RUTGERS
New Jersey Agricultural Experiment Station

NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 29 May to 4 June 2011, CDC Week 22

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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.

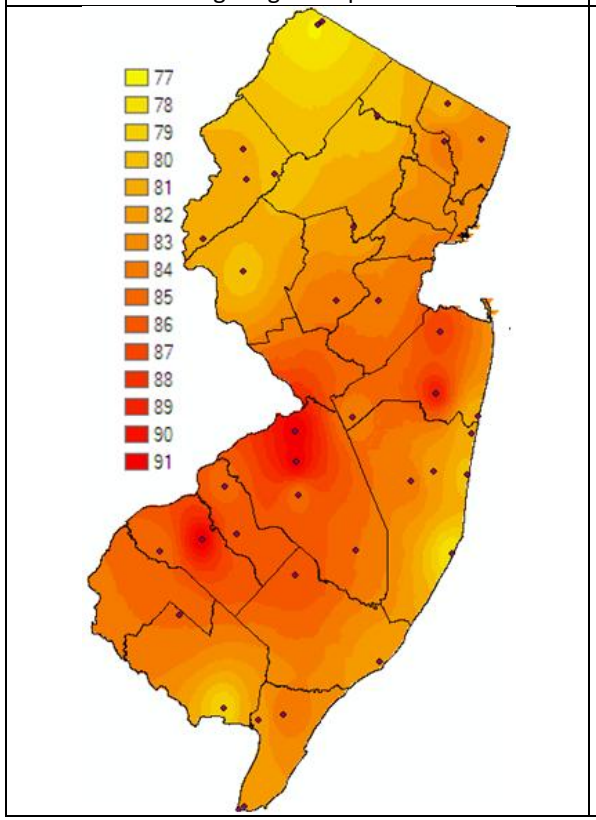
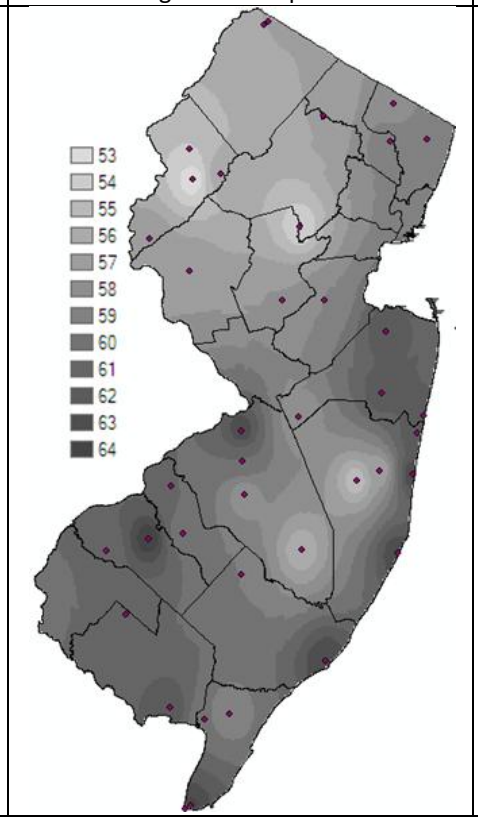
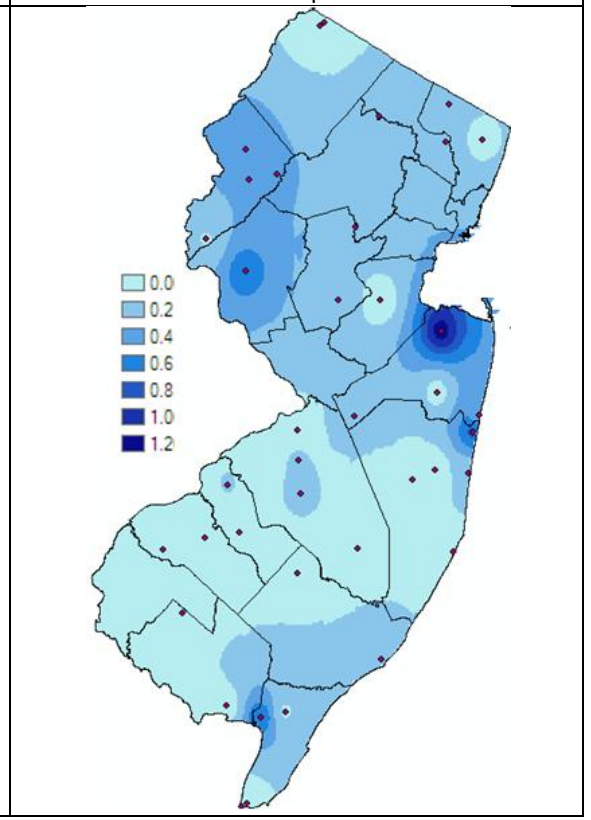
Summary Table – Week 22

	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	1.07	1.34	0	1.55	3.50	0	0.00	0.05	0	0.05	0.08	0
Coastal	2.32	3.74	0	1.86	4.60	0	0.03	0.29	0	9.90	4.30	3
Delaware Bayshore	1.66	2.49	0	5.43	7.97	0	1.03	2.23	0	2.20	2.11	1
Delaware River Basin	0.00	4.34	0	0.00	3.12	0	0.00	0.08	0	0.00	<0.01	0
New York Metro	1.63	1.93	0	2.94	4.76	0	0.00	0.12	0	0.43	0.29	1
North Central Rural	0.00	0.21	0	0.00	1.02	0	0.00	<0.01	0	0.00	0.00	0
Northwest Rural	9.46	7.55	1	0.69	0.82	0	0.21	0.01	4	0.00	0.00	0
Philadelphia Metro	7.79	4.51	2	3.25	4.96	0	1.00	0.60	2	0.00	0.00	0
Pinelands	0.77	1.29	0	1.60	3.09	0	0.16	0.23	0	0.12	0.03	4
Suburban Corridor	1.13	1.83	0	0.82	2.46	0	0.00	0.24	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 in the increase column denote increases from an historic zero and thus no value can be appropriately given.

State Summary: Warm weather has continued to accelerate mosquito populations in certain areas. Notably, *Ae. sollicitans* in the Coastal and Delaware Bayshore regions and *Ae.* vexans in the Northwest Rural and Philadelphia Metro regions are showing higher than normal population levels in areas where they are normally abundant. *Coquillettidia perturbans* continue to make an early presence known.

Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

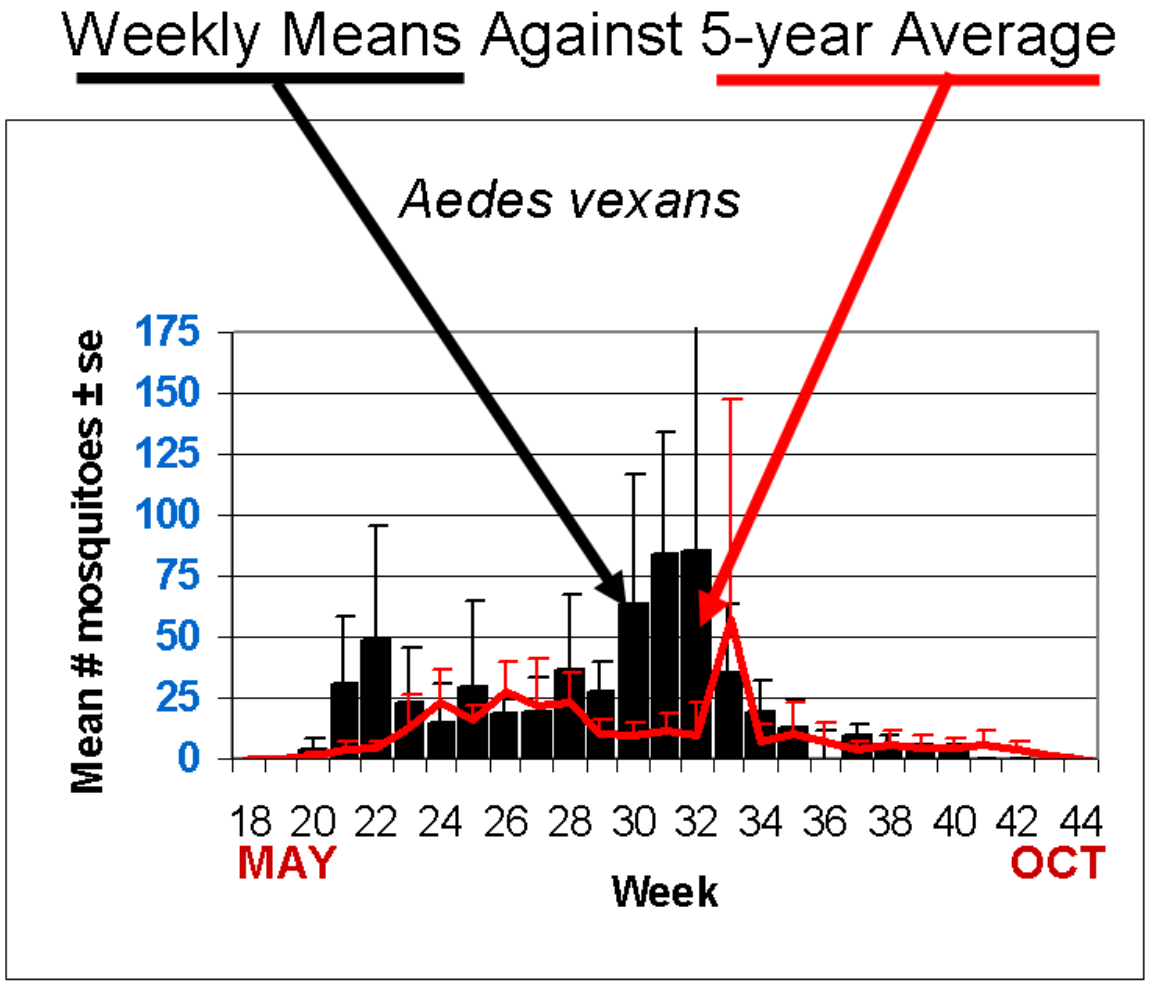
The three figures show the interpolation of average maximum and minimum temperature and total precipitation from 1 June to 10 June, 2011 in New Jersey. Data points are from about 35 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.

In the beginning of June, average high temperatures were highest through the suburban corridor and the Metropolitan areas. Average low temperatures were highest along the coastal region (moderating effects of large bodies of water – i.e., the Atlantic Ocean) and interior toward the Delaware River. The northern portion of New Jersey continued to experience higher rainfall, although total rainfall for most of the state was less than 1 inch. In general, it was warmest in the urban/suburban areas during the day, warmer along the coast at night and wetter in the north.

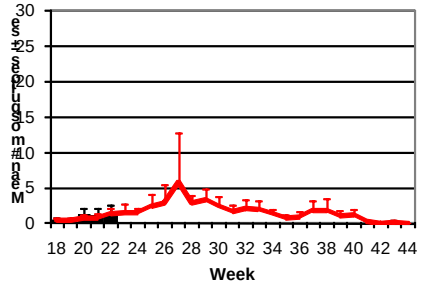
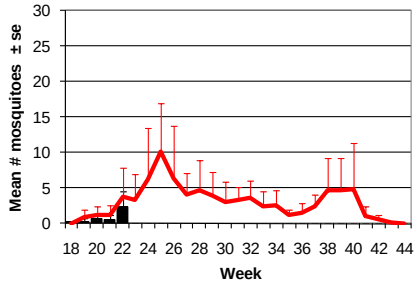
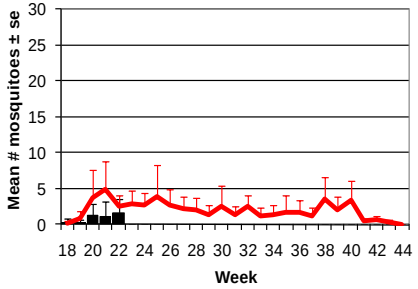
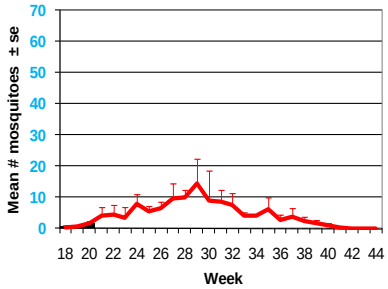
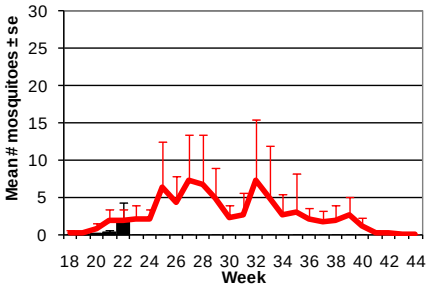
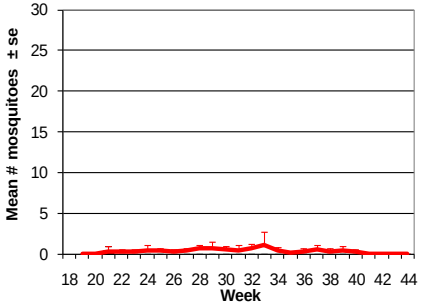
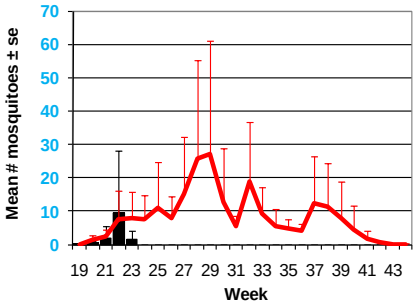
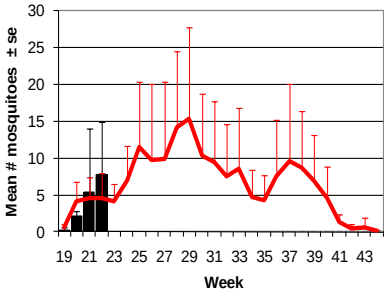
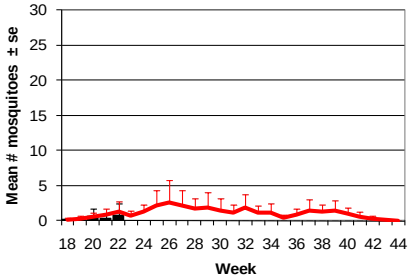
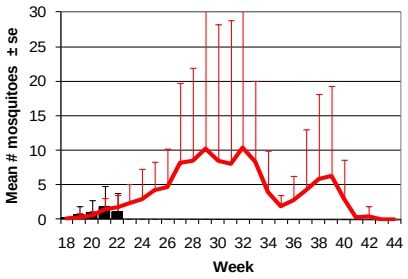
NJ Weather & Climate NETWORK

ONJSC at Rutgers University

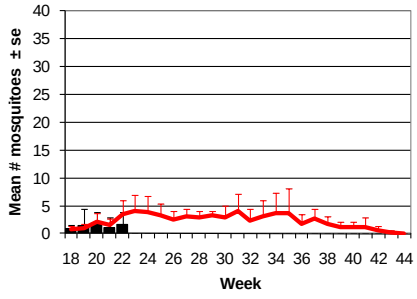
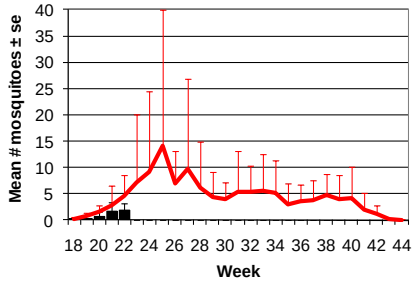
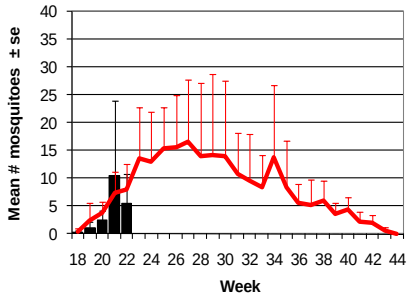
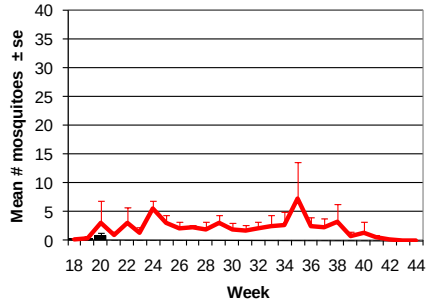
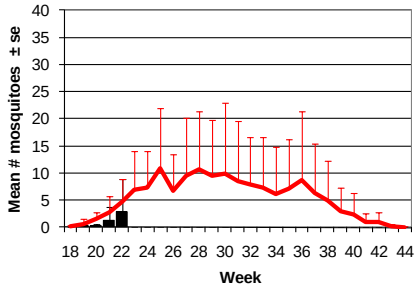
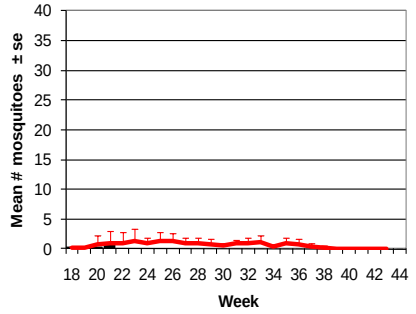
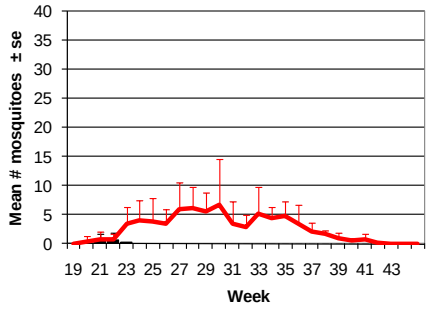
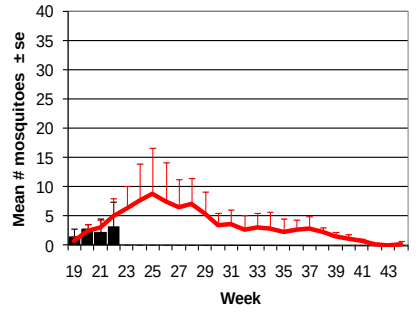
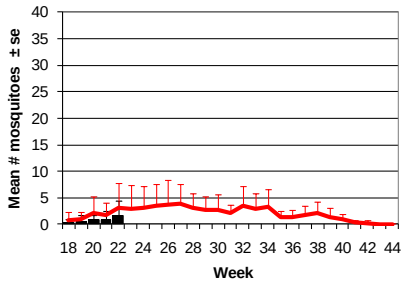
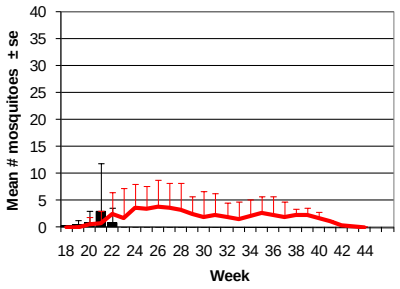
The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example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



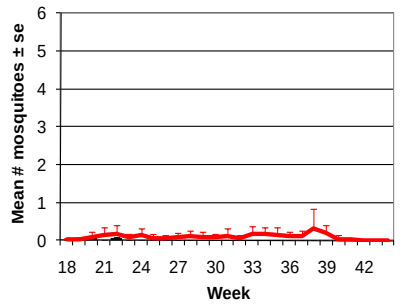
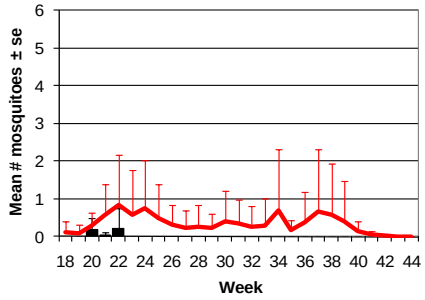
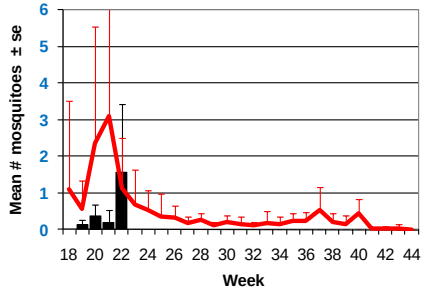
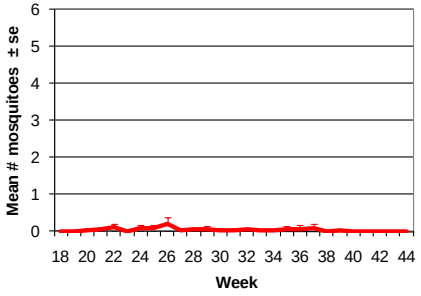
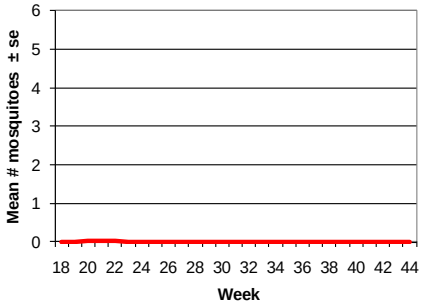
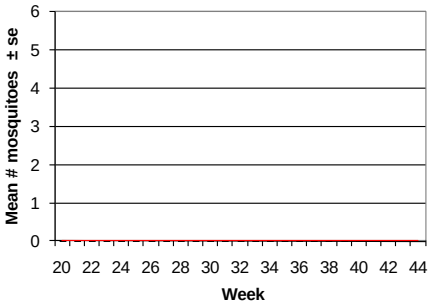
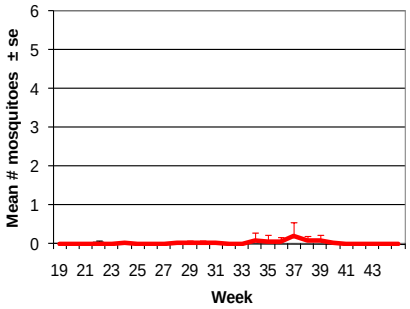
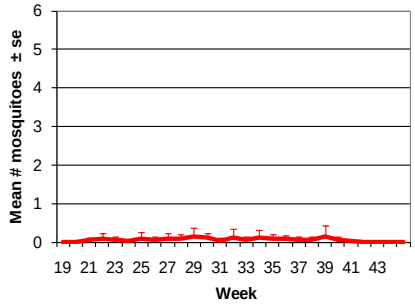
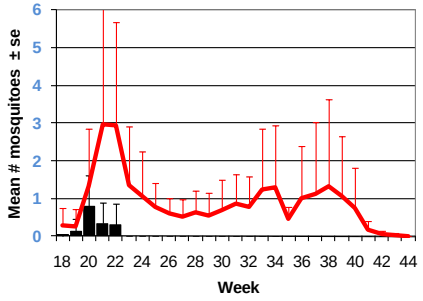
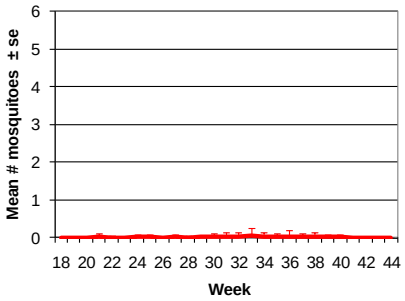
Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* population levels continue to track historical abundances in most regions. Significant populations can often be seen in those regions that encourage large numbers, such as flooding areas in the Northwestern Rural or dredge spoils in the Delaware River Basin. This species will take advantage of any flooding areas and is often the number one species of concern for many counties.	

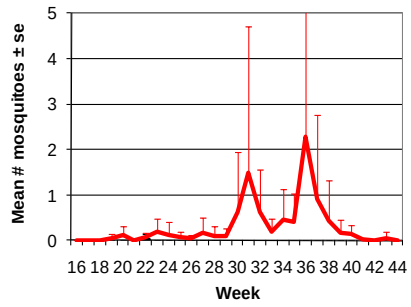
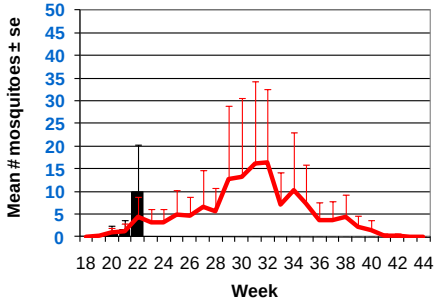
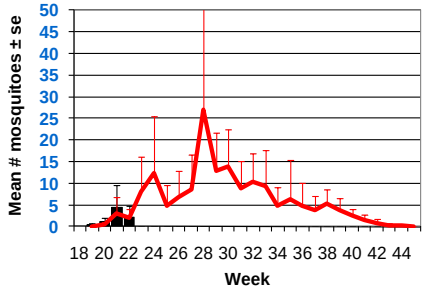
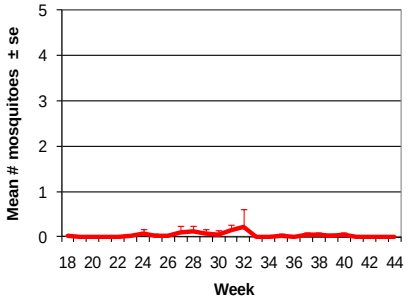
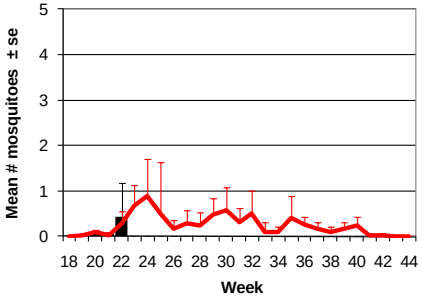
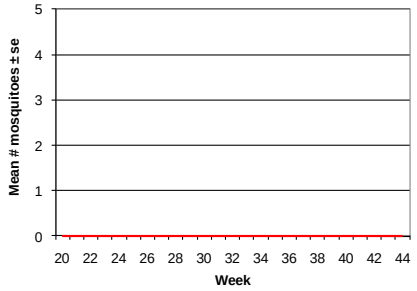
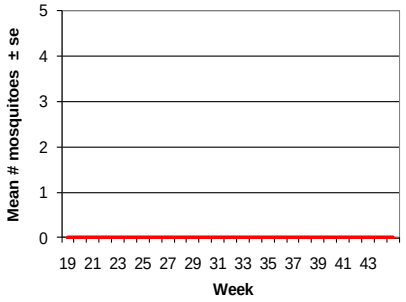
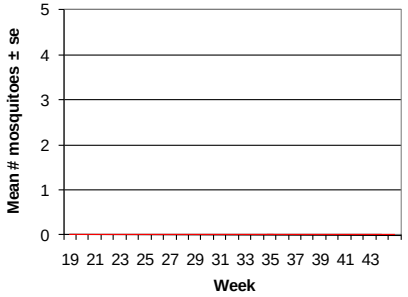
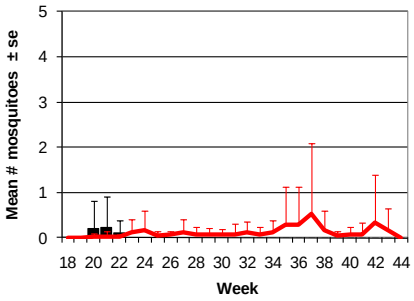
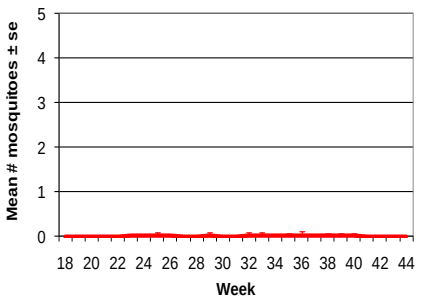
Culex Mix – Permanent Water Species
Multivoltine *Culex/Anopheles* (*Cx. pipiens* Type)

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. Populations appear to be tracking historical levels in all regions. Being permanent water species, population levels are often fairly stable. Last year, it took considerable drought conditions to reduce population abundances away from historical values.	

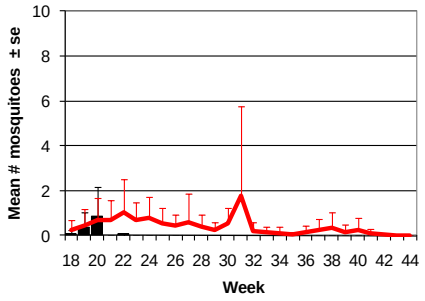
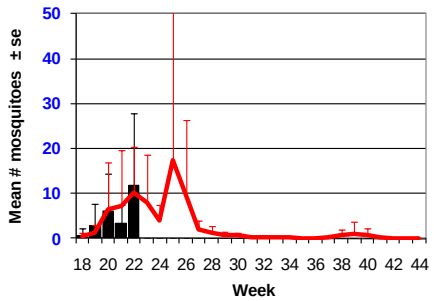
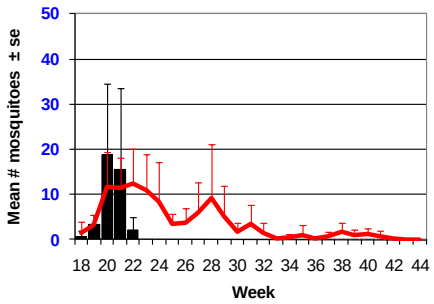
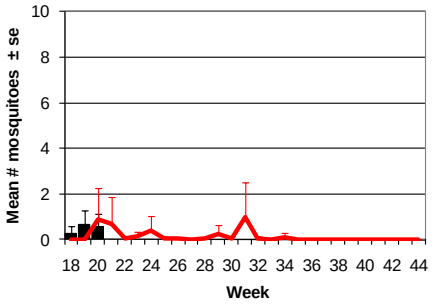
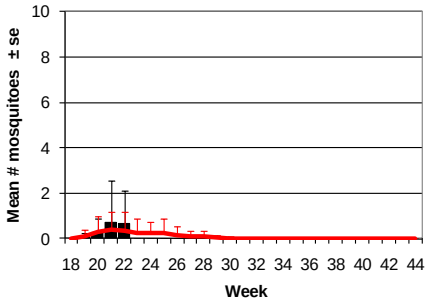
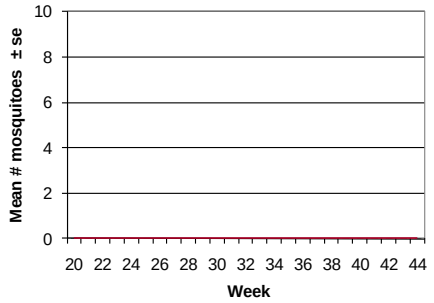
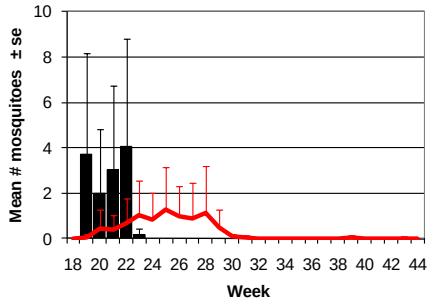
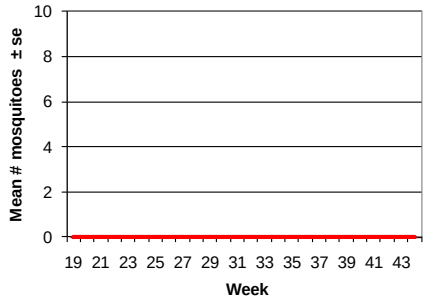
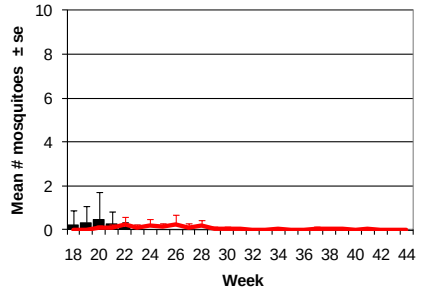
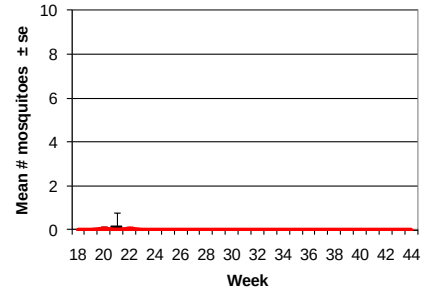
Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

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. The population abundances for this species appear to be at or under historical levels. Monitoring for EEE virus in resting box populations have begun. Generally, virus is found almost every year in this species, ranging from a few pools to over one hundred pools in very active years. Larval control can be difficult as this species inhabits “crypts” or areas found underneath bog trees, with entrances formed by small holes.	

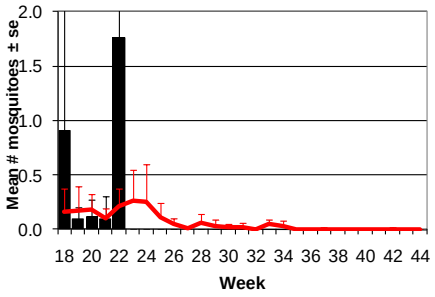
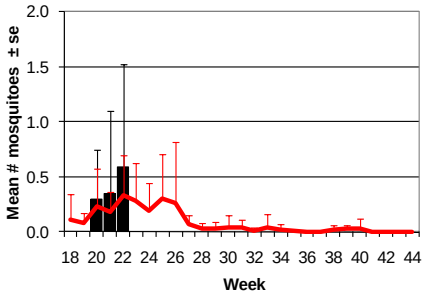
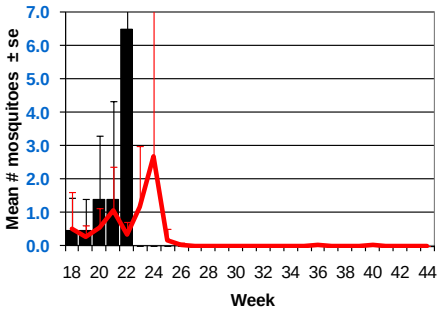
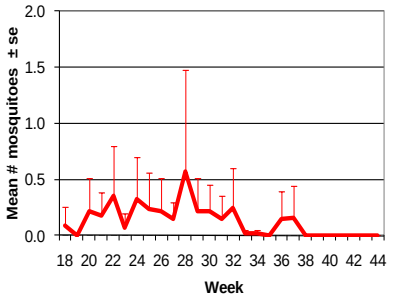
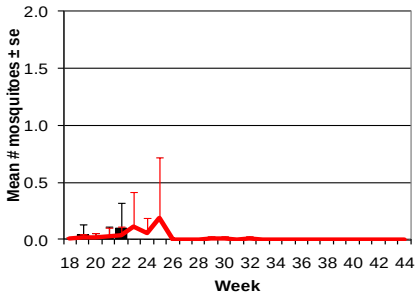
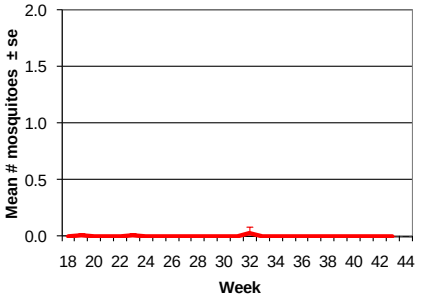
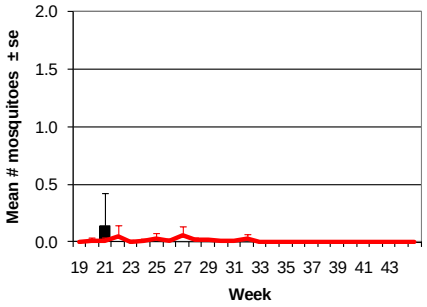
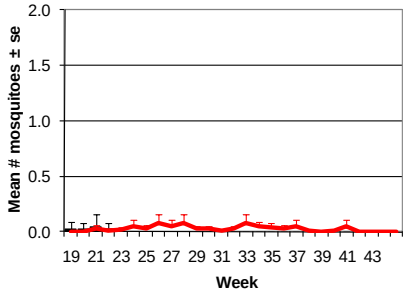
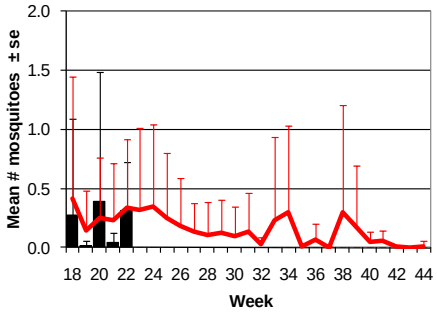
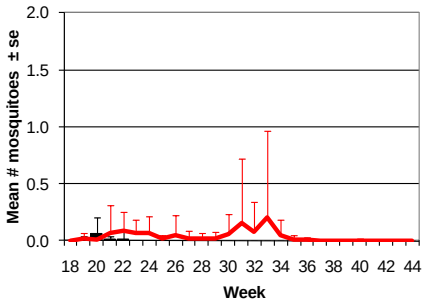
Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes sollicitans* populations are at or higher than recent historical values in the Coastal and Delaware Bayshore regions. Other areas, such as the New York Metro or Pineland regions are also showing numbers around historical values. This far-ranging species can wander inland, causing complaints far from the natal areas. Next Full Moon: 15 June.	

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

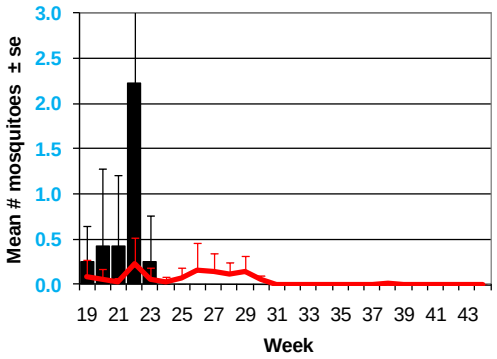
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes cantator* populations continue to be locally abundant in the Coastal and Delaware Bayshore regions as well as the Northwestern Rural region. This species generally comes out earlier than its competitor, *Ae. sollicitans*. *Ae. cantator* has a wide range of salt tolerances, which is why it can be seen in more regions than *Ae. sollicitans* as it exploits habitats of varying saline conditions, such as roadway runoffs that contain salt from winter road use.	

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

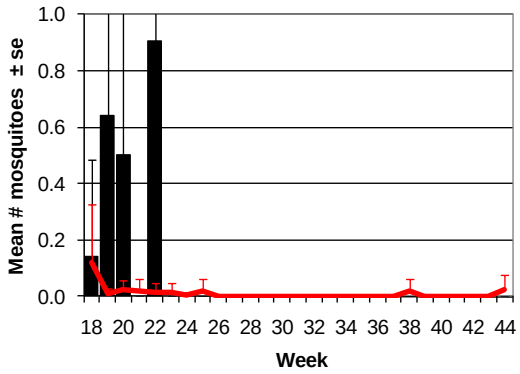
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes canadensis canadensis* abundances were particularly noteworthy in the Agricultural and Delaware Bayshore regions. Responding especially to repeated spring flooding conditions, this species can be found in many habitats outside of temporary flooded depressions. *Aedes canadensis canadensis* is an opportunistic blood feeder, but an inefficient vector of West Nile.	

Other Species – Early season species we graphed last week continue to show high abundances in certain regions. *Aedes sticticus* is a floodwater species often associated near river floodplains where increased spring waters contribute to their emergence. They can also emerge later in the season, but usually at lower abundances. This season shows high abundances in the Northwestern Rural and the Philadelphia Metro regions. *Aedes stimulans,* the Snow Pool mosquito, is one of the first species on the wing in New Jersey and will disappear after mid-summer. *Aedes cinereus* is found throughout New Jersey but does not apparently come to light traps readily. As with *Ae. stimulans, Ae. cinereus* is highly cold tolerant, and most abundant in the Northwest Rural region.

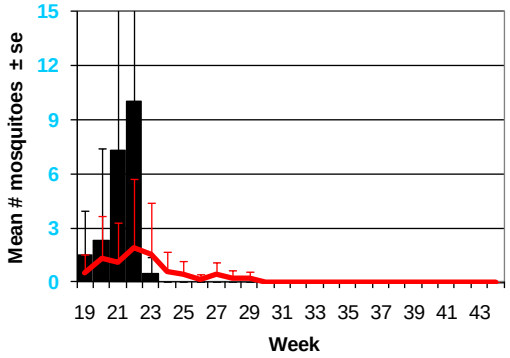
Northwest Rural – *Aedes sticticus* Spring Species, Univoltine Aedine, *Ae. canadensis canadensis* type.



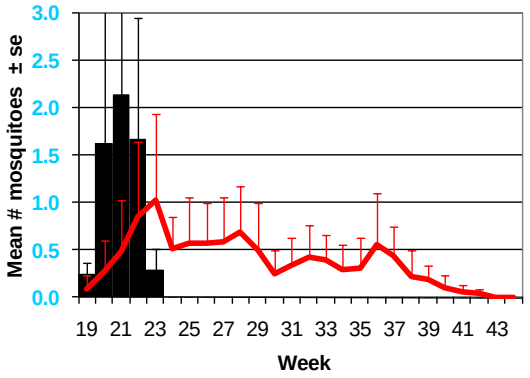
Philadelphia Metro – *Aedes sticticus* Spring Species, Univoltine Aedine, *Ae. canadensis canadensis* type.



Northwest Rural – *Aedes stimulans* Spring Species, Univoltine Aedine, *Ae. stimulans* type.



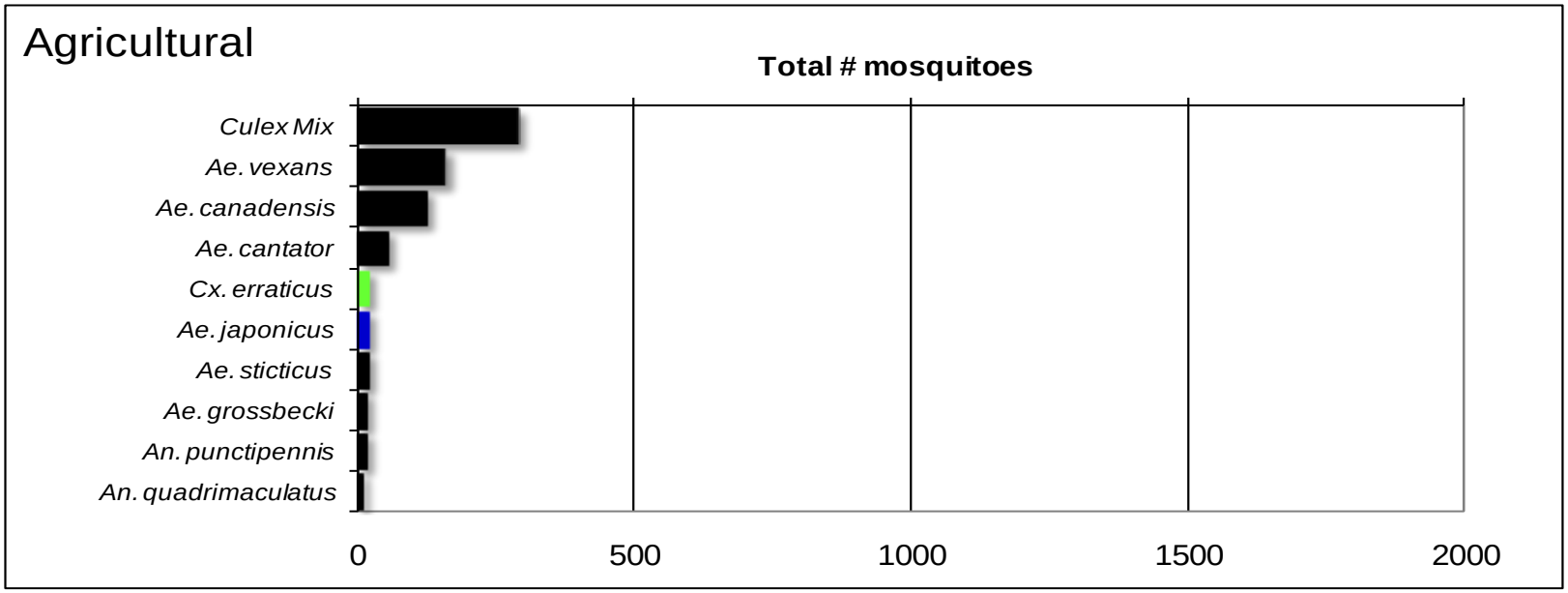
Northwest Rural – *Aedes cinereus*, Spring Species, Univoltine Aedine, *Aedes canadensis canadensis* type.

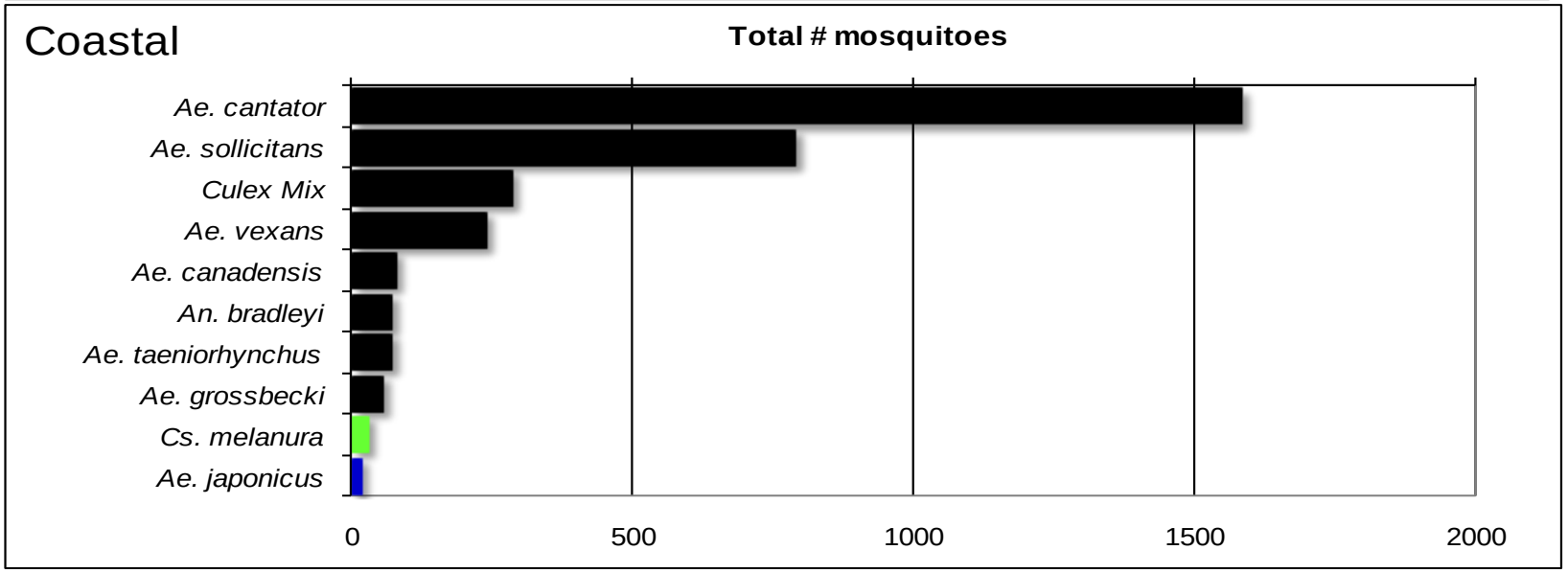


WNV *EEE*

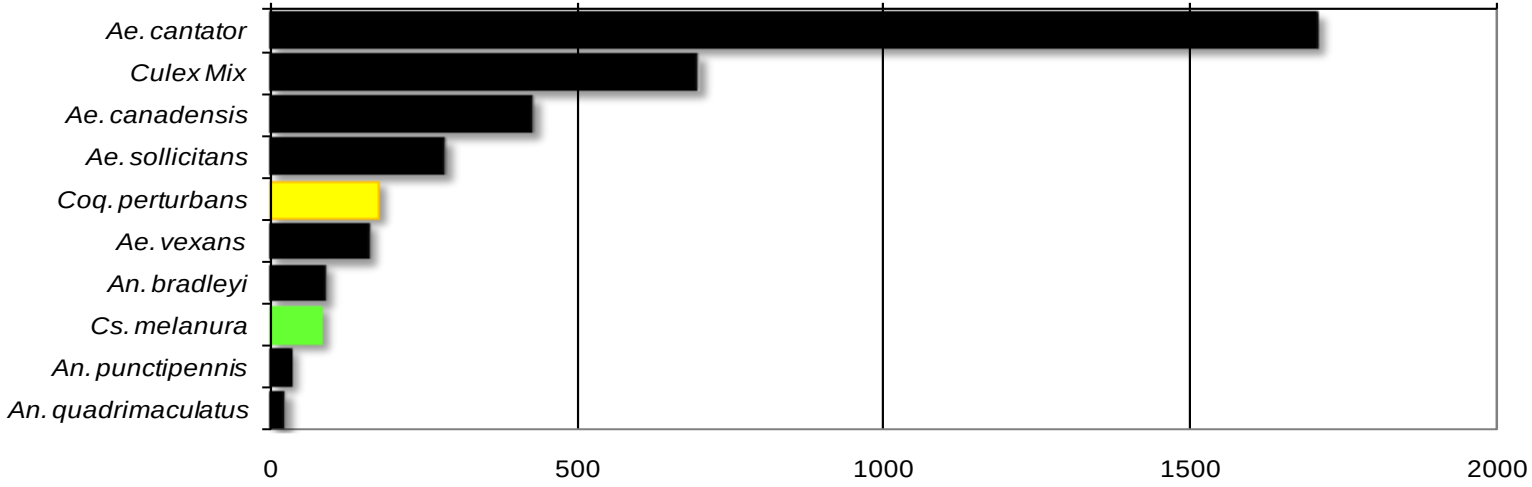
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

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

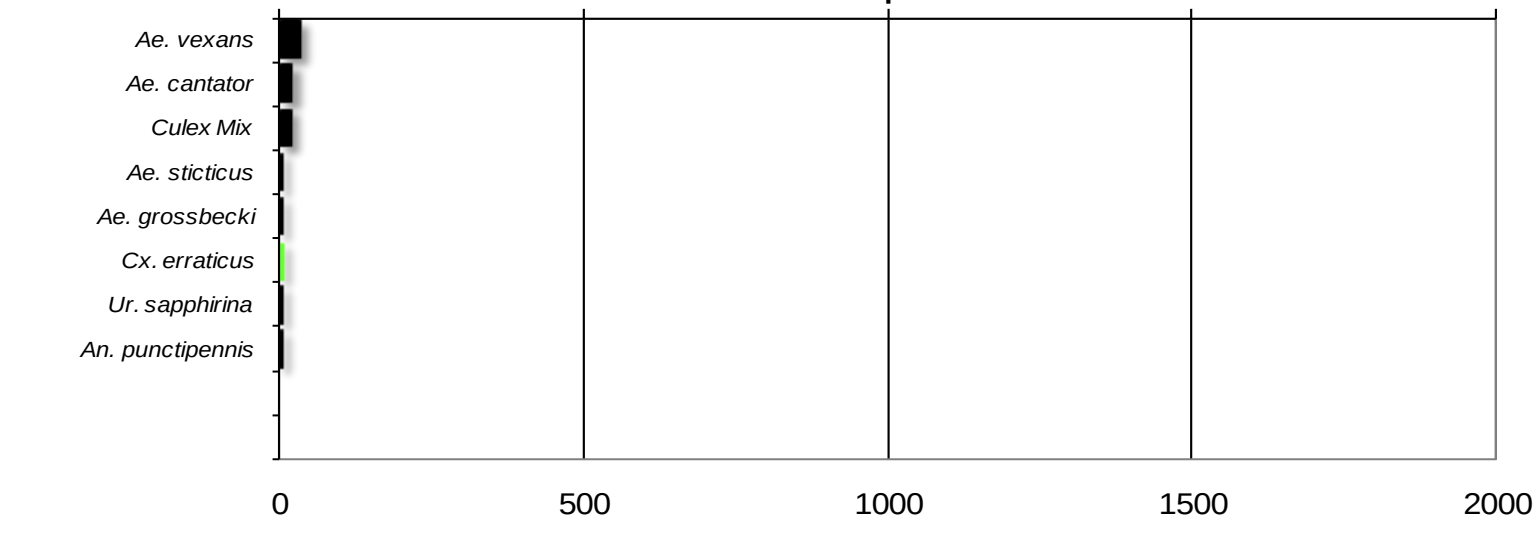




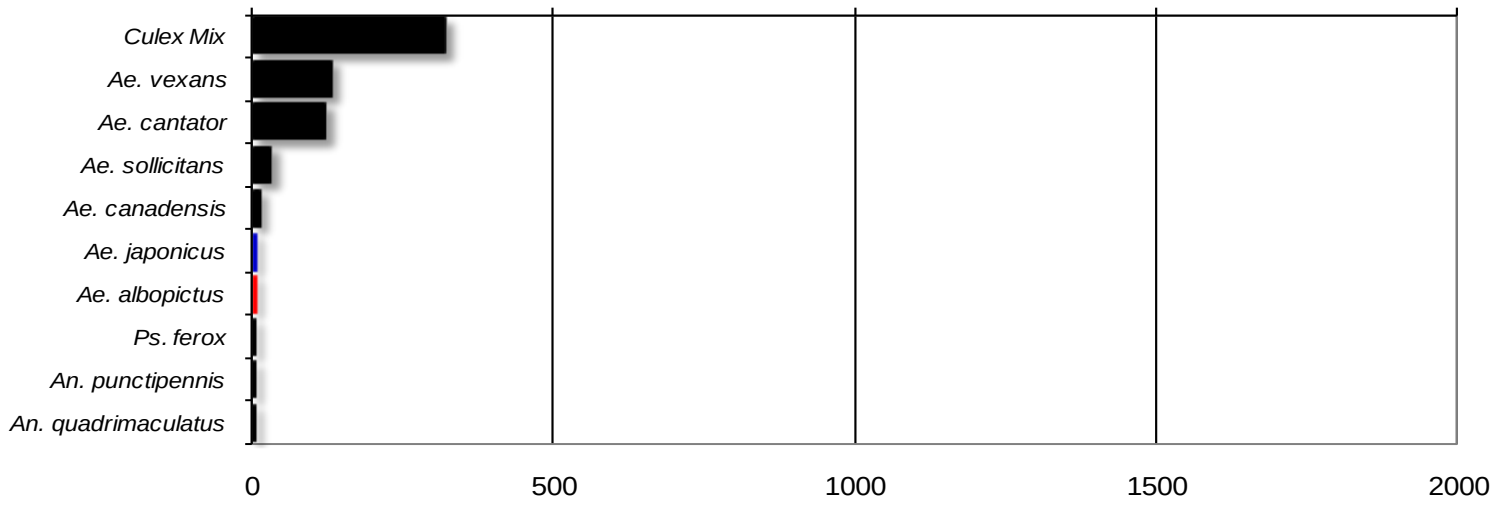
Delaware Bayshore



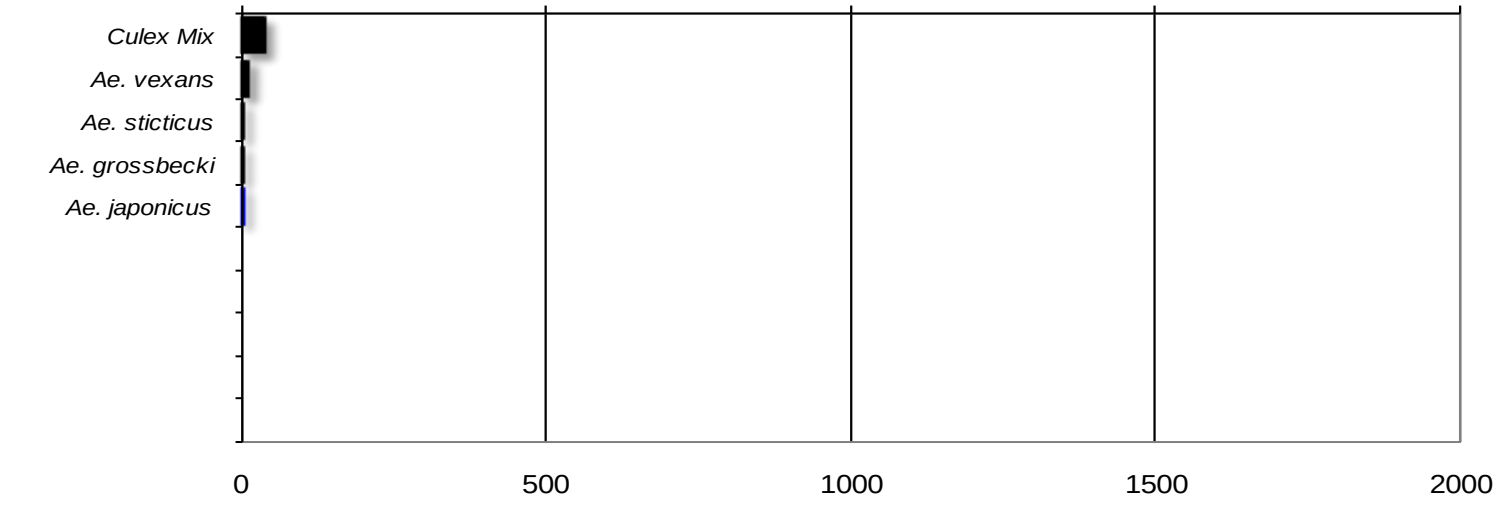
Delaware River Basin

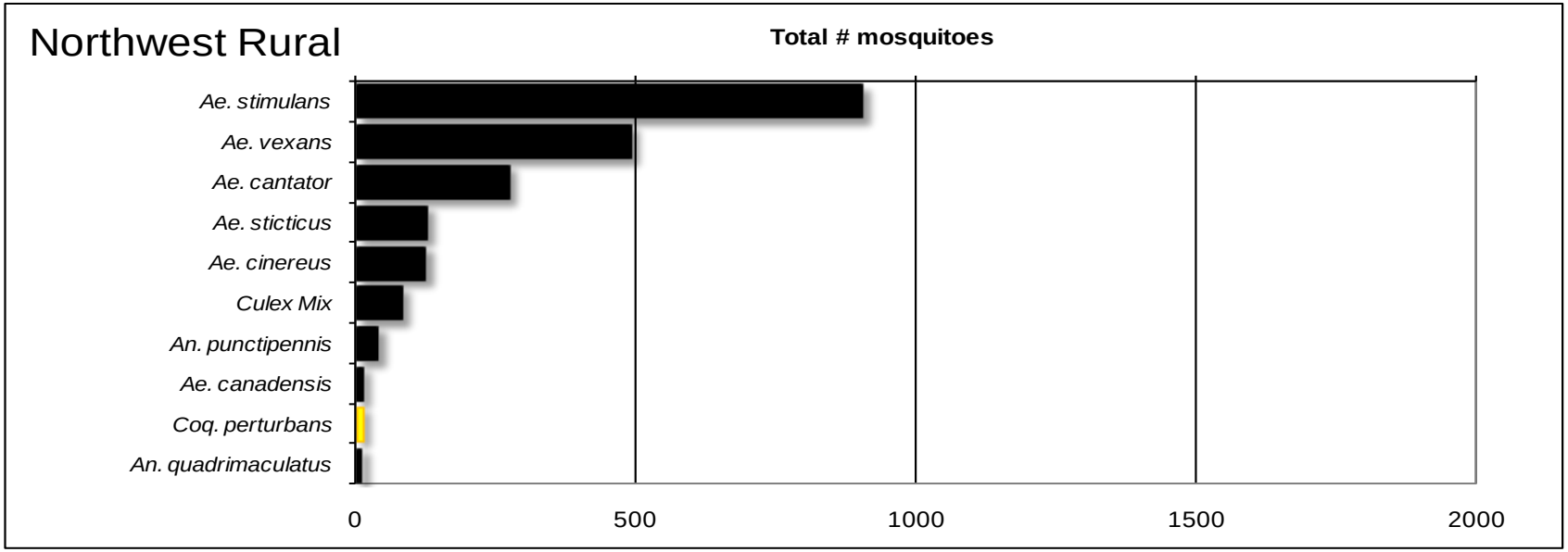


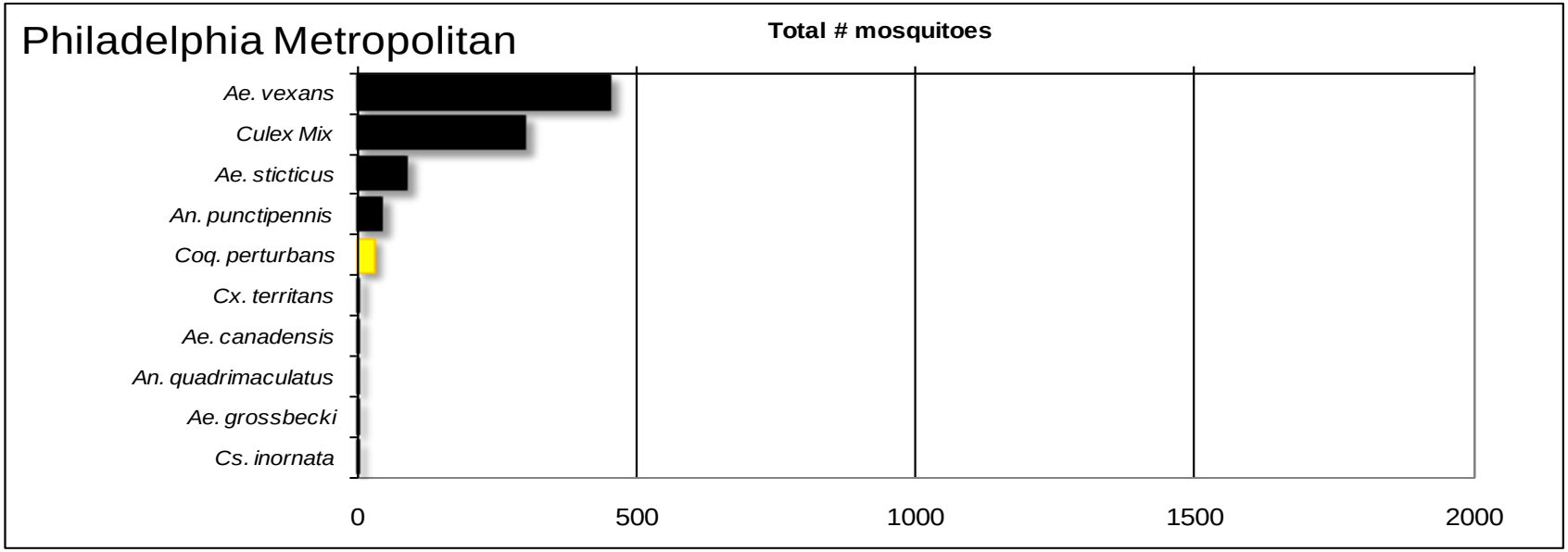
New York Metropolitan



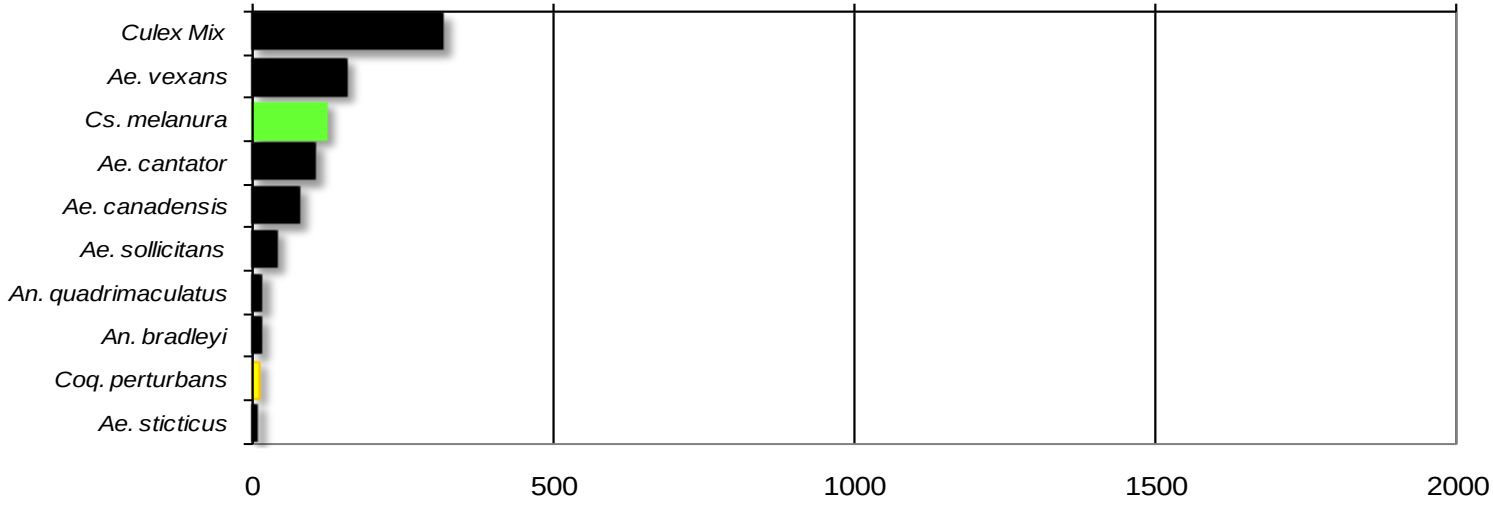
North Central Rural




Northwest Rural
Total # mosquitoes
Ae. stimulans
Ae. vexans
Ae. cantator
Ae. sticticus
Ae. cinereus
Culex Mix
An. punctipennis
Ae. canadensis
Coq. perturbans
An. quadrimaculatus
0
500
1000
1500
2000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Ae. sticticus
An. punctipennis
Coq. perturbans
Cx. territans
Ae. canadensis
An. quadrimaculatus
Ae. grossbecki
Cs. inornata
0
500
1000
1500
2000

Pinelands



Suburban Corridor