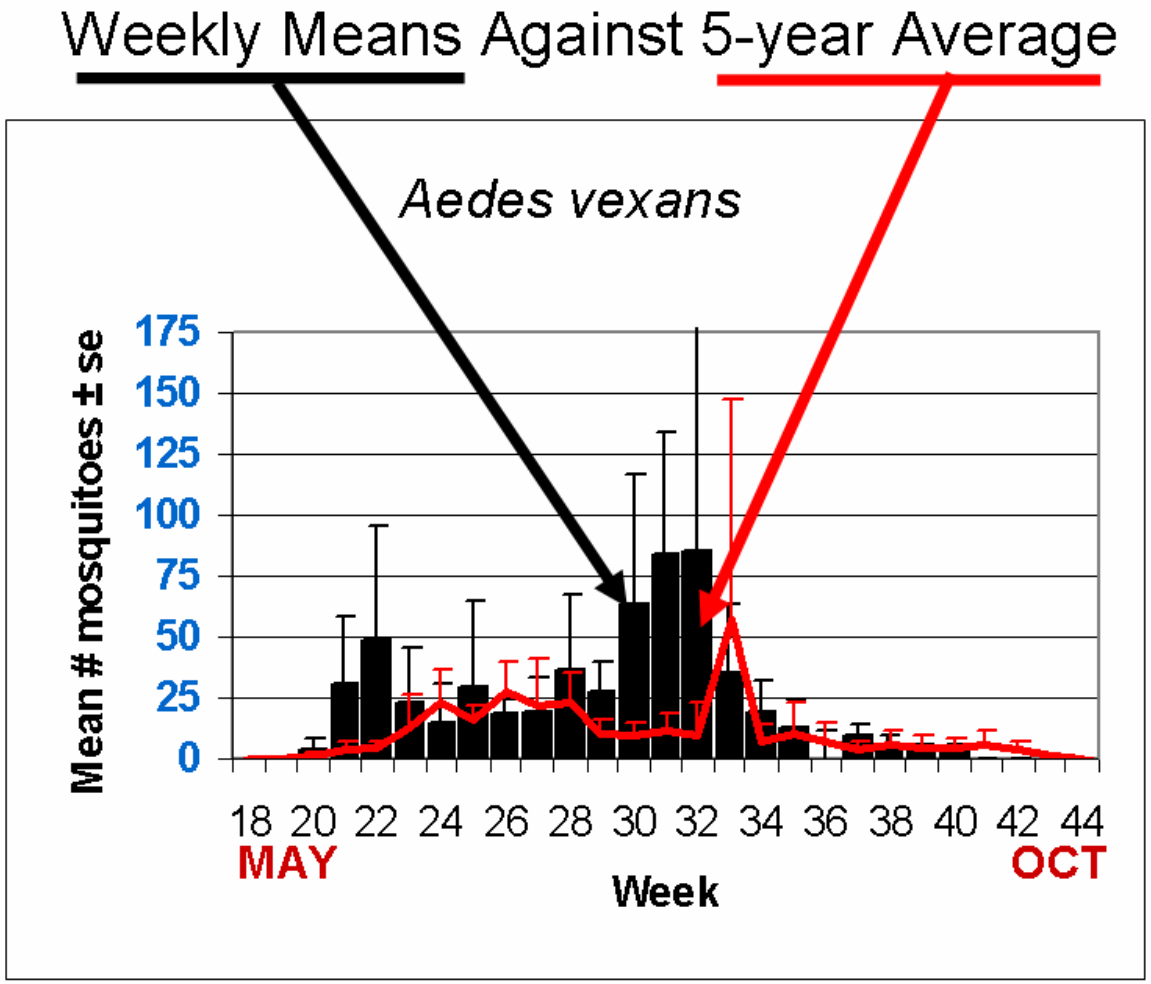




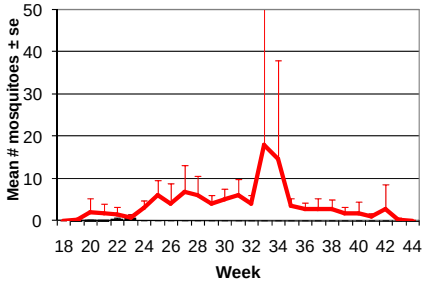
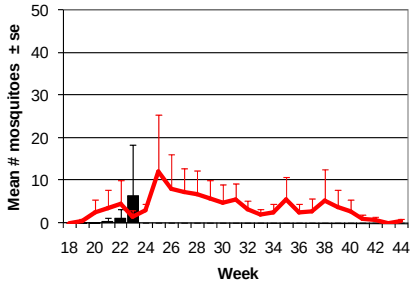
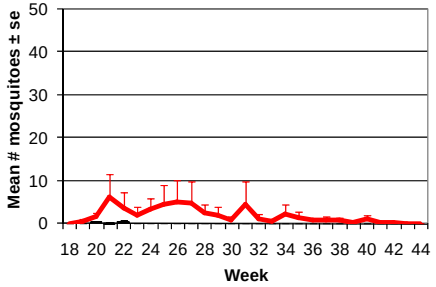
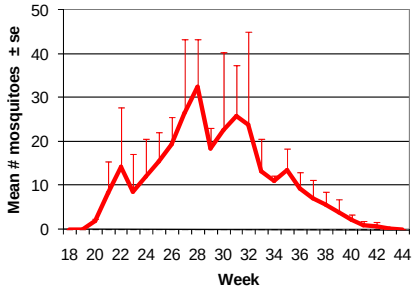
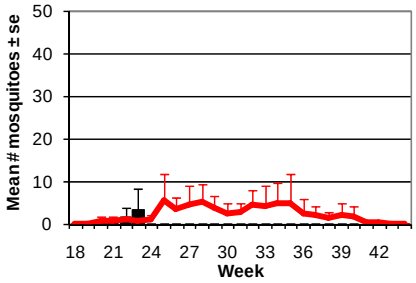
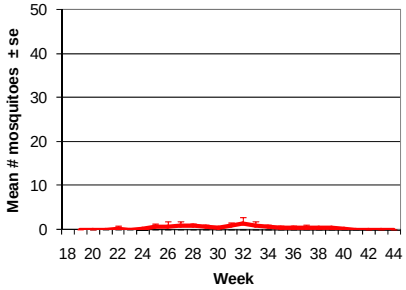
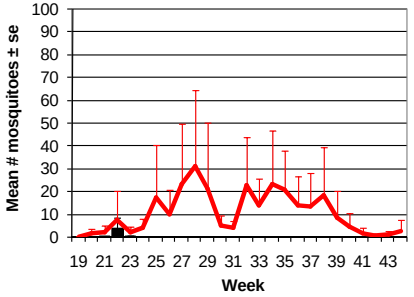
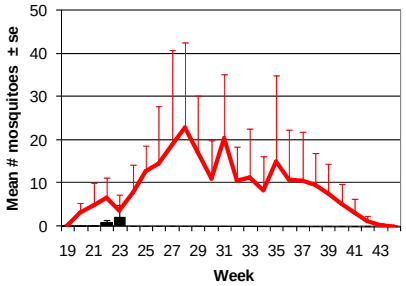
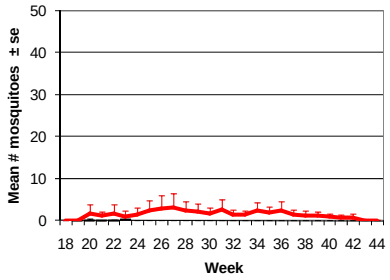
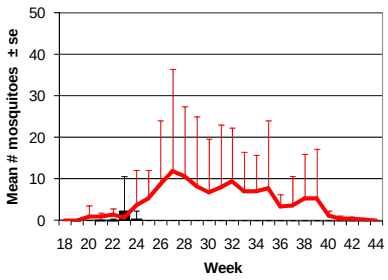


The figures show the average maximum temperature, minimum temperature and precipitation deviations from 30 year averages. Current data is from the Hillsborough NJ weather station (a station close to central NJ which recorded all three parameters and was available online at the NJ state climatologist) 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.

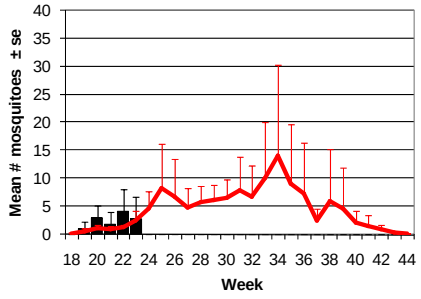
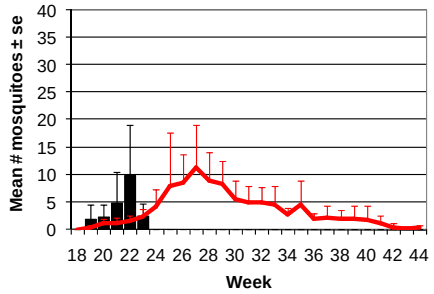
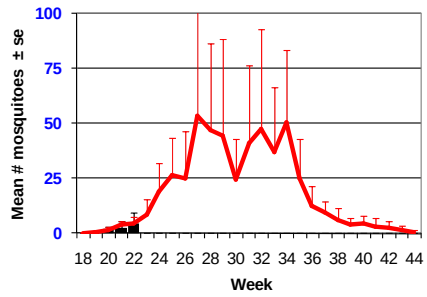
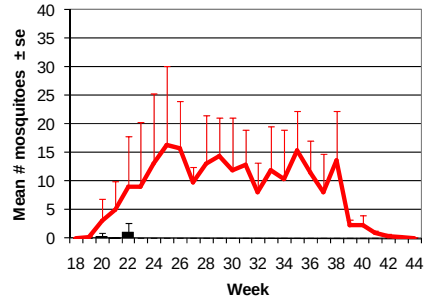
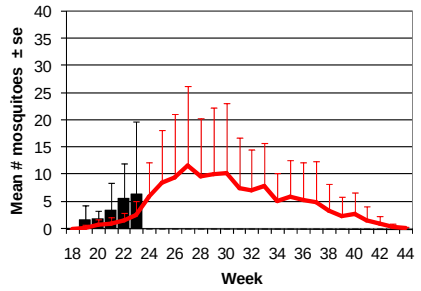
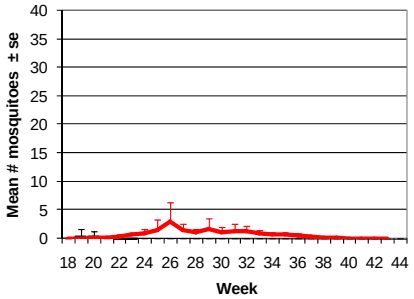
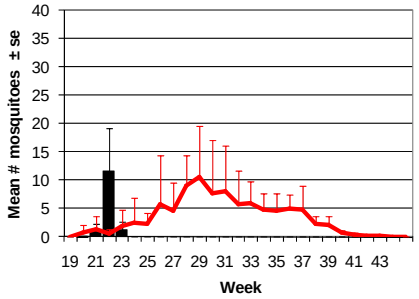
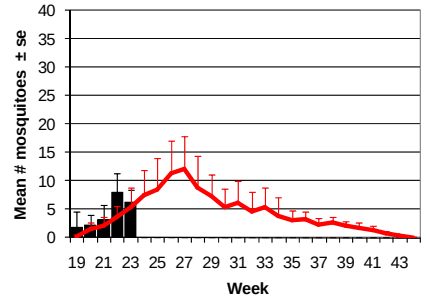
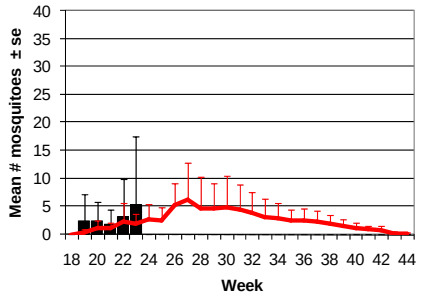
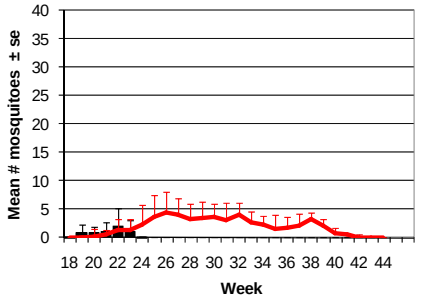
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example 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 Week 23 are from Atlantic, Burlington, Camden, Essex, Hudson, Monmouth, Morris, Ocean, Somerset, and Sussex counties. Note: County data is sent in at a variety of times during the week.



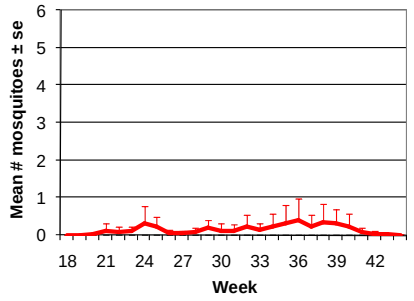
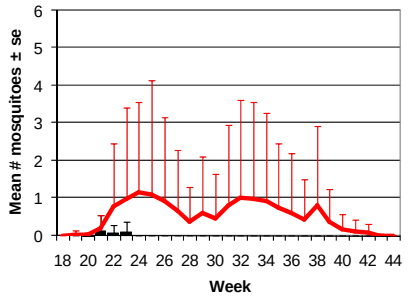
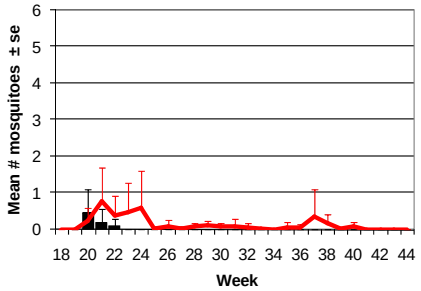
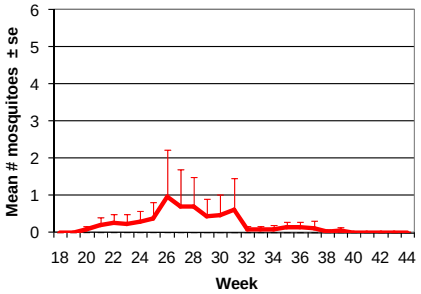
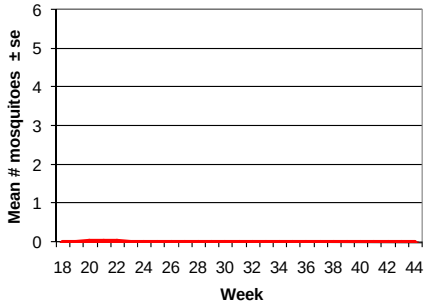
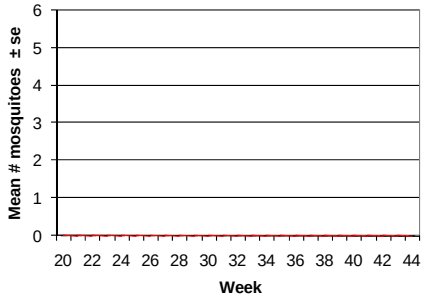
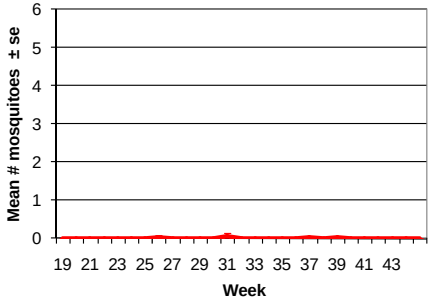
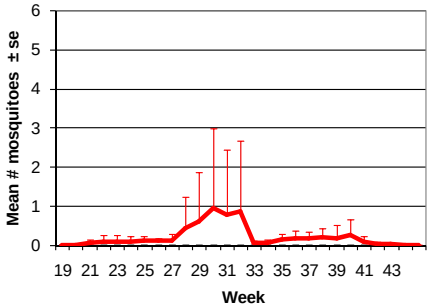
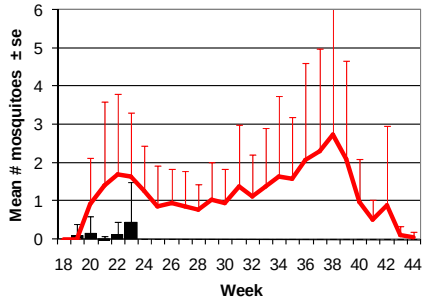
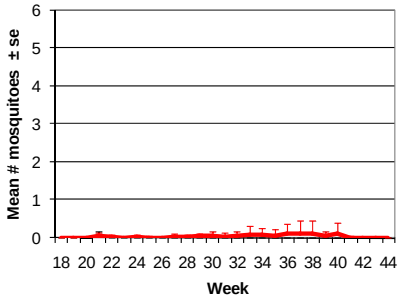
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* populations have shown a significant increase from the previous week in the Coastal and New York Metro regions. Other areas of the state may see localized populations, dependent upon rainfall history. While temperature-dependent emergences may have been attenuated by the cooler than average May temperatures, recent warmer-than-average weather should reverse that trend and make climate factors favorable for more *Ae. vexans* on the wing.	

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

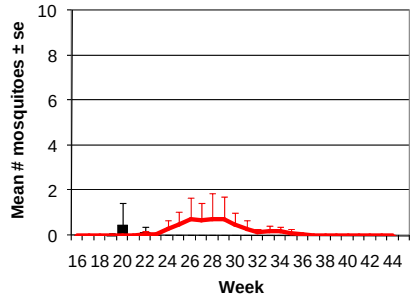
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culex* species (*Cx. pipiens, restuans,* and *salinarius*) that are emerging now are more likely to be *Culex restuans*. An unusually high number of adults have occurred in both the Coastal and the Northwestern Rural areas during week 22 (unusually for a permanent water species that tends to be more predictable). High numbers in both regions were not limited to single traps, suggesting the influence of a wide-ranging factor such as climate. Other populations throughout the state appear to be at or slightly greater than historical trends.	

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

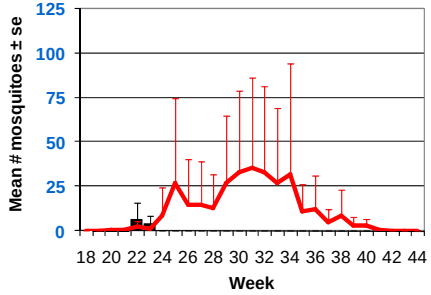
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Culiseta melanura* populations appear to be lower than historical trends, and this pattern is similar to the one seen in the resting box collections for the Vector Surveillance program. Lower early populations may indicate lower EEE activity as this is the generation that will produce the population during the latter and transmissible portion of the EEE season. This mosquito, however, always demands a close surveillance due to the virulence of eastern equine encephalitis.	

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

Agricultural



Coastal



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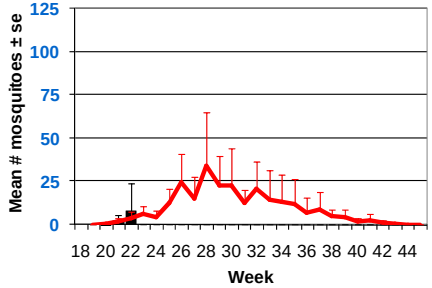
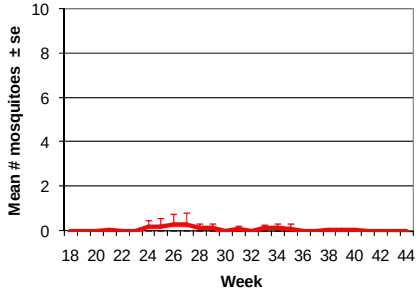
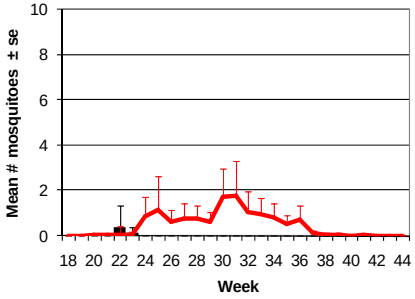


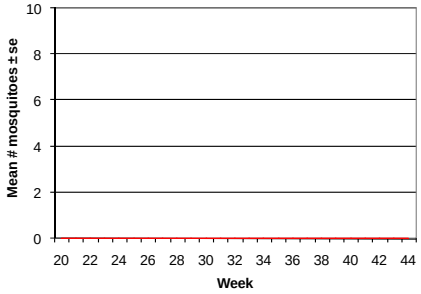
Delaware River Basin



New York Metro



North Central Rural



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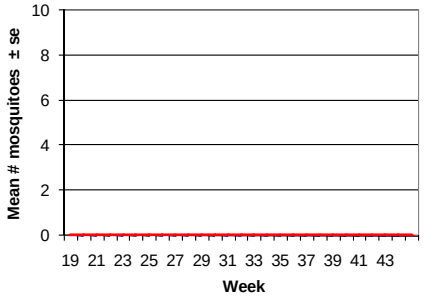
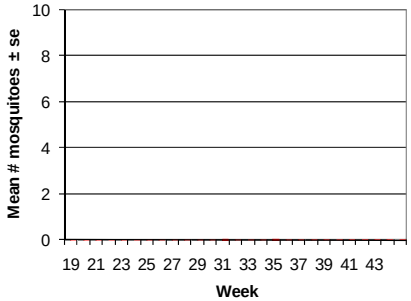
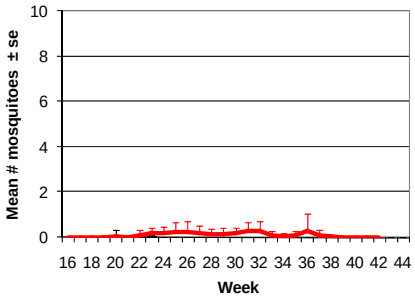


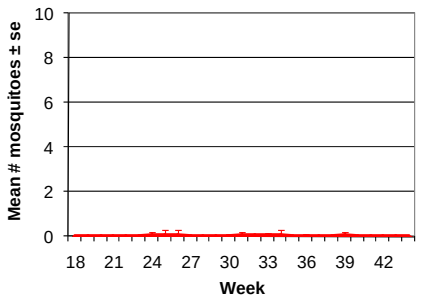
Philadelphia Metro



Pinelands



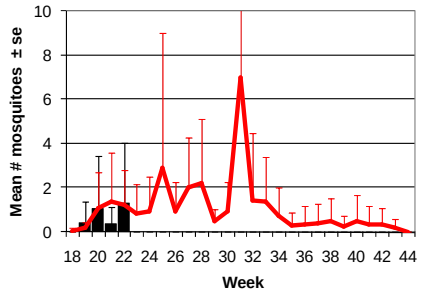
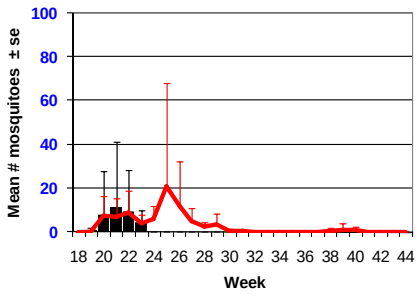
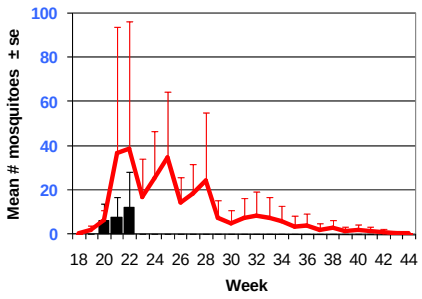
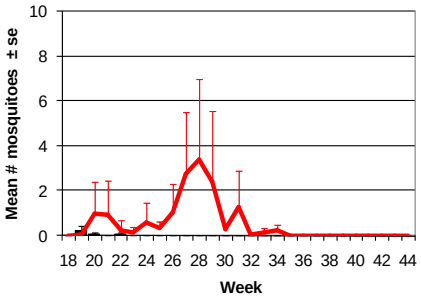
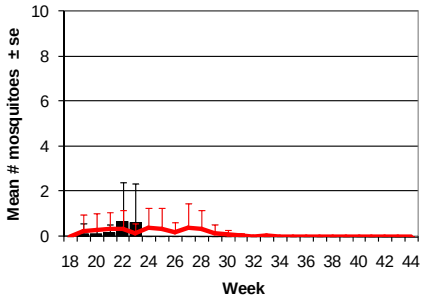
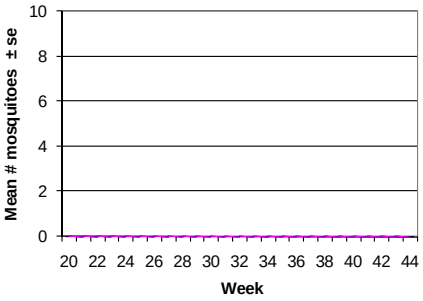
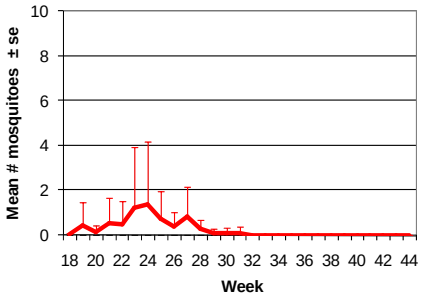
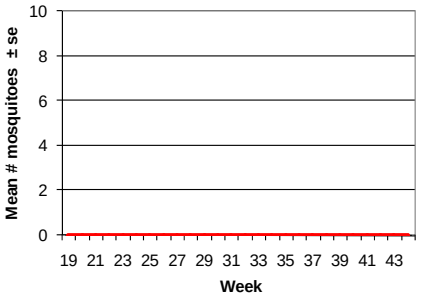
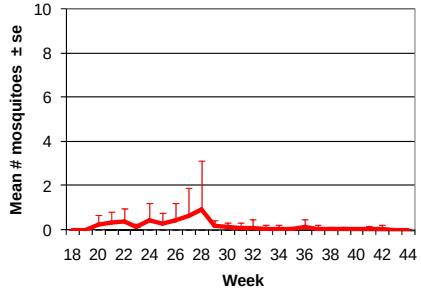
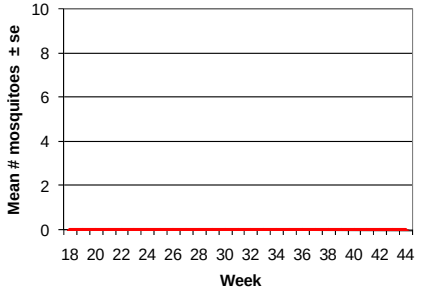
Suburban Corridor



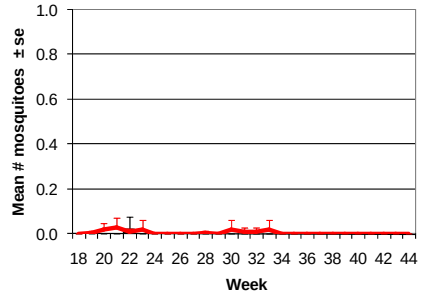
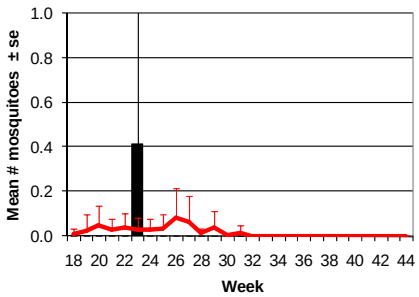
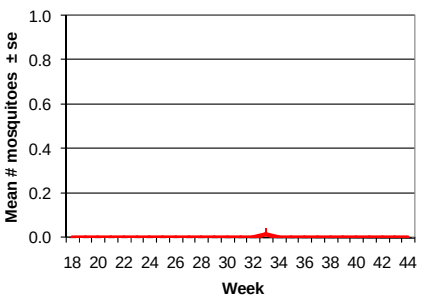
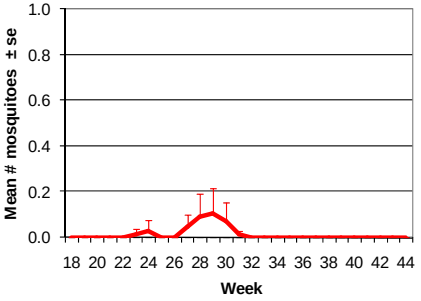
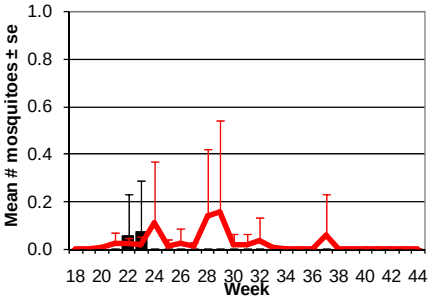
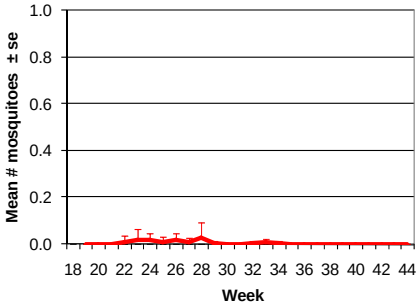
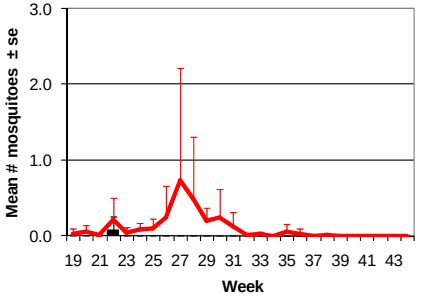
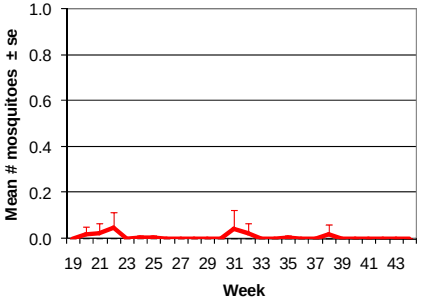
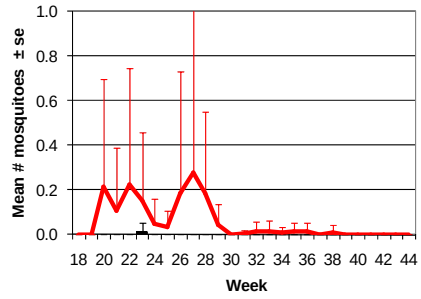
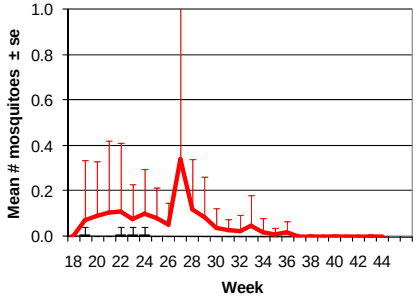
Comments

The data suggests that the season's initial, small emergence of *Aedes sollicitans* has occurred in the Coastal and Delaware Bayshore. This floodwater species is affected by both rainfall and high lunar tides. The previous full moon occurred on the 20th of May. Emergence from eggs laid in upland habitat that were submerged from this past high tide should have already happened.

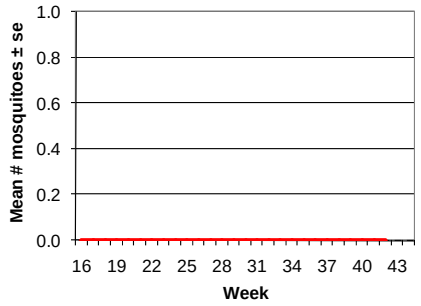
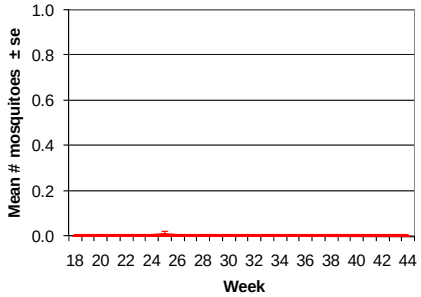
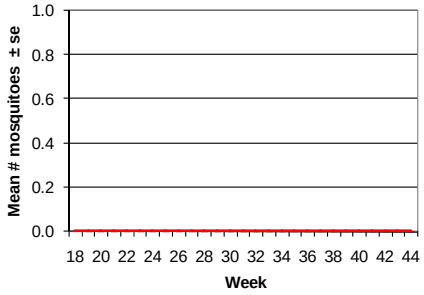
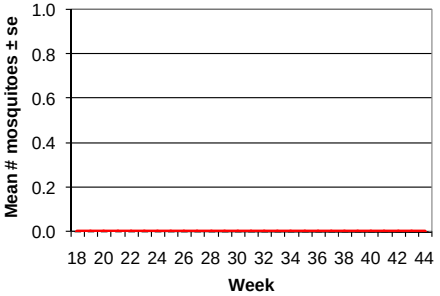
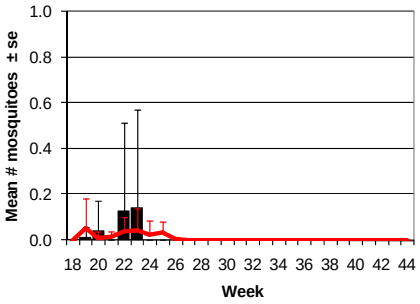
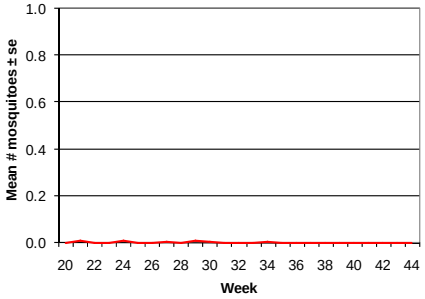
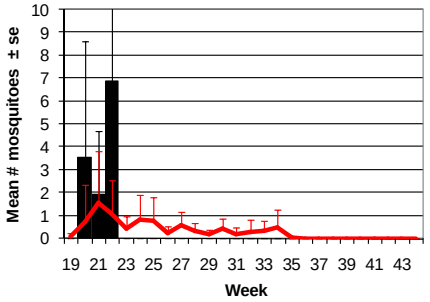
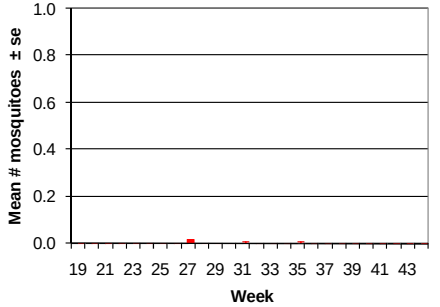
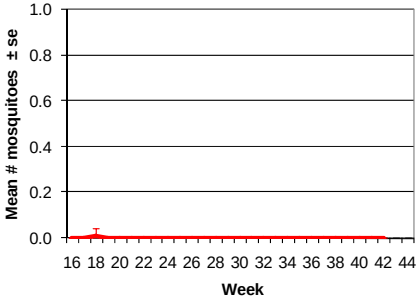
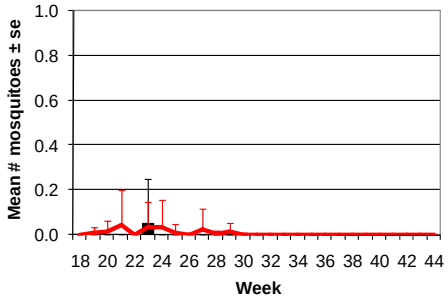
Aedes cantator- Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* populations have been reported to be in significant numbers in the southern shore areas of New Jersey. This aggressive mosquito has shown up in most areas that it is normally found. Numbers are reduced in the Delaware River Basin region as well as in the Pinelands. As with *Ae. sollicitans*, this species responds to the flooding of salt marshes by either storms or lunar tides.	

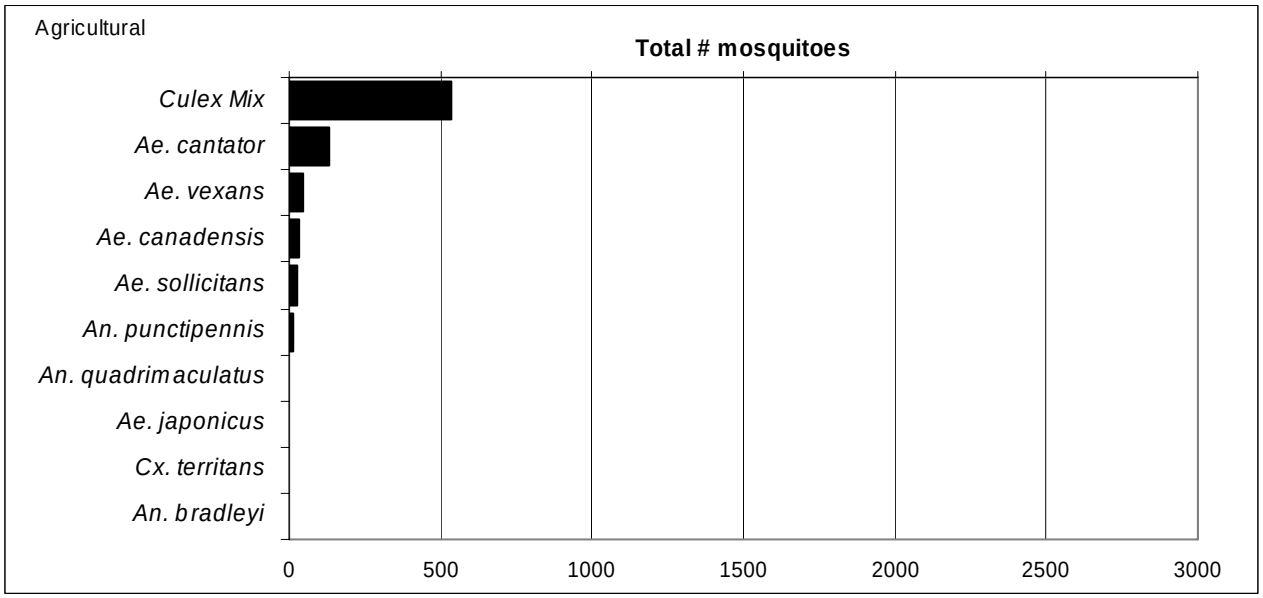
Aedes sticticus – Early Spring Species
Univoltine Aedine (*Ae. canadensis* Type)

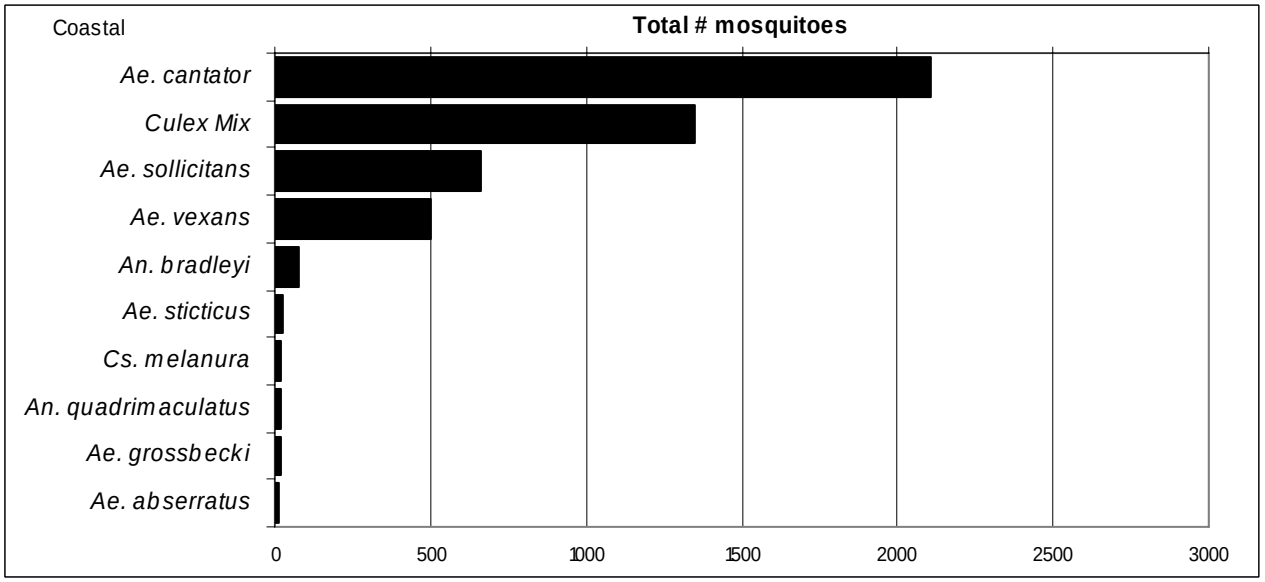
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sticticus* is an aggressive biter normally found in association with shaded pool along side of floodplains. Although classified as a univoltine *Aedine*, historical data suggests that some regions can experience later-season emergences. A large number of *Ae. sticticus* from one trap contributed to the significant spike in numbers observed in the Coastal region.	

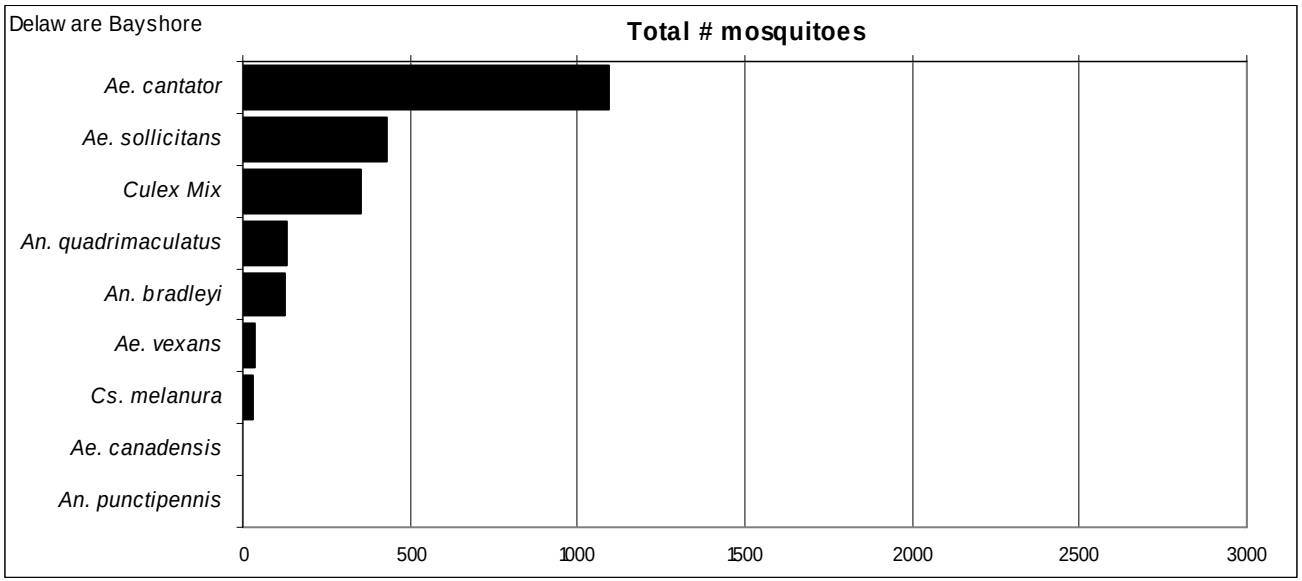
Aedes stimulans – Northern *Aedes* Species
Univoltine Aedine (*Ae. stimulans* Type)

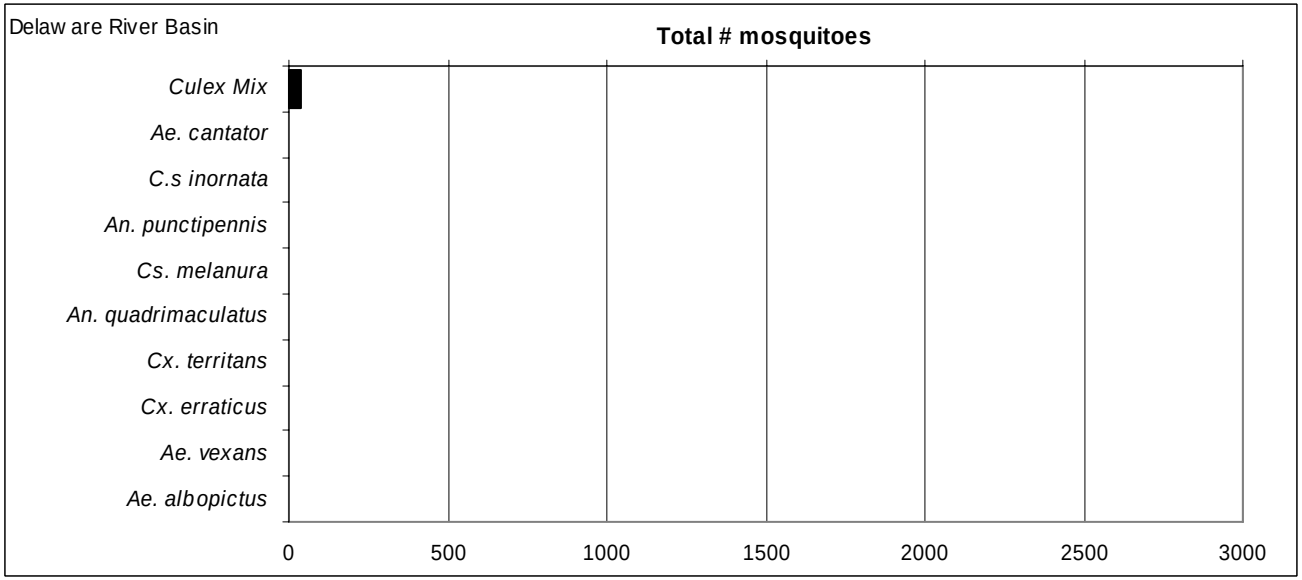
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		The cold-tolerant *Aedes stimulans* is an aggressive biter that is found primarily in the northern portions of the state. Normally high numbers are not seen in this report as this mosquito is often on the wing before the beginning of the surveillance season. However, significant populations are occurring in the Northwestern Region.	

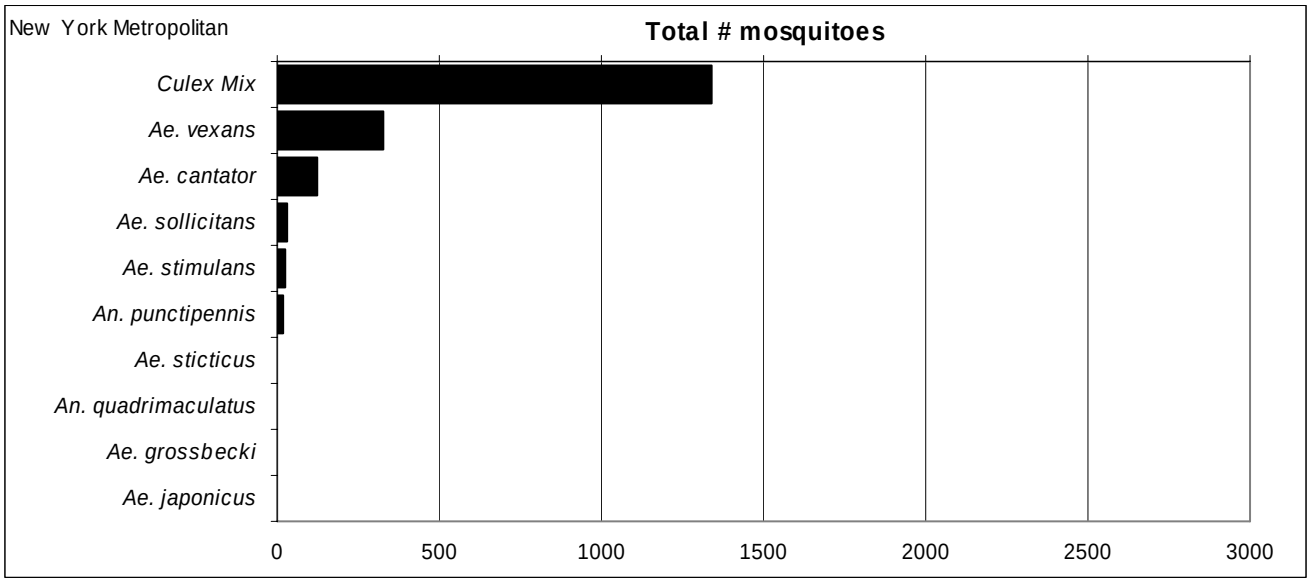
Top Ten Mosquito Species/Region

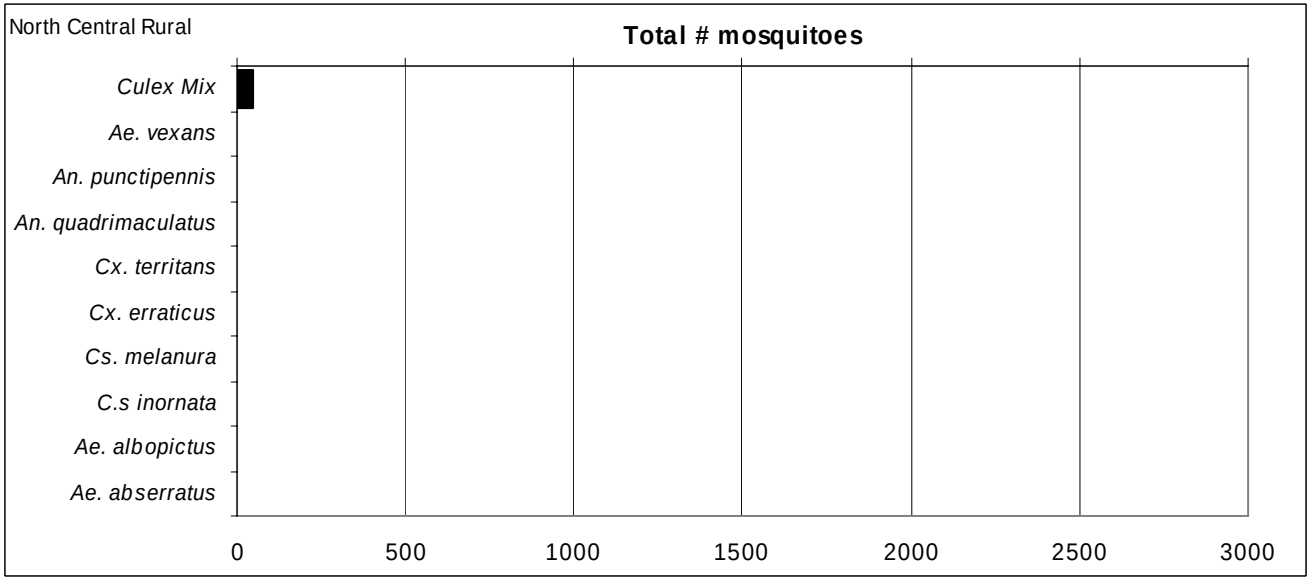


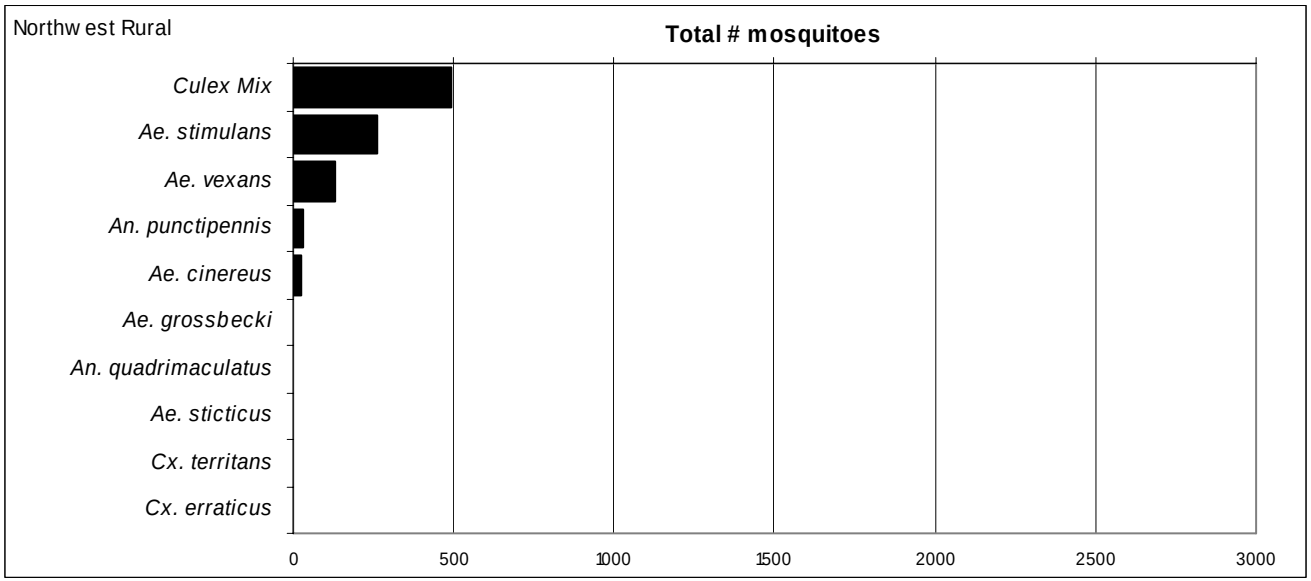


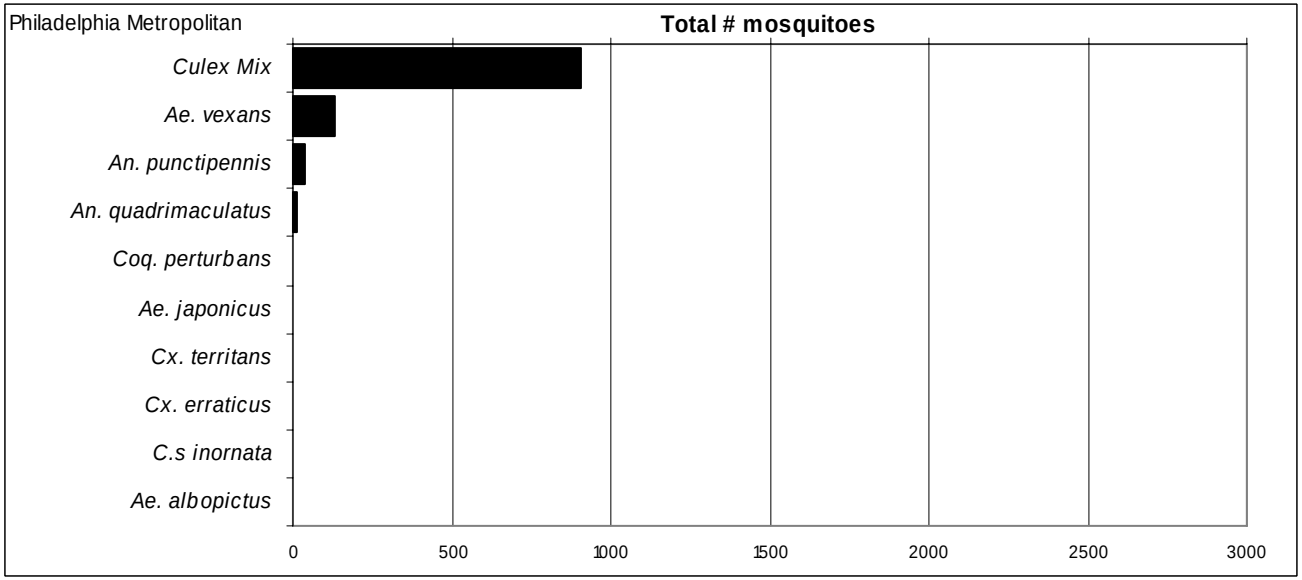

Delaware Bayshore
Total # mosquitoes
Ae. cantator
Ae. sollicitans
Culex Mix
An. quadrimaculatus
An. bradleyi
Ae. vexans
Cs. melanura
Ae. canadensis
An. punctipennis
0
500
1000
1500
2000
2500
3000

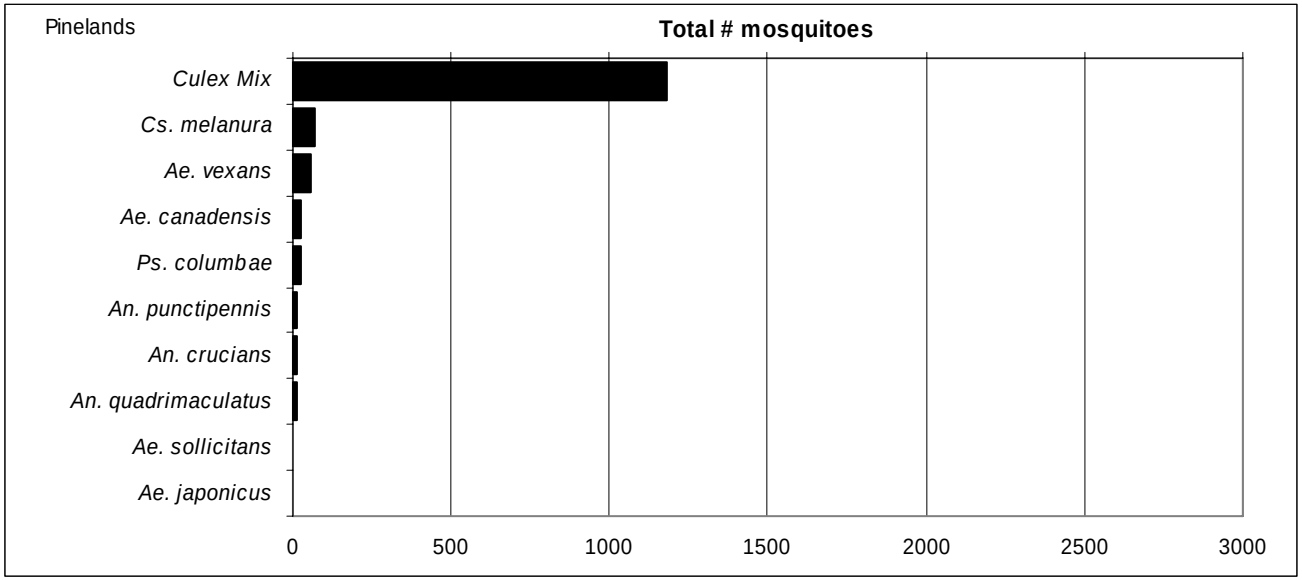

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. cantator
C.s inornata
An. punctipennis
Cs. melanura
An. quadrimaculatus
Cx. territans
Cx. erraticus
Ae. vexans
Ae. albopictus
0
500
1000
1500
2000
2500
3000

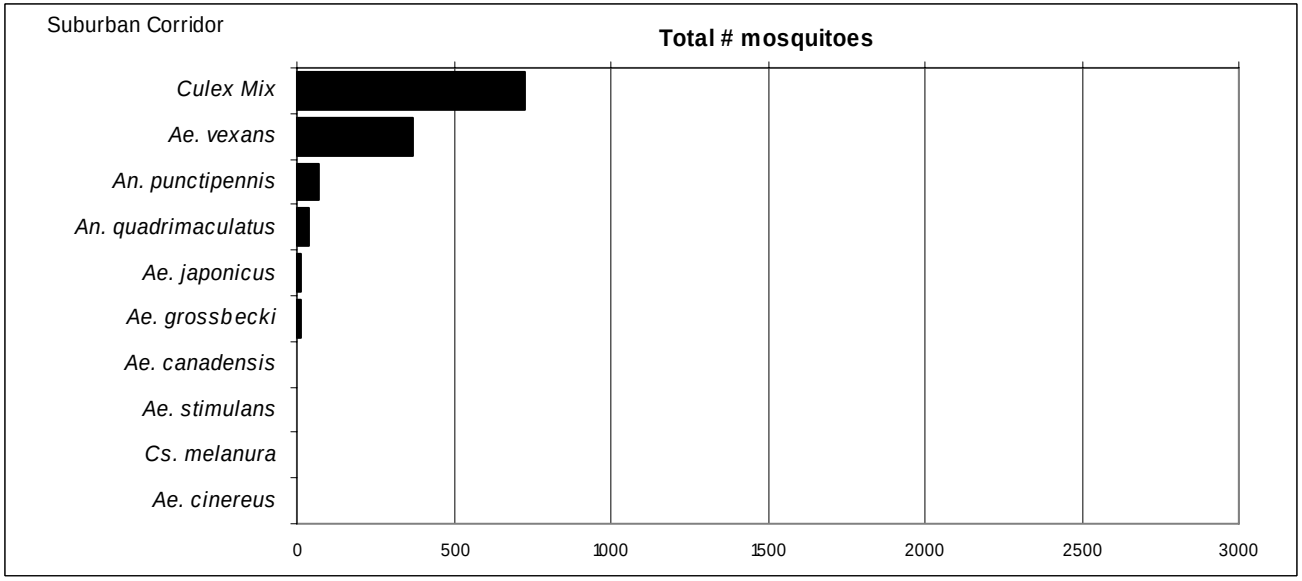

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Ae. stimulans
An. punctipennis
Ae. sticticus
An. quadrimaculatus
Ae. grossbecki
Ae. japonicus
0
500
1000
1500
2000
2500
3000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Cx. territans
Cx. erraticus
Cs. melanura
C.s inornata
Ae. albopictus
Ae. abserratus
0
500
1000
1500
2000
2500
3000


Northw est Rural
Total # mosquitoes
Culex Mix
Ae. stimulans
Ae. vexans
An. punctipennis
Ae. cinereus
Ae. grossbecki
An. quadrimaculatus
Ae. sticticus
Cx. territans
Cx. erraticus
0
500
1000
1500
2000
2500
3000


Philadelphia Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ae. japonicus
Cx. territans
Cx. erraticus
C.s inornata
Ae. albopictus
0
500
1000
1500
2000
2500
3000


Pinelands
Total # mosquitoes
Culex Mix
Cs. melanura
Ae. vexans
Ae. canadensis
Ps. columbae
An. punctipennis
An. crucians
An. quadrimaculatus
Ae. sollicitans
Ae. japonicus
0
500
1000
1500
2000
2500
3000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Ae. japonicus
Ae. grossbecki
Ae. canadensis
Ae. stimulans
Cs. melanura
Ae. cinereus
0
500
1000
1500
2000
2500
3000