NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 27 August to 2 September 2017, CDC Week 35

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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.

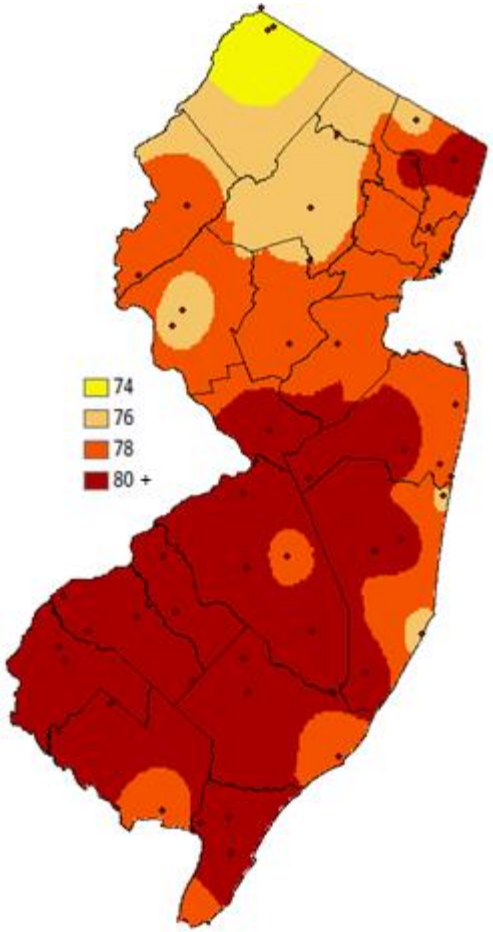
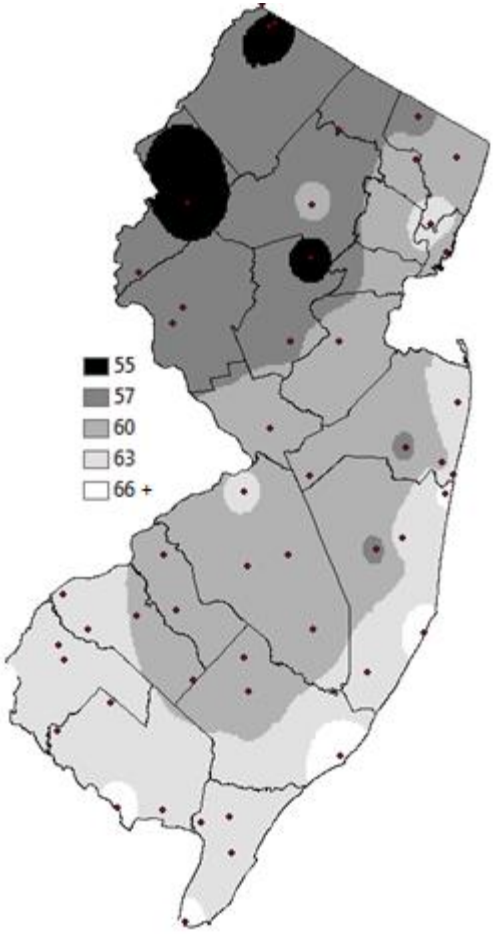
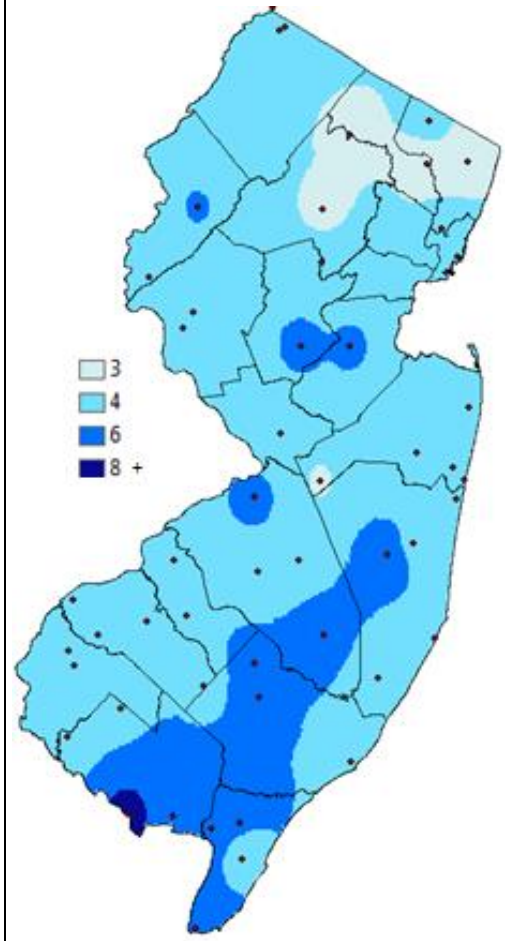
Summary Table – Week 35

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	0.94	0	9.48	7.37	1	0.19	0.03	4	0.00	0.03	0
Coastal	0.06	3.95	0	1.43	5.52	0	0.00	0.08	0	0.00	2.32	0
Delaware Bayshore	nd	1.46	0	nd	9.10	0	nd	0.37	0	nd	0.13	0
Delaware River Basin	4.29	3.53	1	6.86	2.26	4	0.29	0.17	2	0.00	0.01	0
New York Metro	0.73	0.37	2	17.39	2.51	4	0.00	0.08	0	0.06	0.23	0
North Central Rural	0.00	0.31	0	0.00	0.41	0	0.00	0.02	0	0.00	0.00	0
Northwest Rural	0.51	1.24	0	2.40	1.52	2	0.00	0.02	0	0.00	0.00	0
Philadelphia Metro	nd	1.62	0	nd	1.26	0	nd	0.10	0	0.00	0.00	0
Pinelands	0.01	0.33	0	0.14	1.85	0	0.00	0.26	0	0.00	0.03	0
Suburban Corridor	0.13	0.61	0	0.58	0.46	1	0.02	3.53	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. nd=no data reported.

State Summary: As with last week, numerous populations were significantly above recent historical averages. These include *Culex* Mix in the Delaware River Basin and the New York Metropolitan regions as well as *Coquillettidia perturbans* in the Agricultural region. Several other populations of *Aedes vexans, Culex* and *Coquillettidia perturbans* were also either moderately or mildly above historical means.

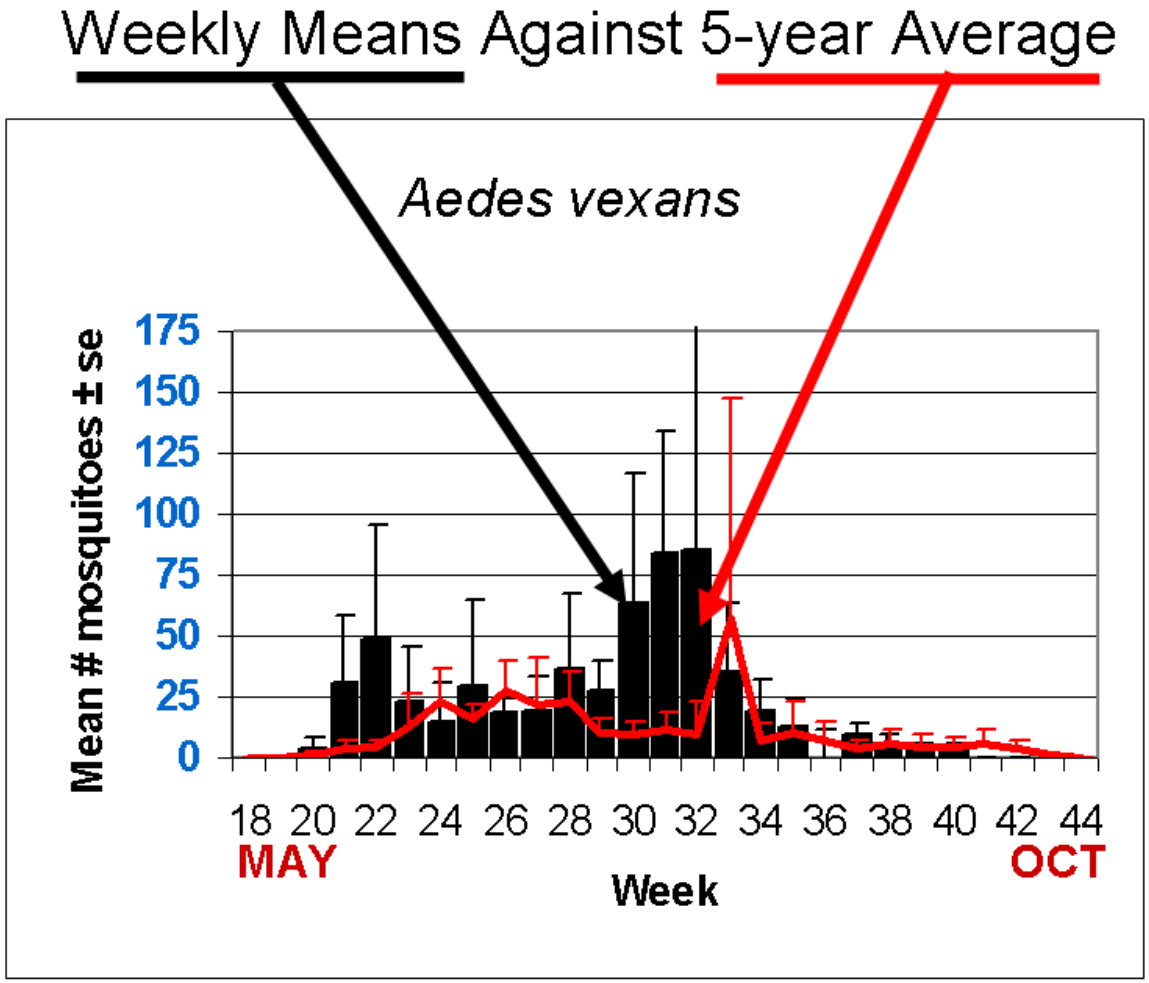
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

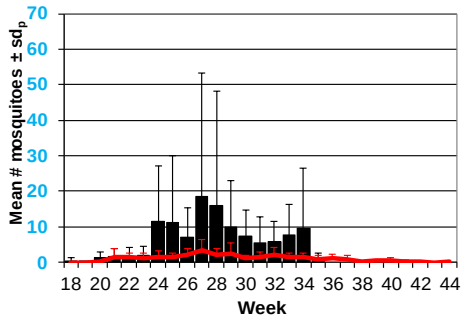
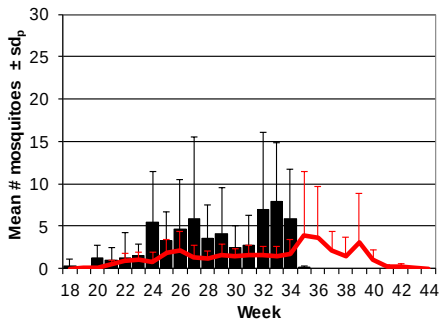
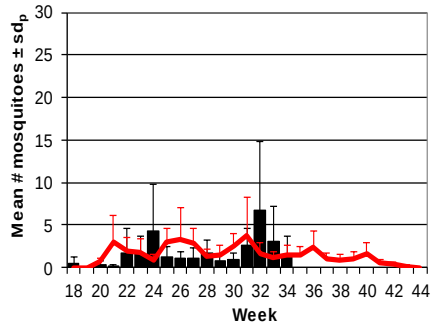
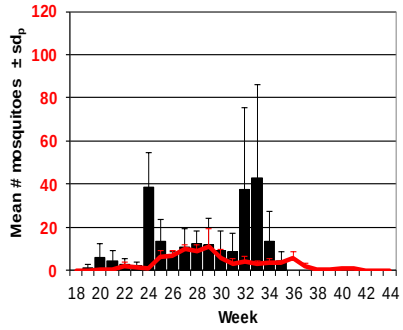
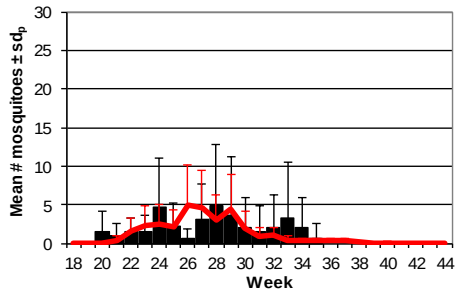
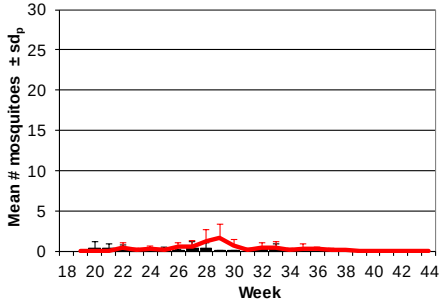
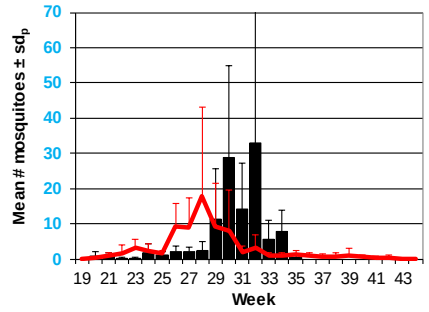
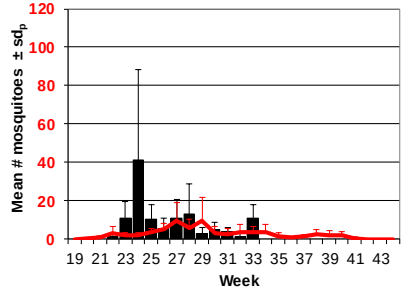
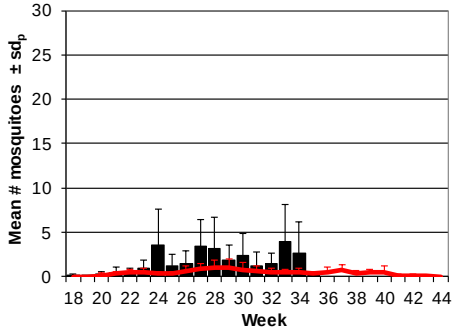
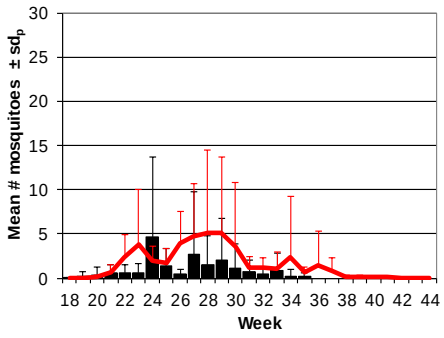
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 2 September 2017 in New Jersey. Data points are from about 55 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

ONJSC at Rutgers University NJ Weather & Climate NETWORK

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 Bergen, Monmouth, Salem, Sussex, Union, and Warren counties. Data for the previous week are from Atlantic, Bergen, Cape May, Cumberland, Essex, Hudson, Hunterdon, Monmouth, Ocean, Salem, Sussex, Union, and Warren counties.

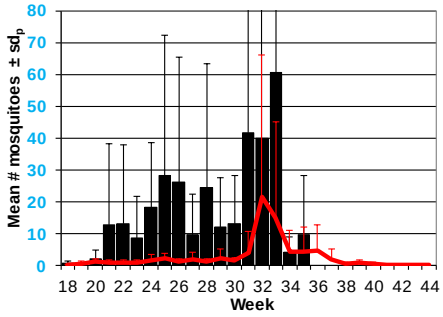


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

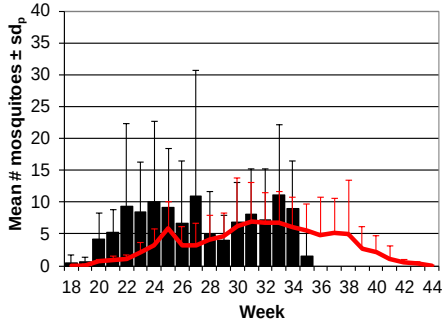
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. This past week, populations were either mildly or moderately above historical trends in the Delaware River Basin and the New York Metropolitan regions, respectively.	

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

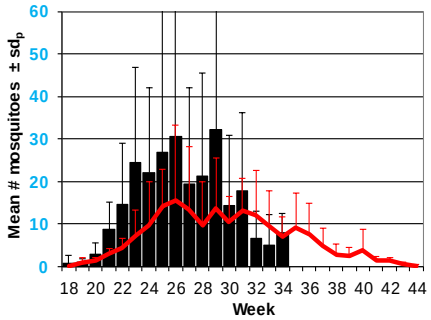
Agricultural



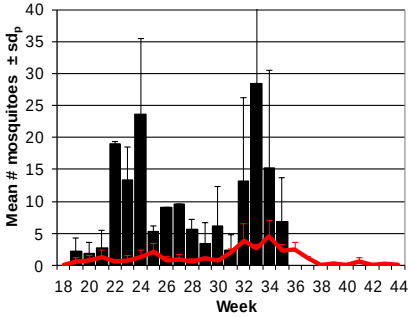
Coastal



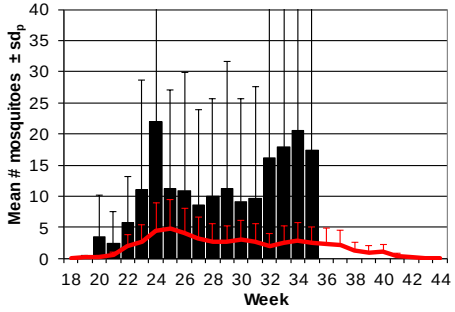
Delaware Bayshore



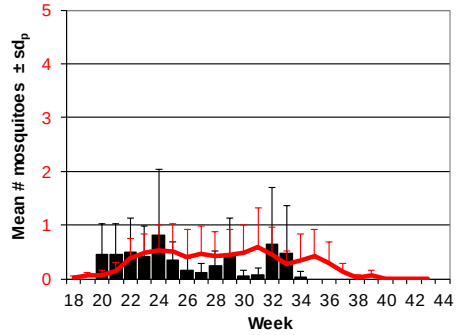
Delaware River Basin



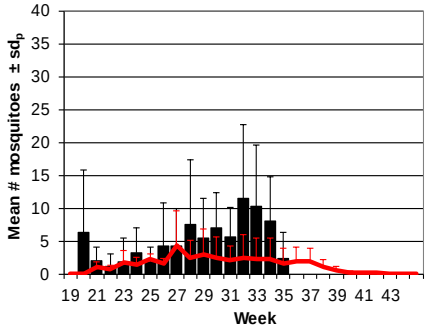
New York Metro



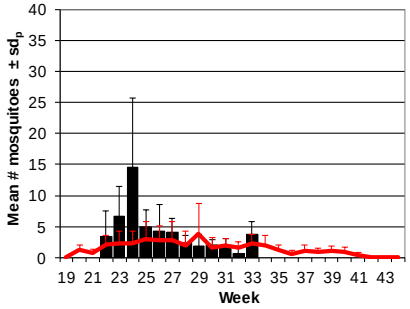
North Central Rural



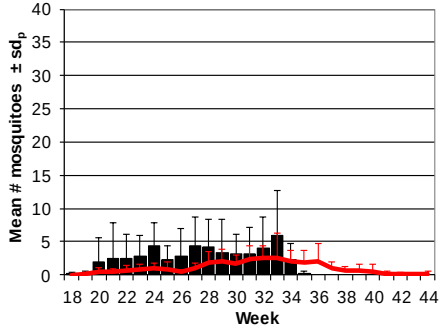
Northwestern Rural



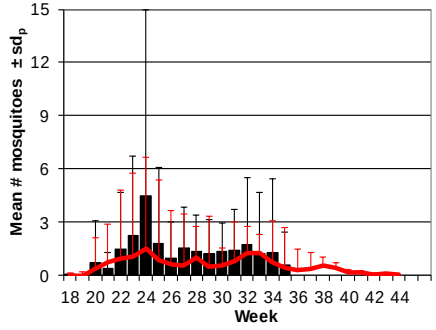
Philadelphia Metro



Pinelands



Suburban Corridor

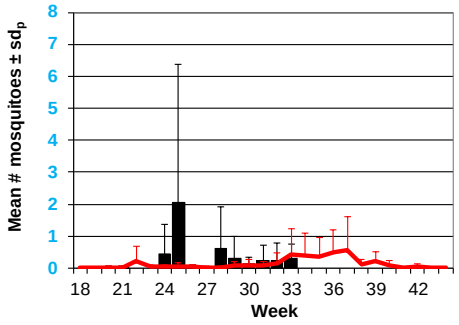


Comments

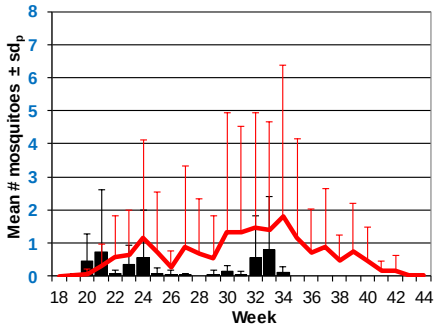
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. As with last week, high population levels continued to be seen in the Delaware River Basin and the New York Metropolitan region. Moderately elevated numbers were seen in the Northwest Rural region and minor elevations were also seen in Agricultural region and the Suburban Corridor. WNV continues to be about at average activity currently, with no reported horse or human cases at this time.

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

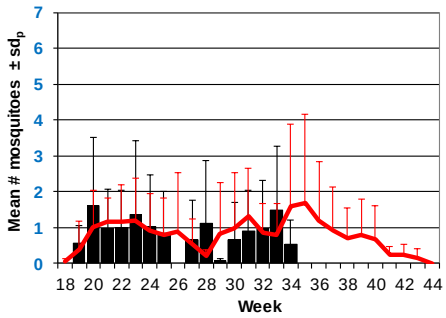
Agricultural



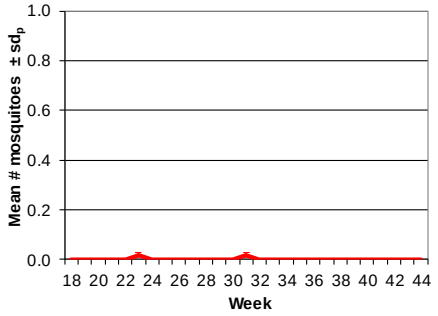
Coastal



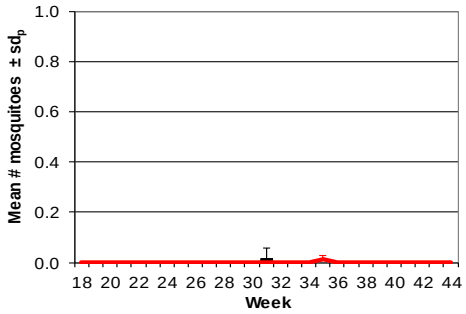
Delaware Bayshore



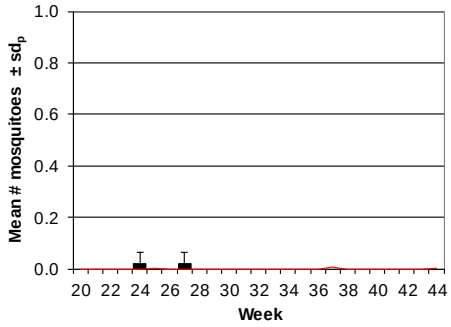
Delaware River Basin



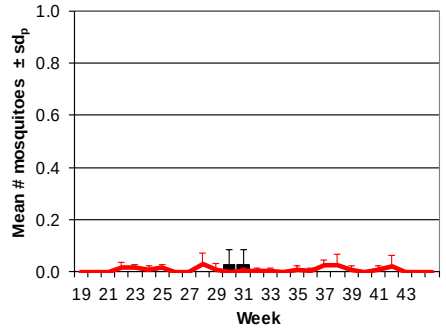
New York Metro



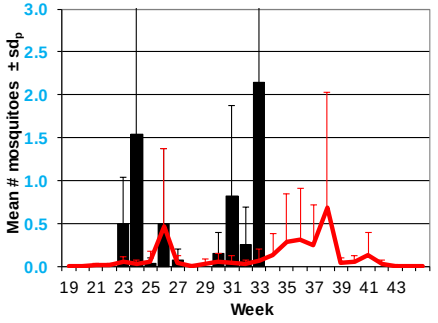
North Central Rural



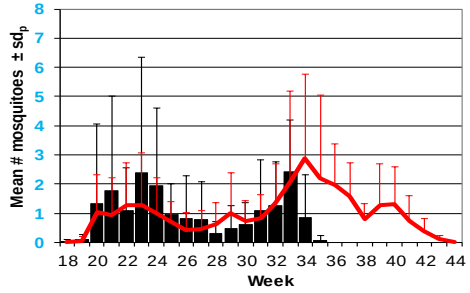
Northwestern Rural



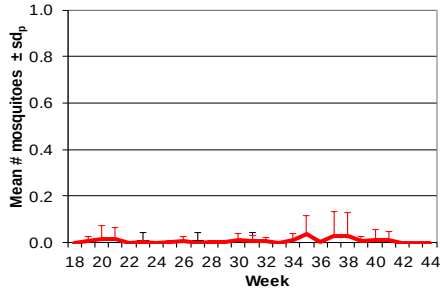
Philadelphia Metro



Pinelands



Suburban Corridor

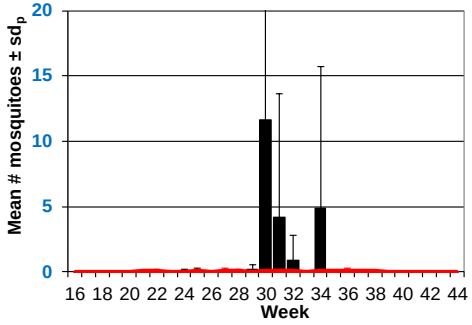
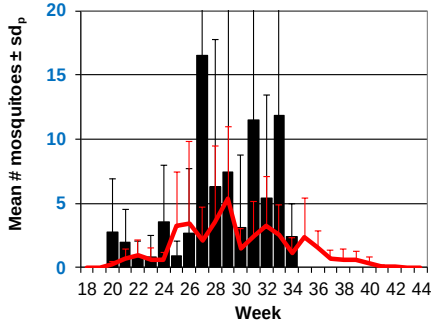
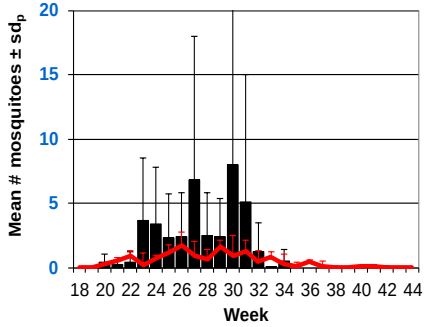
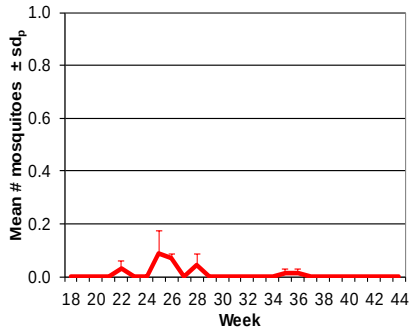
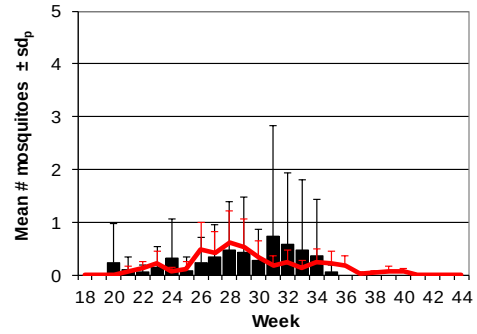
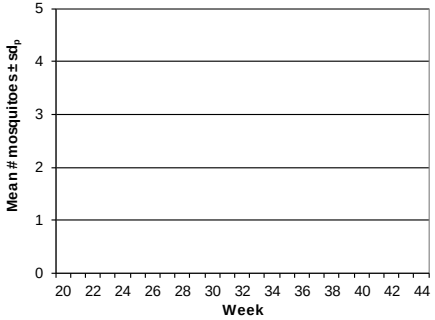
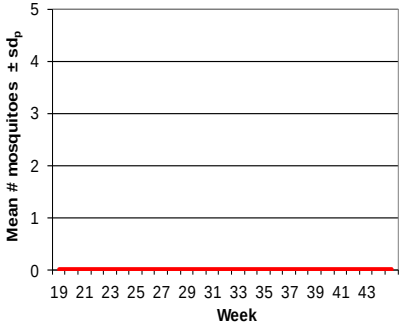
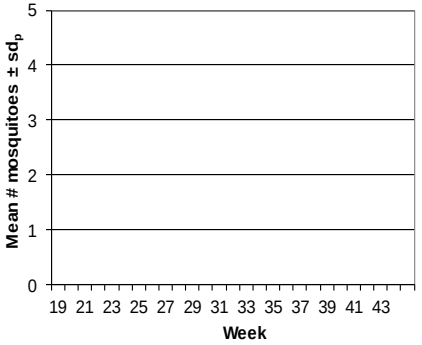
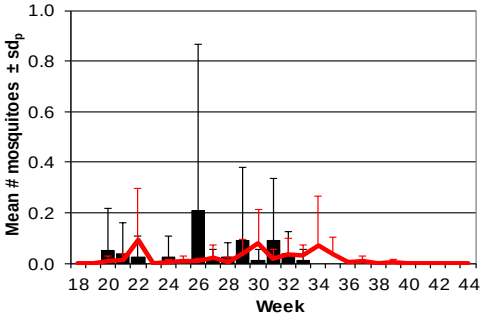
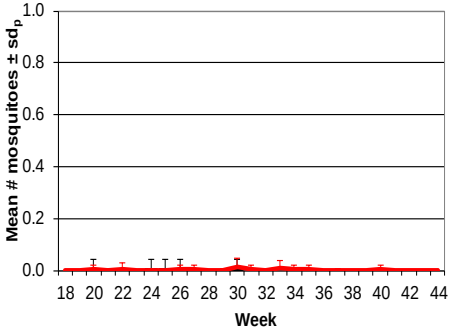


Comments

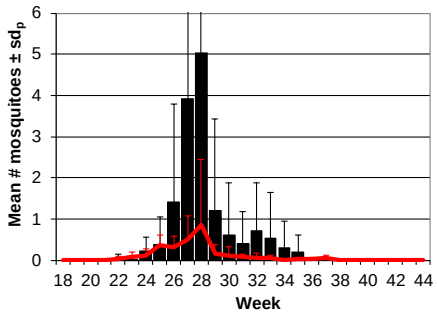
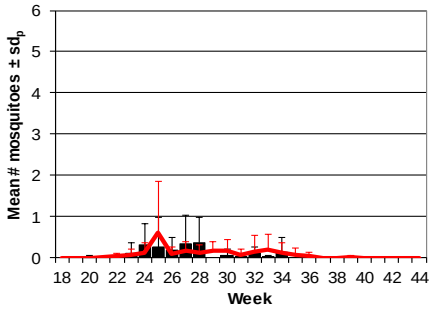
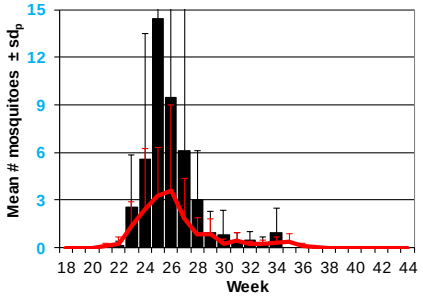
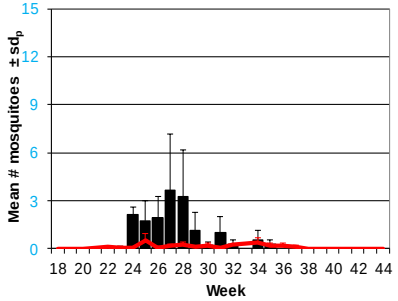
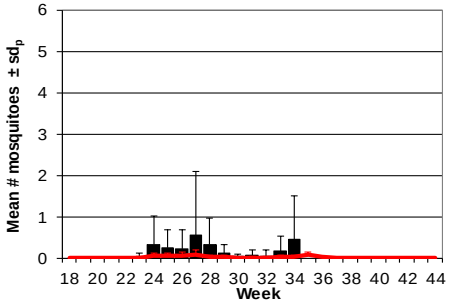
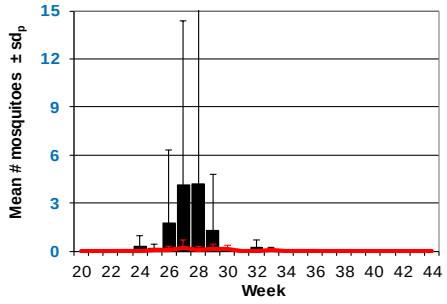
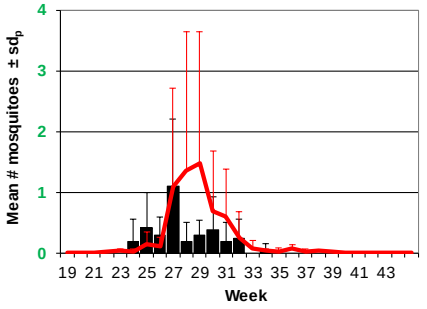
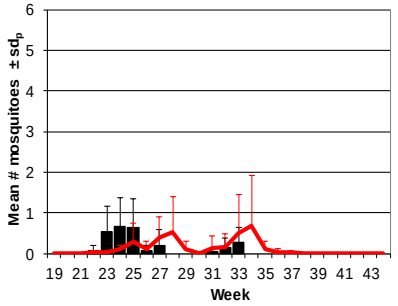
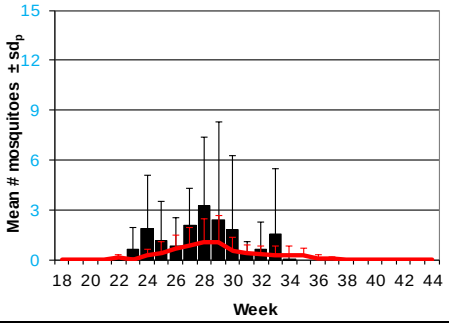
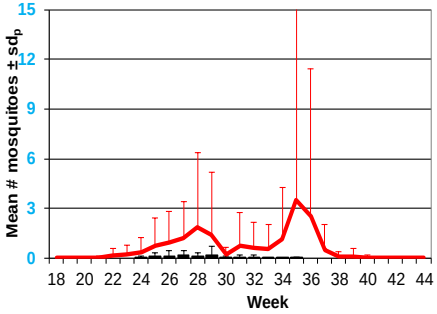
Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. Last year, EEE activity was recorded not only in southern NJ where it is typically found, but also in the northern half of the state. One human case occurred in the latter area. Populations appear to be around or less than historical averages. Currently there are 5 positive pools, all in *Cs. melanura* plus one horse case.

All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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* is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. No high population levels above recent historical values were recorded for the counties reporting data at this time. Most populations should start to decline as the season progresses. Next full moon is on the 6th September.	

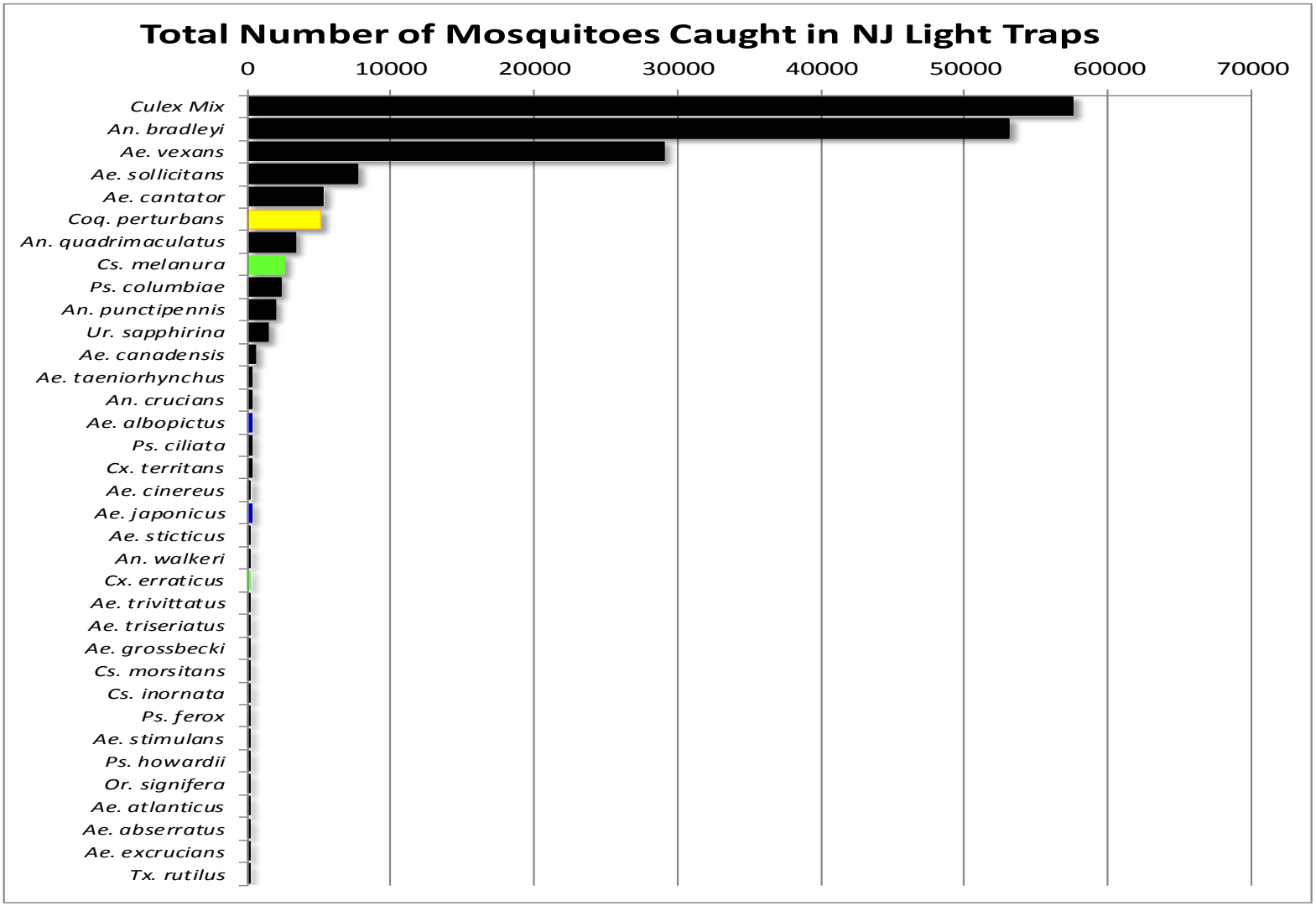
Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

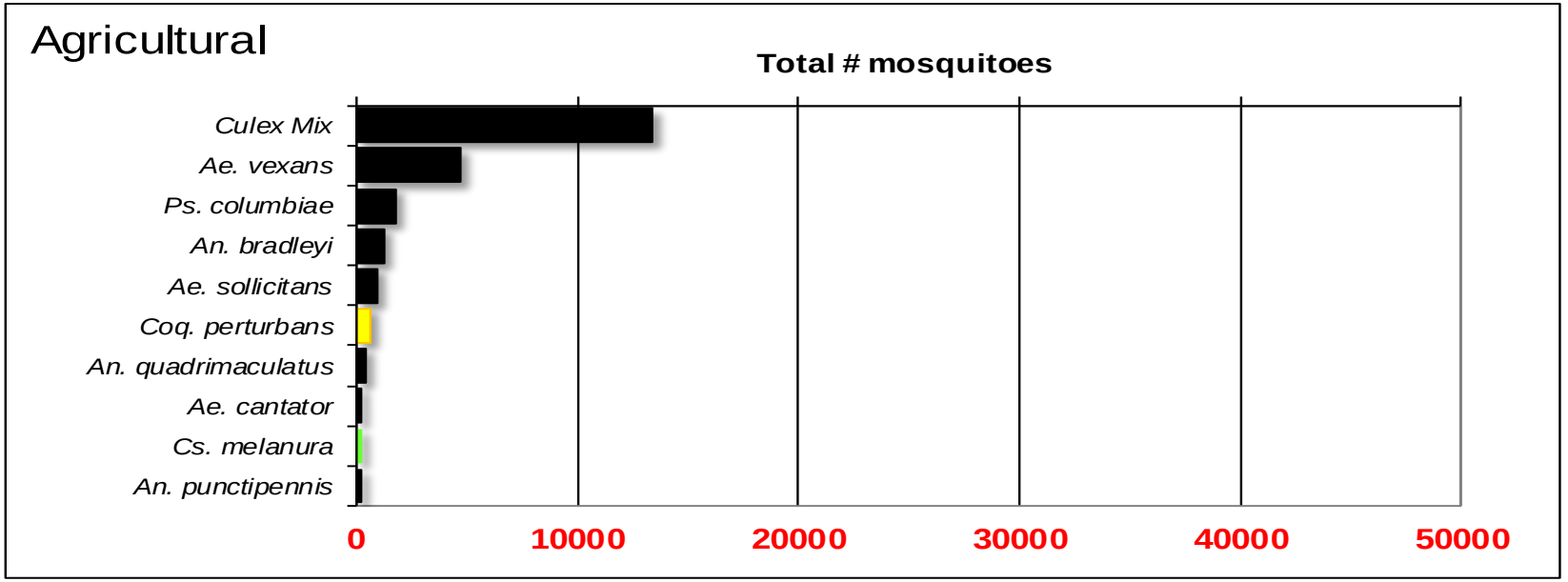
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Coquillettidia perturbans* populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. This mid-season species is a potential inland vector of EEE and should be monitored closely when the arbovirus is present. Continuing in its decline, populations that were higher than recent historical average were reported in the Agricultural and Delaware River Basin. These values were lower than were generally reported during the peak population levels. However, given the time of season and EEE activity, these populations may actually pose a greater danger in terms of arbovirus transmission. Caution is required.	

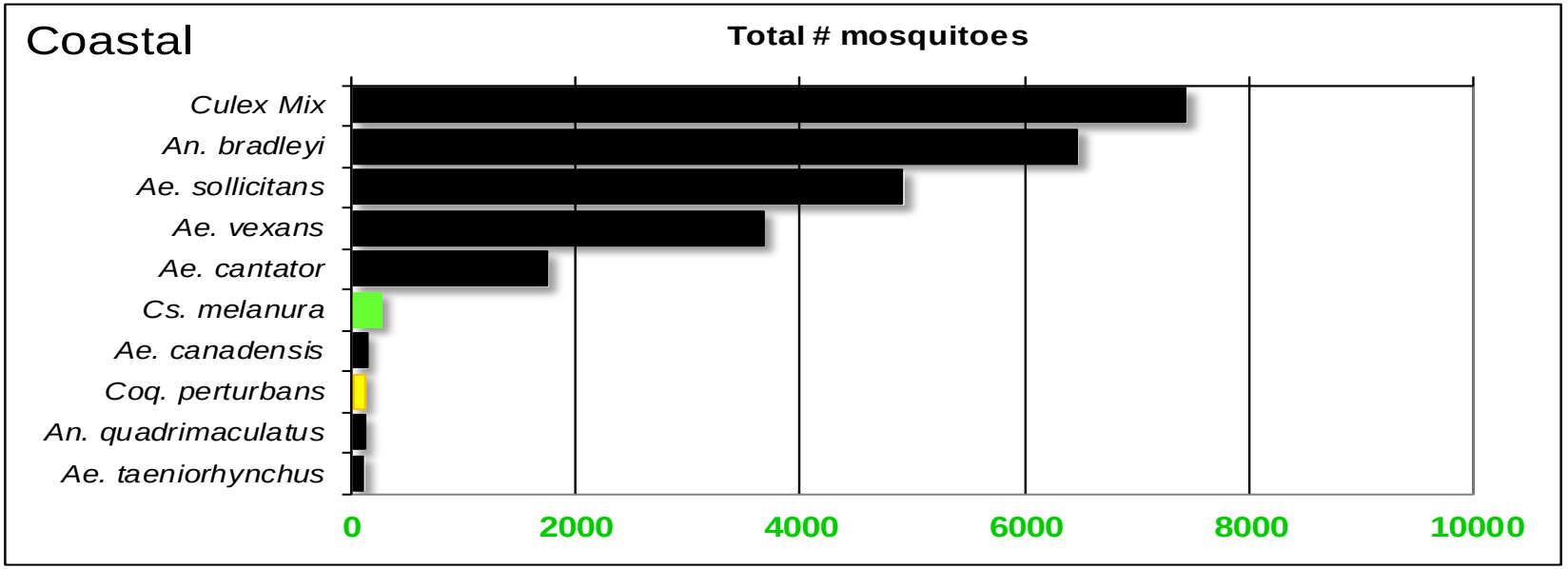
WNV *EEE*

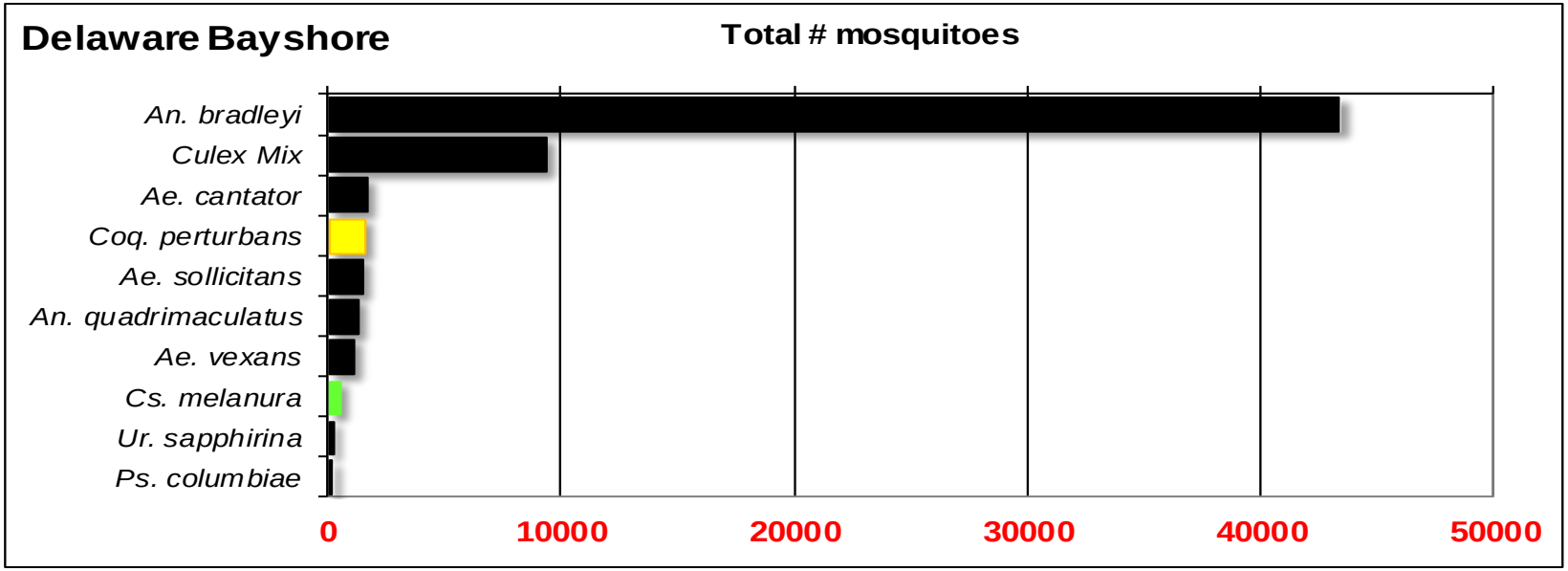
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

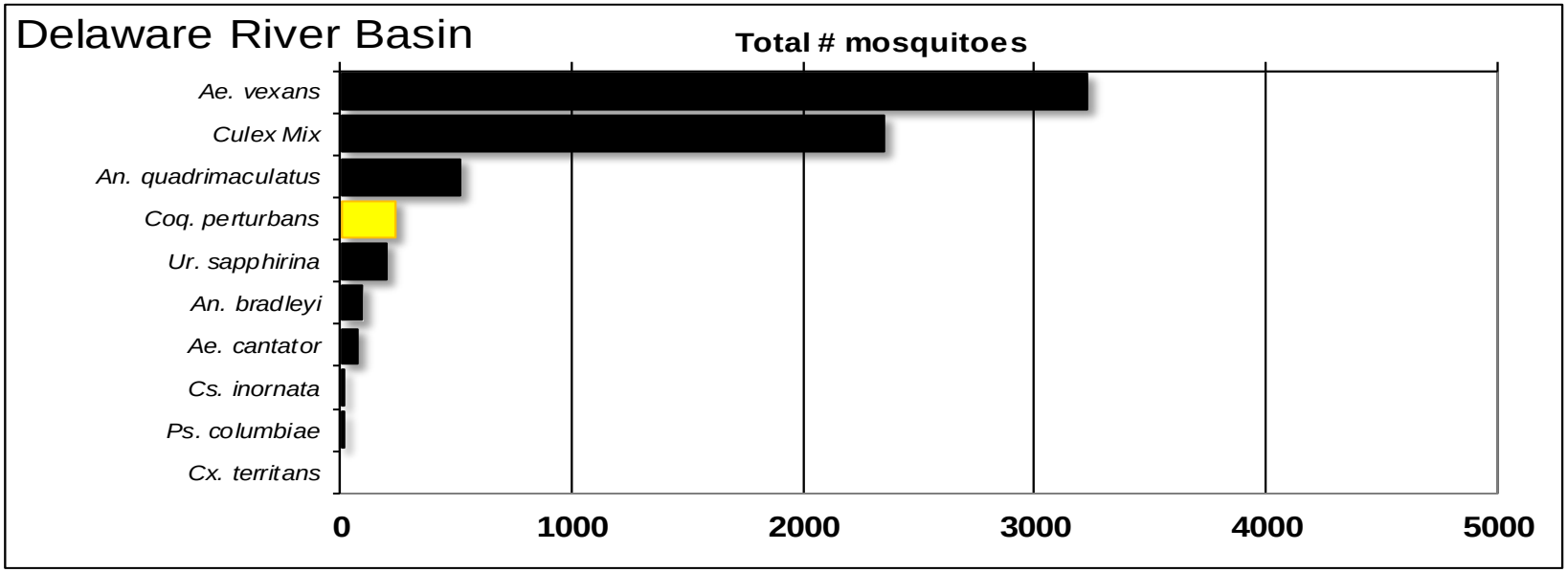
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

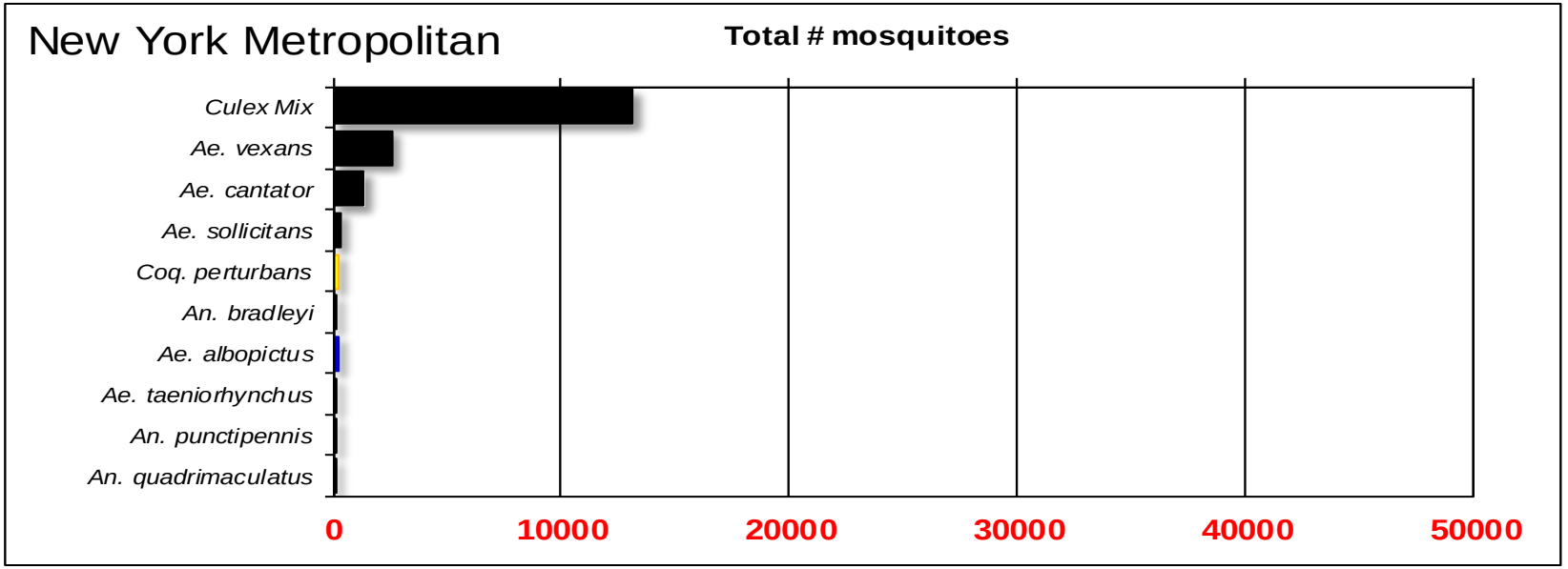


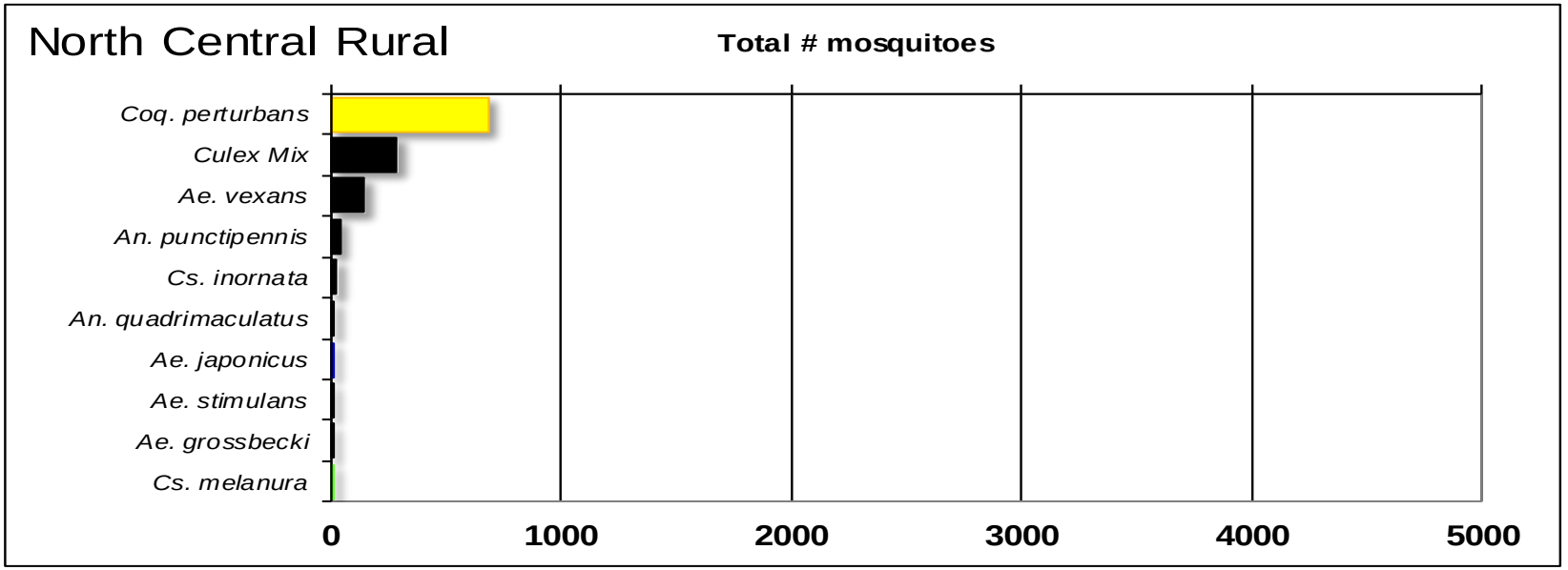

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Ps. columbiae
An. bradleyi
Ae. sollicitans
Coq. perturbans
An. quadrimaculatus
Ae. cantator
Cs. melanura
An. punctipennis
0
10000
20000
30000
40000
50000

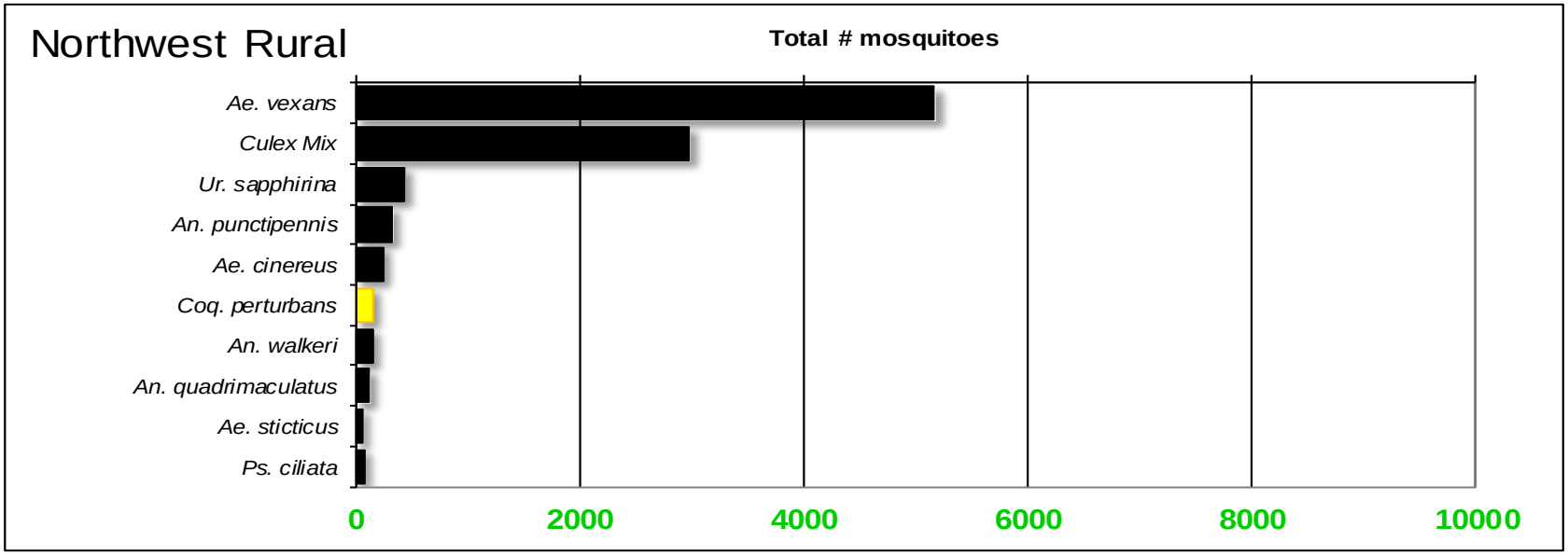

Coastal
Total # mosquitoes
Culex Mix
An. bradleyi
Ae. sollicitans
Ae. vexans
Ae. cantator
Cs. melanura
Ae. canadensis
Coq. perturbans
An. quadrimaculatus
Ae. taeniorhynchus
0
2000
4000
6000
8000
10000

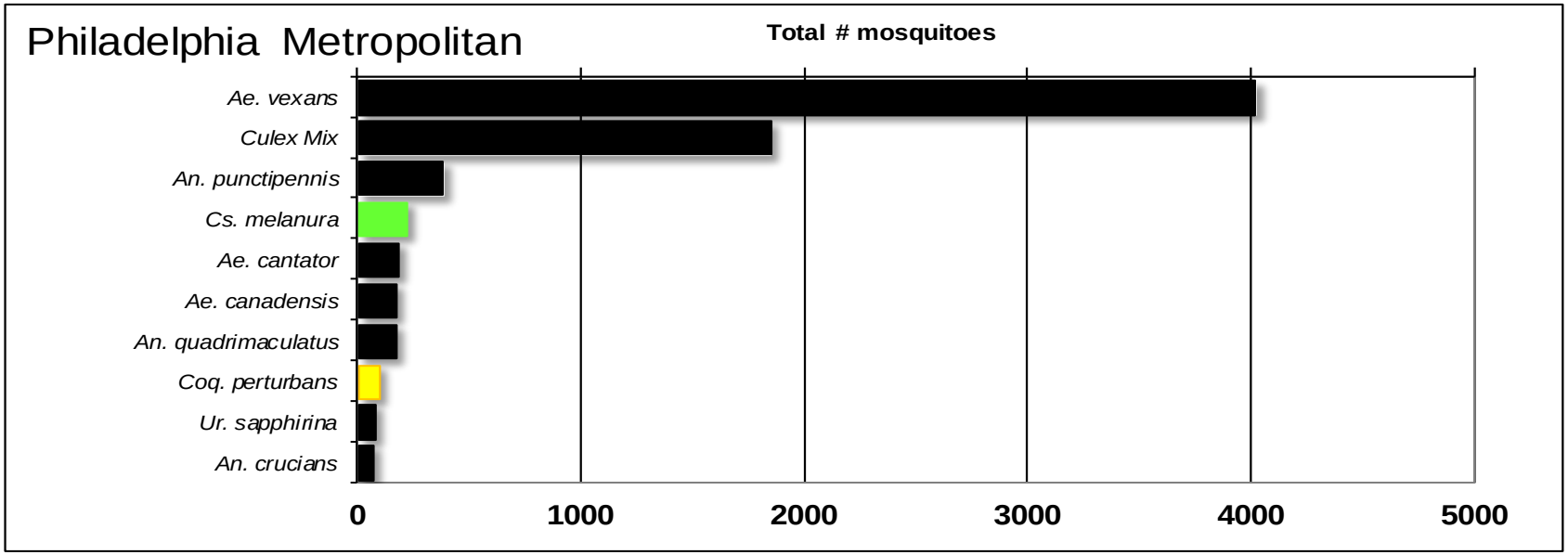

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Coq. perturbans
Ae. sollicitans
An. quadrimaculatus
Ae. vexans
Cs. melanura
Ur. sapphirina
Ps. columbiae
0
10000
20000
30000
40000
50000

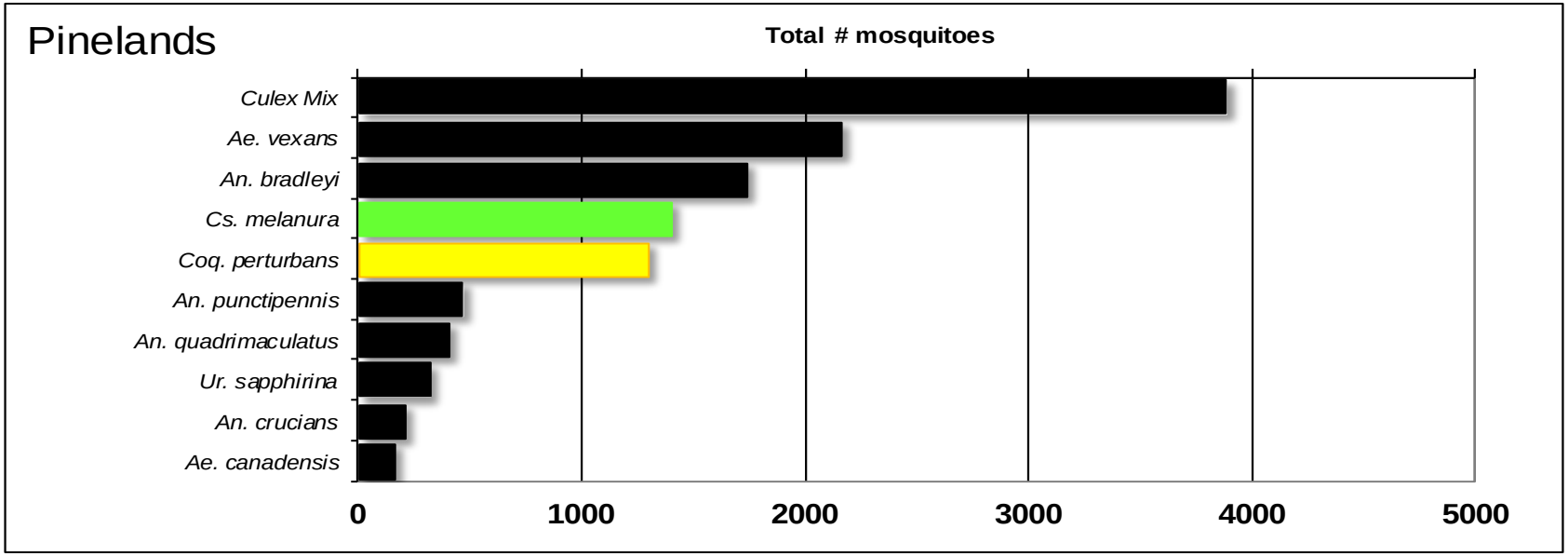

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
Coq. perturbans
Ur. sapphirina
An. bradleyi
Ae. cantator
Cs. inornata
Ps. columbiae
Cx. territans
0
1000
2000
3000
4000
5000

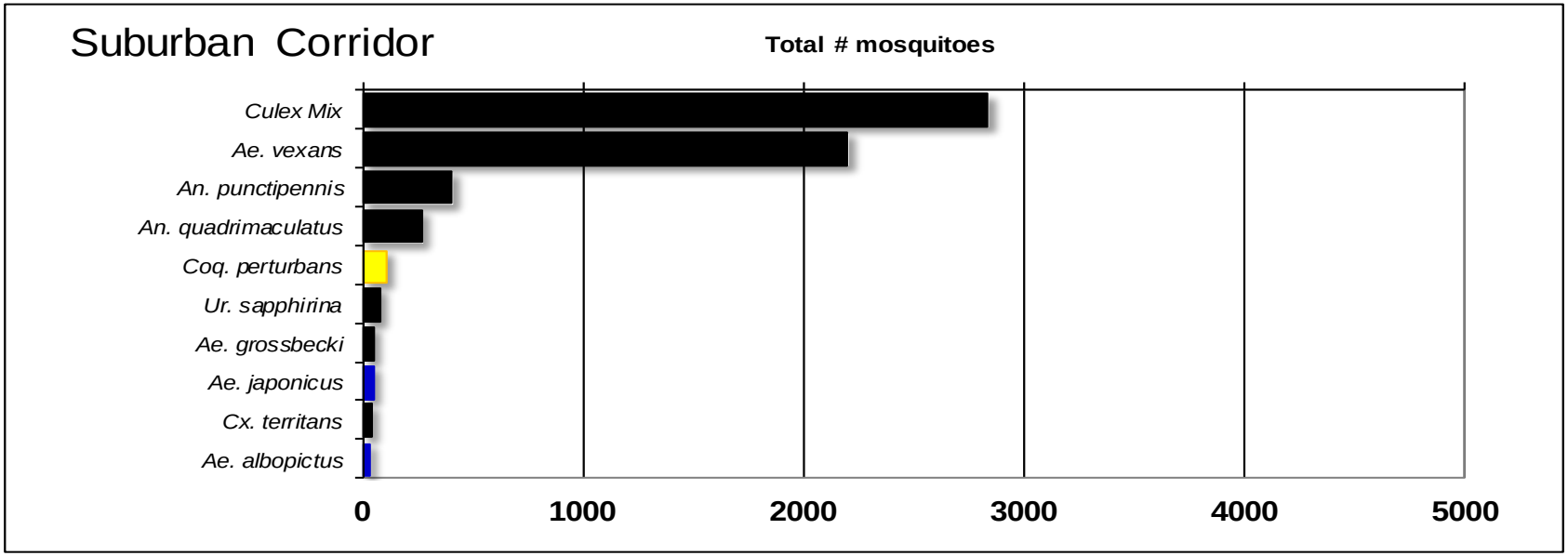

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
An. bradleyi
Ae. albopictus
Ae. taeniorhynchus
An. punctipennis
An. quadrimaculatus
0
10000
20000
30000
40000
50000


North Central Rural
Total # mosquitoes
Coq. perturbans
Culex Mix
Ae. vexans
An. punctipennis
Cs. inornata
An. quadrimaculatus
Ae. japonicus
Ae. stimulans
Ae. grossbecki
Cs. melanura
0
1000
2000
3000
4000
5000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Ur. sapphirina
An. punctipennis
Ae. cinereus
Coq. perturbans
An. walkeri
An. quadrimaculatus
Ae. sticticus
Ps. ciliata
0
2000
4000
6000
8000
10000


Philadelphia Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
An. punctipennis
Cs. melanura
Ae. cantator
Ae. canadensis
An. quadrimaculatus
Coq. perturbans
Ur. sapphirina
An. crucians
0
1000
2000
3000
4000
5000


Pinelands
Total # mosquitoes
Culex Mix
Ae. vexans
An. bradleyi
Cs. melanura
Coq. perturbans
An. punctipennis
An. quadrimaculatus
Ur. sapphirina
An. crucians
Ae. canadensis
0
1000
2000
3000
4000
5000


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
An. punctipennis
An. quadrimaculatus
Coq. perturbans
Ur. sapphirina
Ae. grossbecki
Ae. japonicus
Cx. territans
Ae. albopictus
0
1000
2000
3000
4000
5000