NEW JERSEY ADULT MOSQUITO SURVEILLANCE

Report for 16 July to 22 July 2017, CDC Week 29

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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.

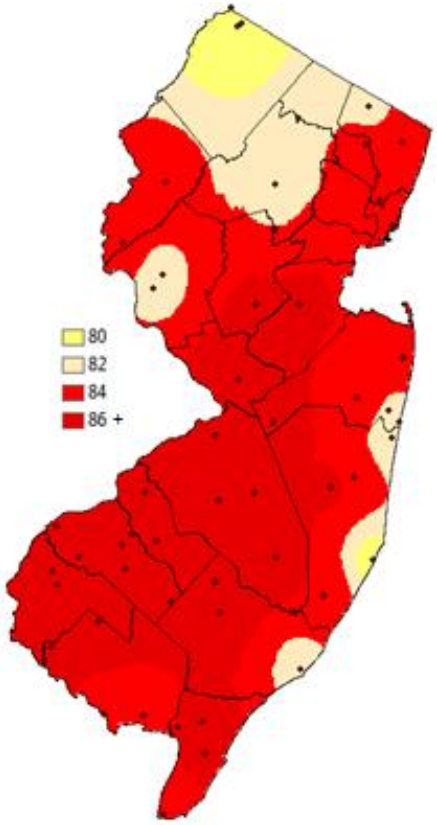
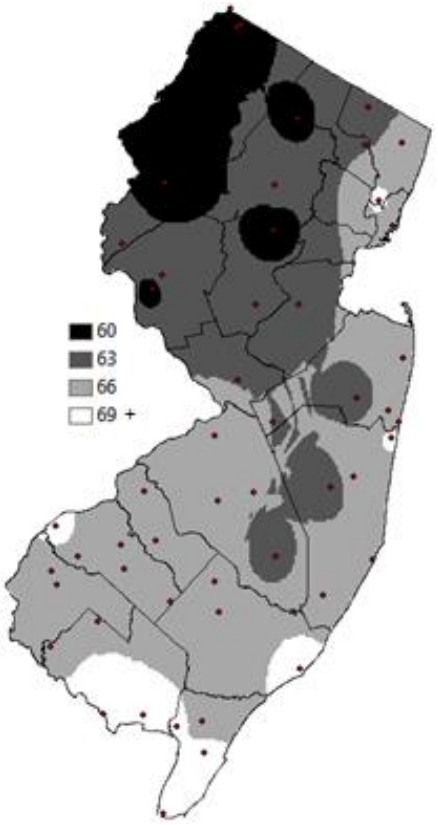
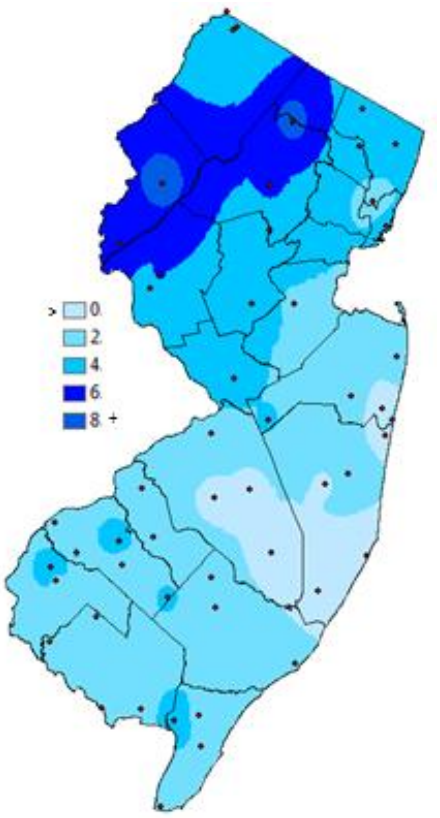
Summary Table – Week 29

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	nd	2.32	0	nd	2.08	0	nd	0.16	0	nd	<0.04	0
Coastal	1.25	1.63	0	1.02	4.62	0	0.00	0.17	0	0.44	5.34	0
Delaware Bayshore	nd	1.50	0	nd	13.79	0	nd	0.87	0	nd	1.61	0
Delaware River Basin	nd	11.34	0	nd	1.14	0	nd	0.09	0	nd	0.00	0
New York Metro	2.61	4.49	0	7.03	2.67	4	0.03	0.03	0	0.36	0.54	0
North Central Rural	0.02	1.60	0	0.41	0.44	0	1.32	0.16	4	0.00	0.00	0
Northwest Rural	0.51	9.26	0	0.34	2.97	0	0.00	1.47	0	0.00	0.00	0
Philadelphia Metro	nd	9.58	0	nd	3.82	0	nd	0.11	0	nd	0.00	0
Pinelands	0.56	1.03	0	0.39	2.05	0	0.19	1.10	0	0.00	0.04	0
Suburban Corridor	1.32	5.12	0	0.55	0.51	1	0.16	1.42	0	0.00	<0.01	0

*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given. nd=no data reported.

State Summary: Significantly higher abundances for *Culex* Mix in the New York Metropolitan region and for *Coquillettidia perturbans* in the North Central Rural region were reported this past week. Mildly elevated populations of *Culex* Mix were also reported in the Suburban Corridor.

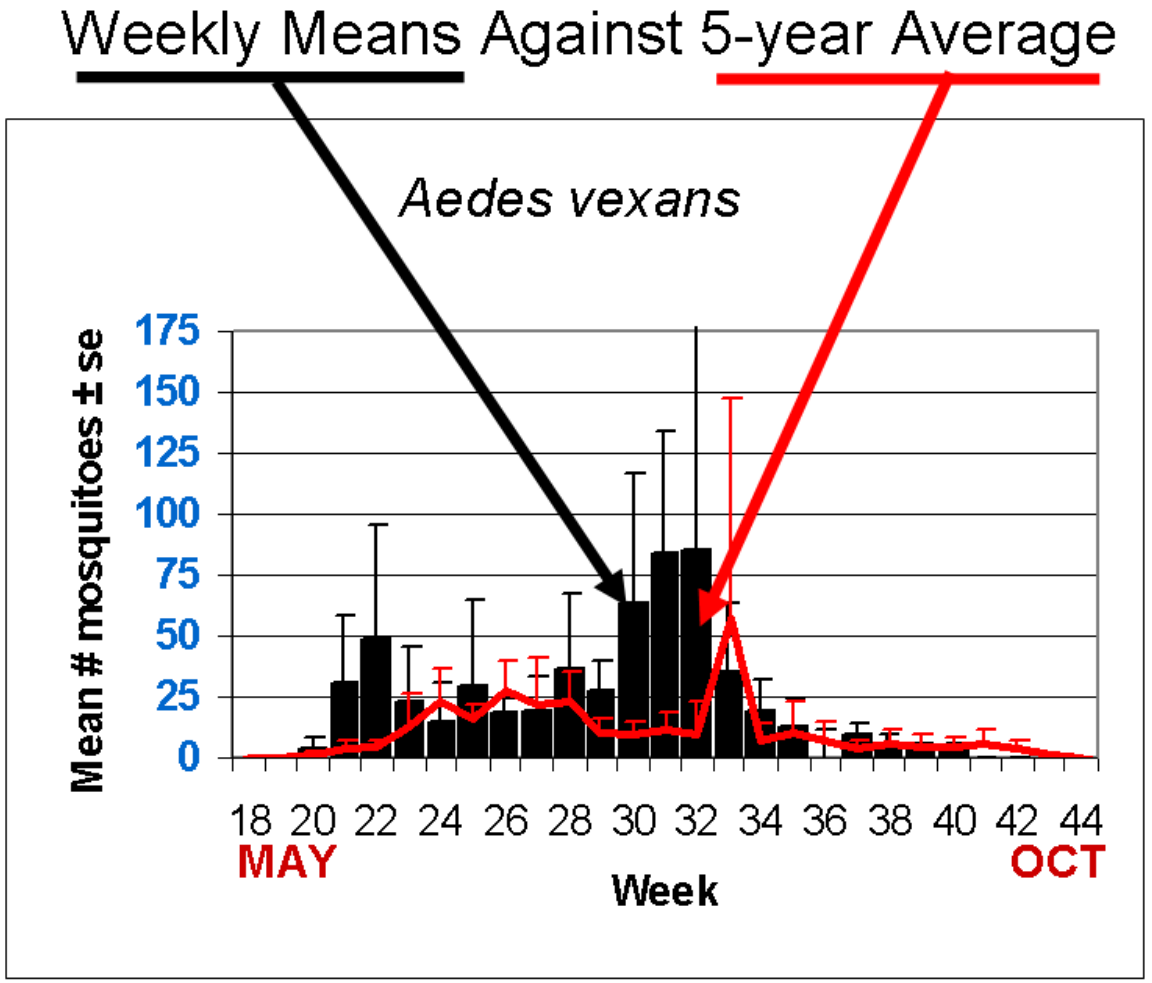
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
		

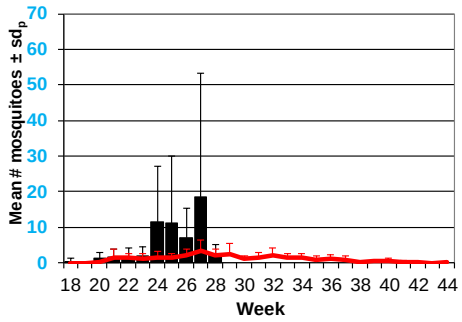
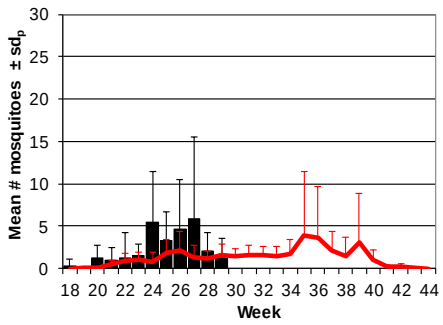
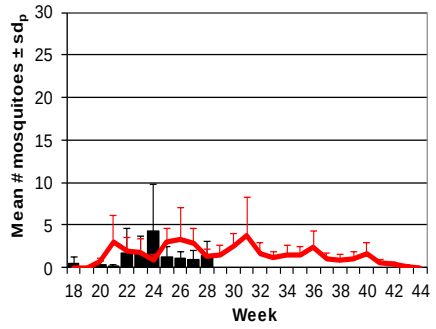
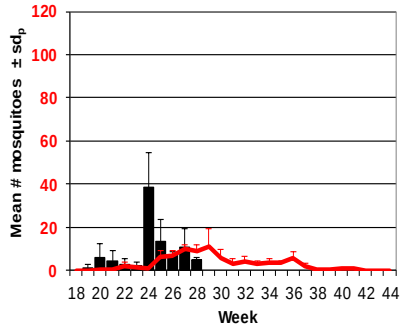
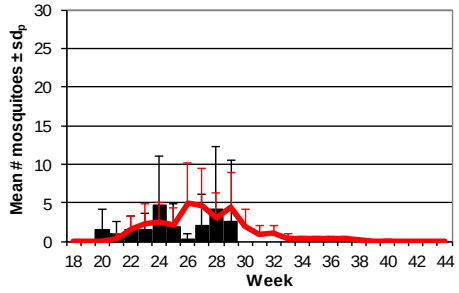
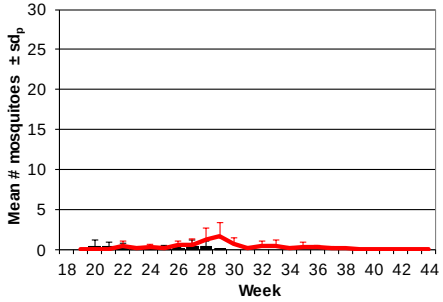
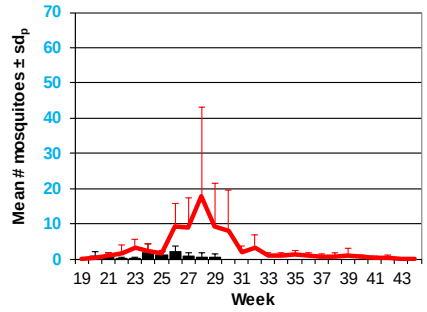
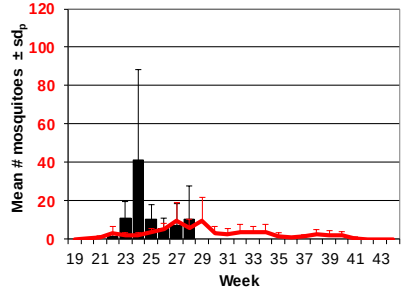
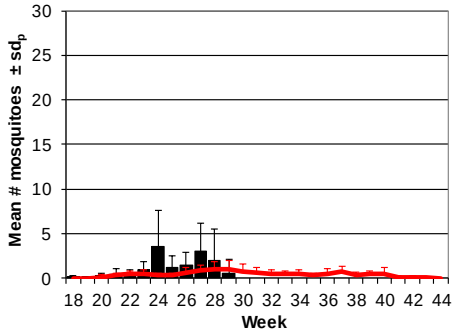
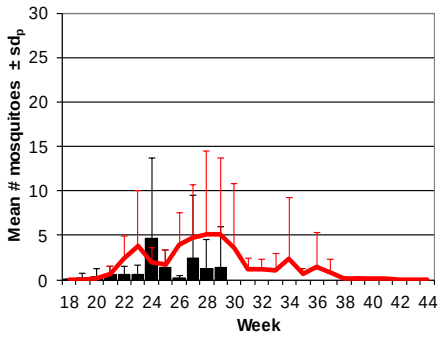
The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 22 July 2017 in New Jersey. Data points are from about 56 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. 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 Atlantic, Mercer, Morris, Passaic, Union, and Warren counties. Data for the previous week are from Atlantic, Bergen, Burlington, Cape May, Cumberland, Essex, Hudson, Hunterdon, Mercer, Monmouth, Morris, Ocean, Passaic, Salem, Union, and Warren counties.

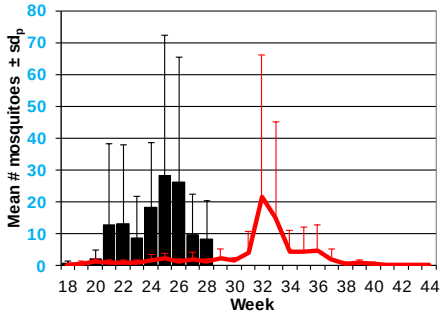


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

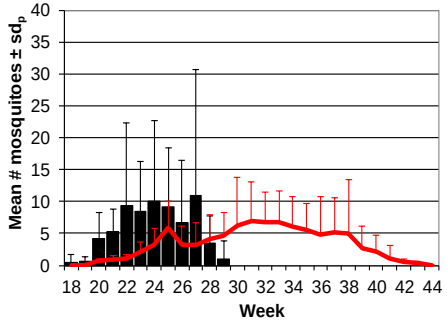
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. No populations were reported as elevated above recent historical patterns for this past week, but some data is still pending. Recent rains may result in emergent populations if water remained available during very hot days.	

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

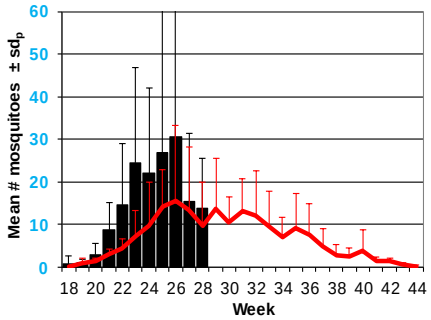
Agricultural



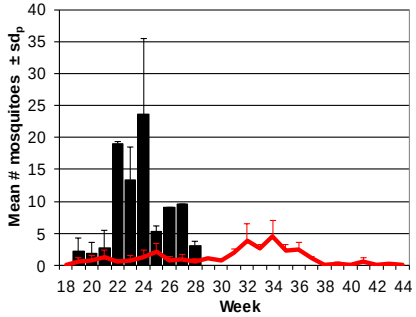
Coastal



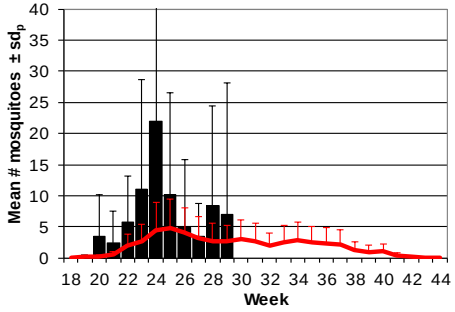
Delaware Bayshore



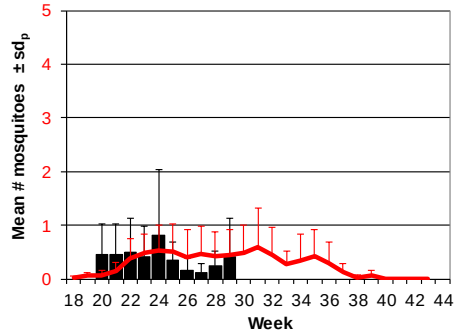
Delaware River Basin



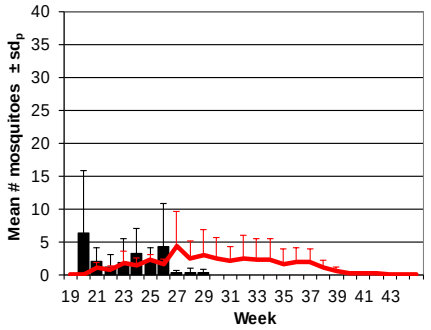
New York Metro



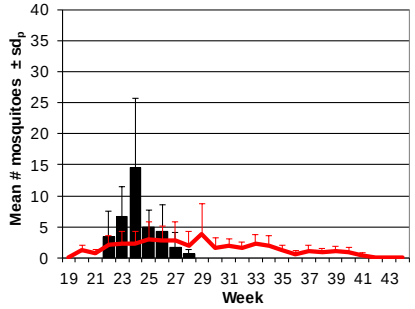
North Central Rural



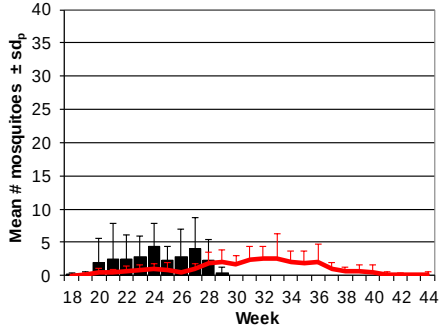
Northwestern Rural



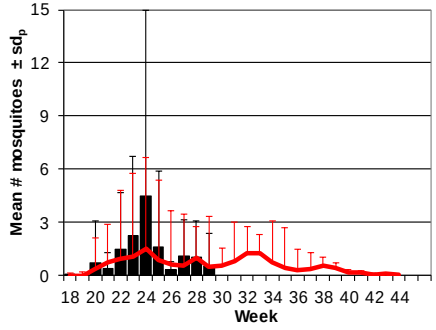
Philadelphia Metro



Pinelands



Suburban Corridor

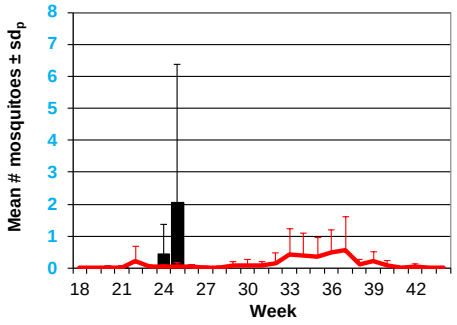


Comments

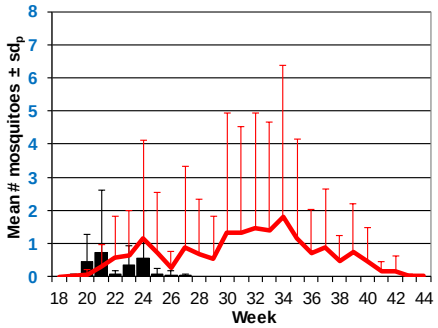
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Significantly higher populations were reported for the New York Metropolitan region and mildly elevated populations were found in the Suburban Corridor. WNV positive mosquito pools doubled from the previous week.

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

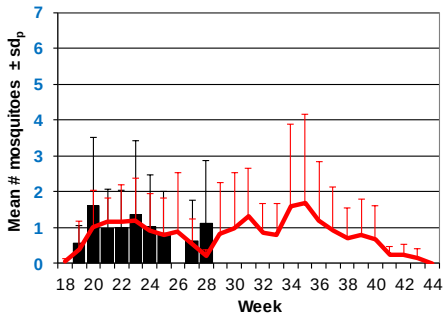
Agricultural



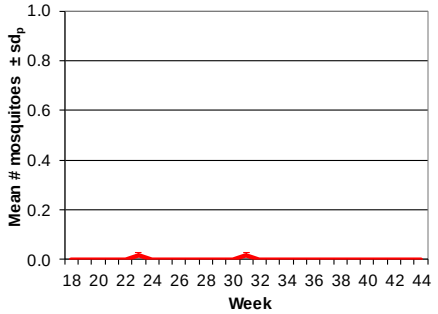
Coastal



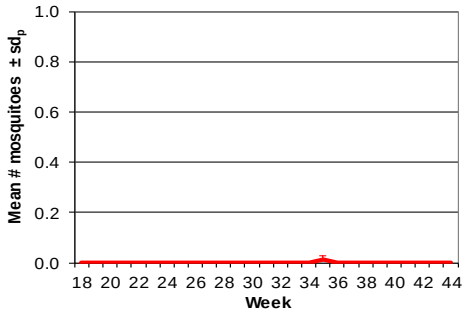
Delaware Bayshore



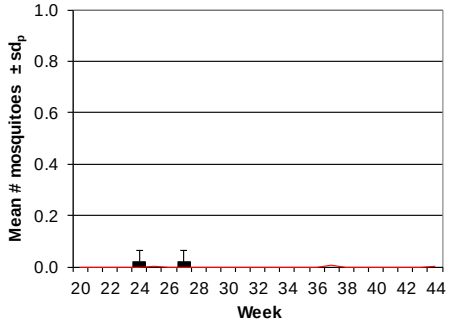
Delaware River Basin



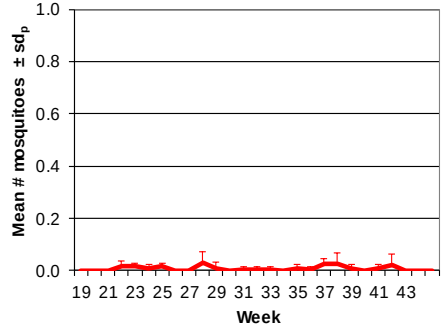
New York Metro



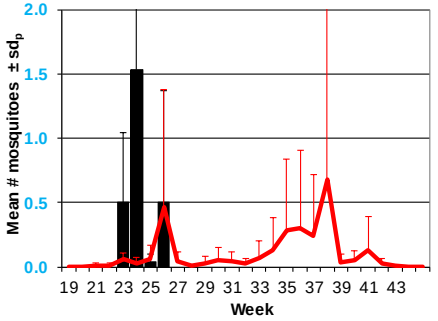
North Central Rural



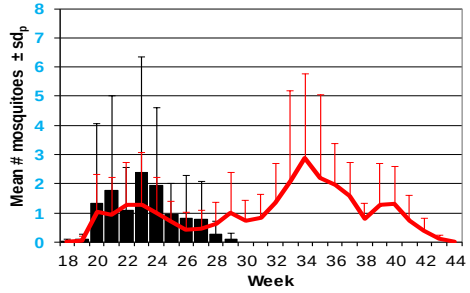
Northwestern Rural



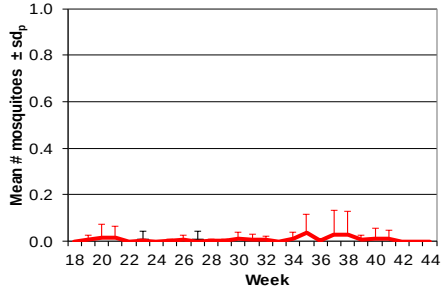
Philadelphia Metro



Pinelands



Suburban Corridor



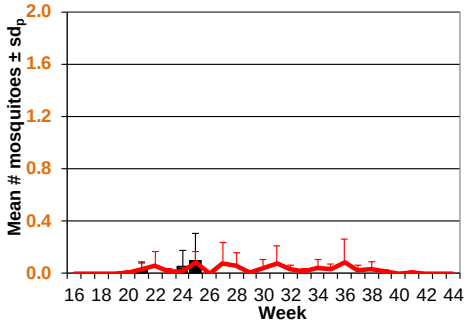
Comments

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. Currently, *Cs. melanura* populations continue to be trending around historical averages for the Delaware Bayshore and Pinelands regions. Numbers look to be decreasing in the Coastal region. Again, light trap numbers appear higher than resting box numbers.

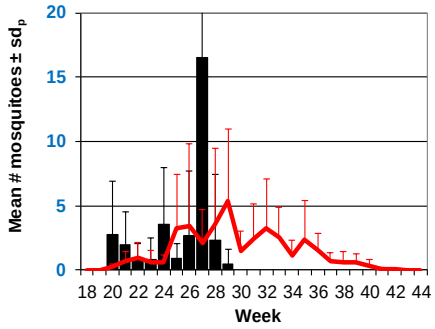
All horse owners should make sure their horses are up to date on the vaccination schedules: http://www.aaep.org/custdocs/adultvaccinationchart.pdf

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

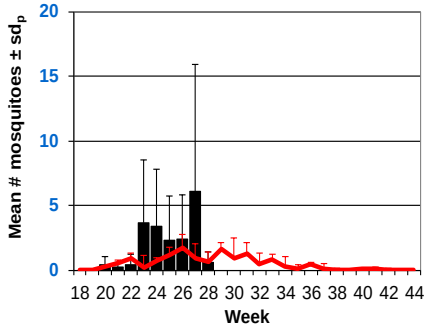
Agricultural



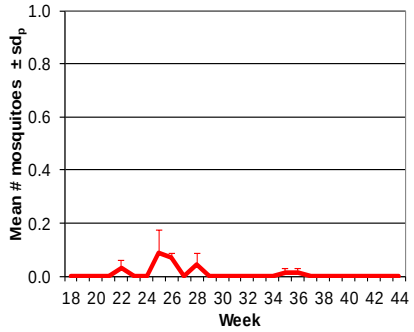
Coastal



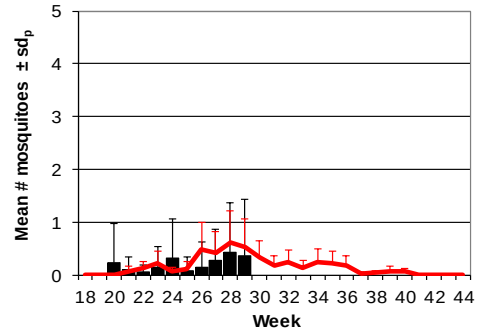
Delaware Bayshore



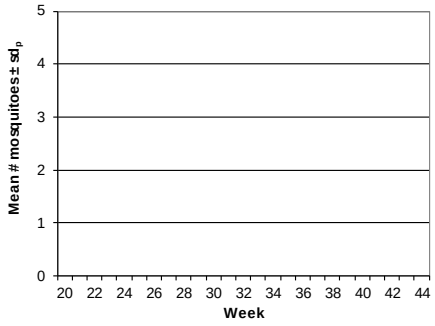
Delaware River Basin



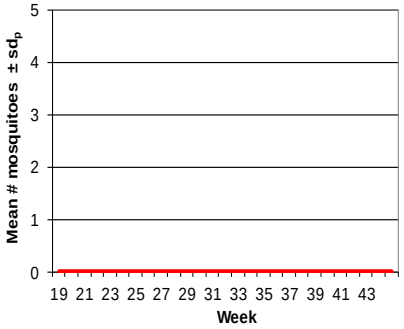
New York Metro



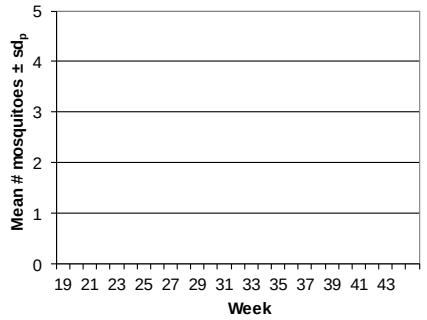
North Central Rural



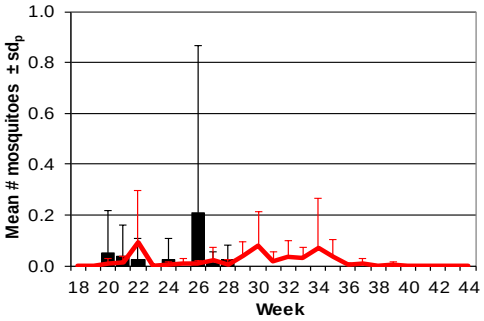
Northwestern Rural



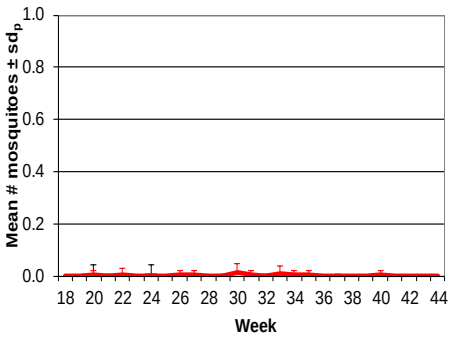
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

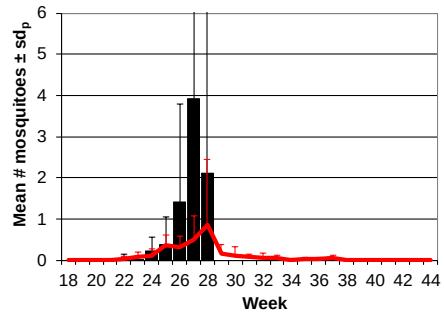
Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. Currently, *Ae. sollicitans* appear to be between tidal emergences in both the Coastal and Delaware Bayshore regions.

(**note* reset of Coastal Y-axis from max of 80 to 20)

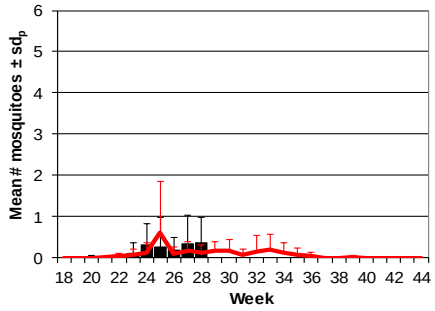
Next full moon is on the 7th August.

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

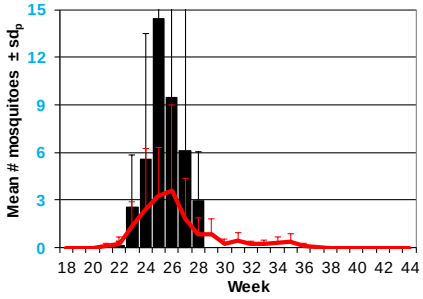
Agricultural



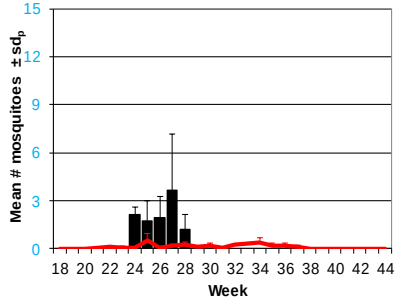
Coastal



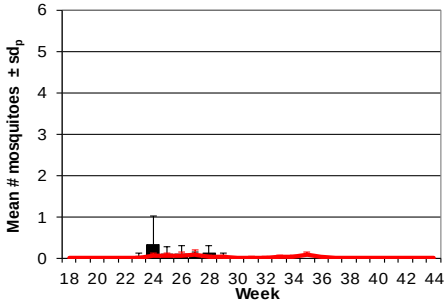
Delaware Bayshore



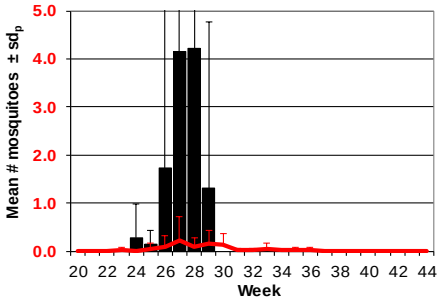
Delaware River Basin



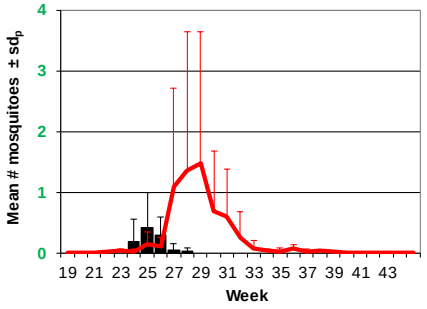
New York Metro



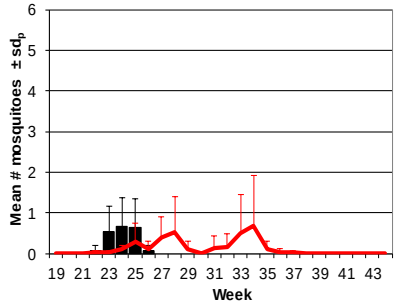
North Central Rural



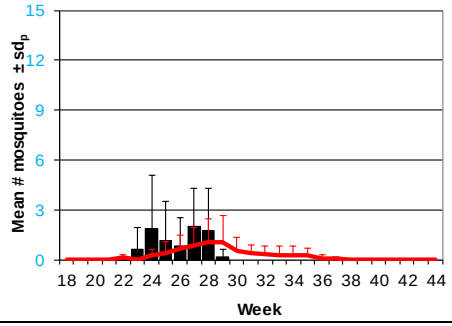
Northwestern Rural



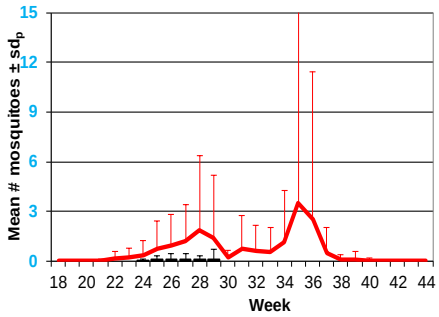
Philadelphia Metro



Pinelands



Suburban Corridor



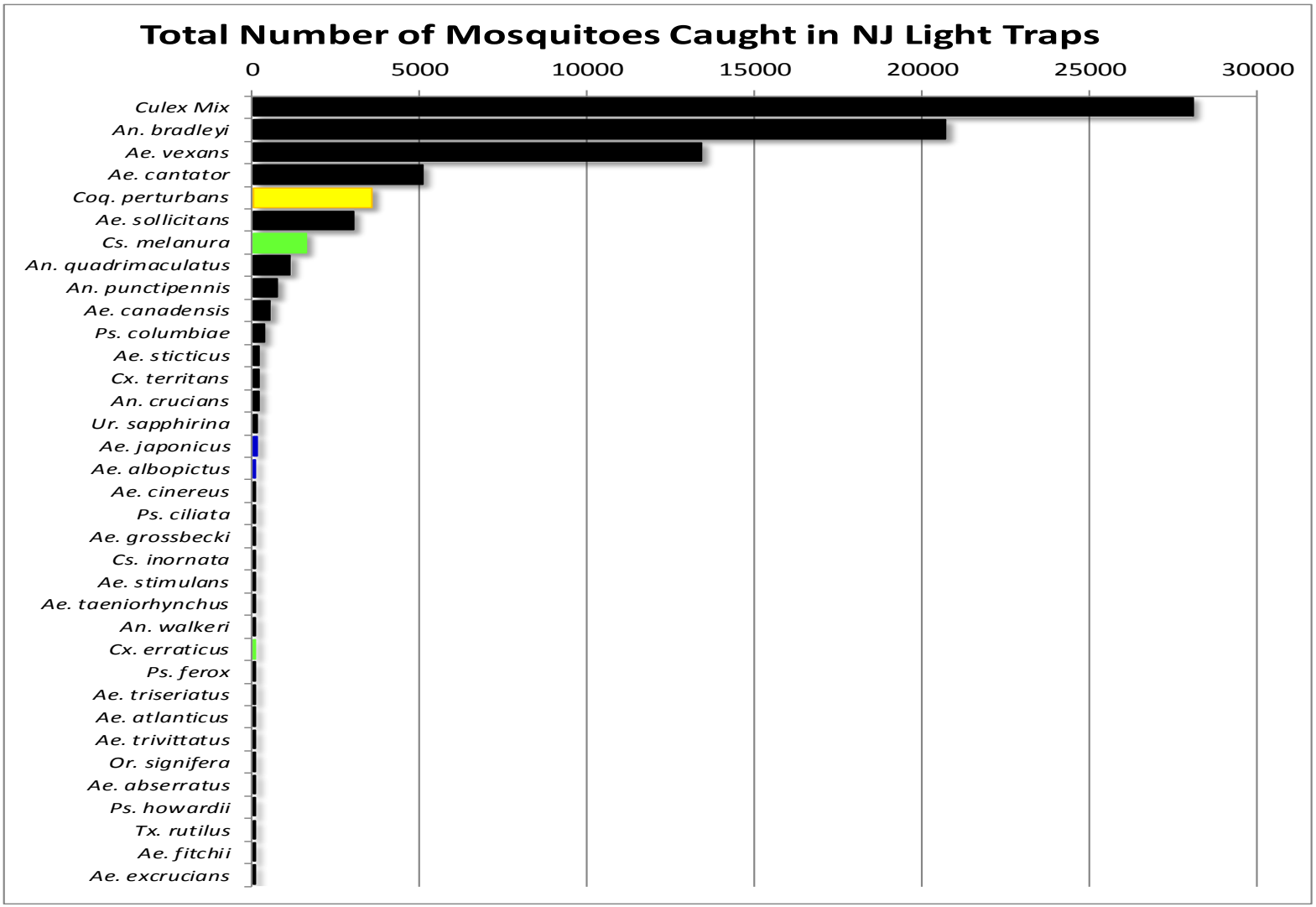
Comments

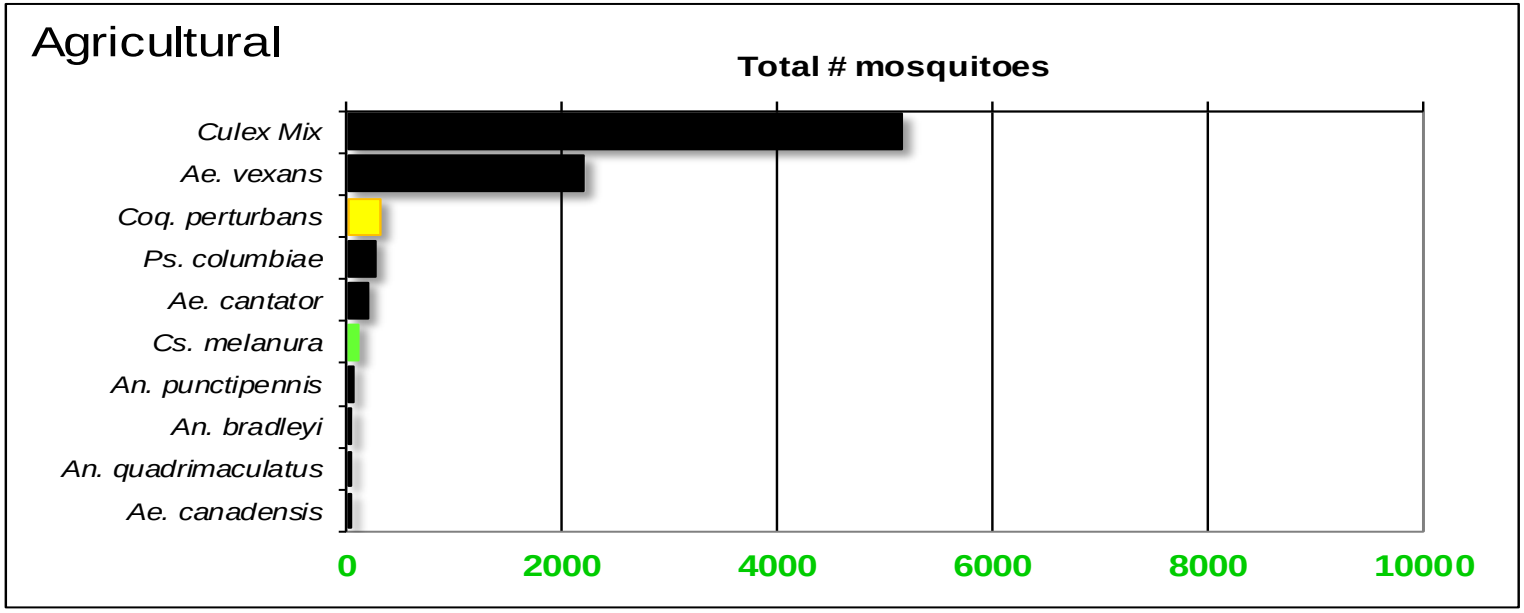
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. This mid-season species is a potential inland vector of EEE and should be monitored closely when the arbovirus is present. Significantly elevated populations of *Coq. perturbans* continued to be observed in the North Central Rural region. Higher populations may also be reported in other regions as data continues to come in.

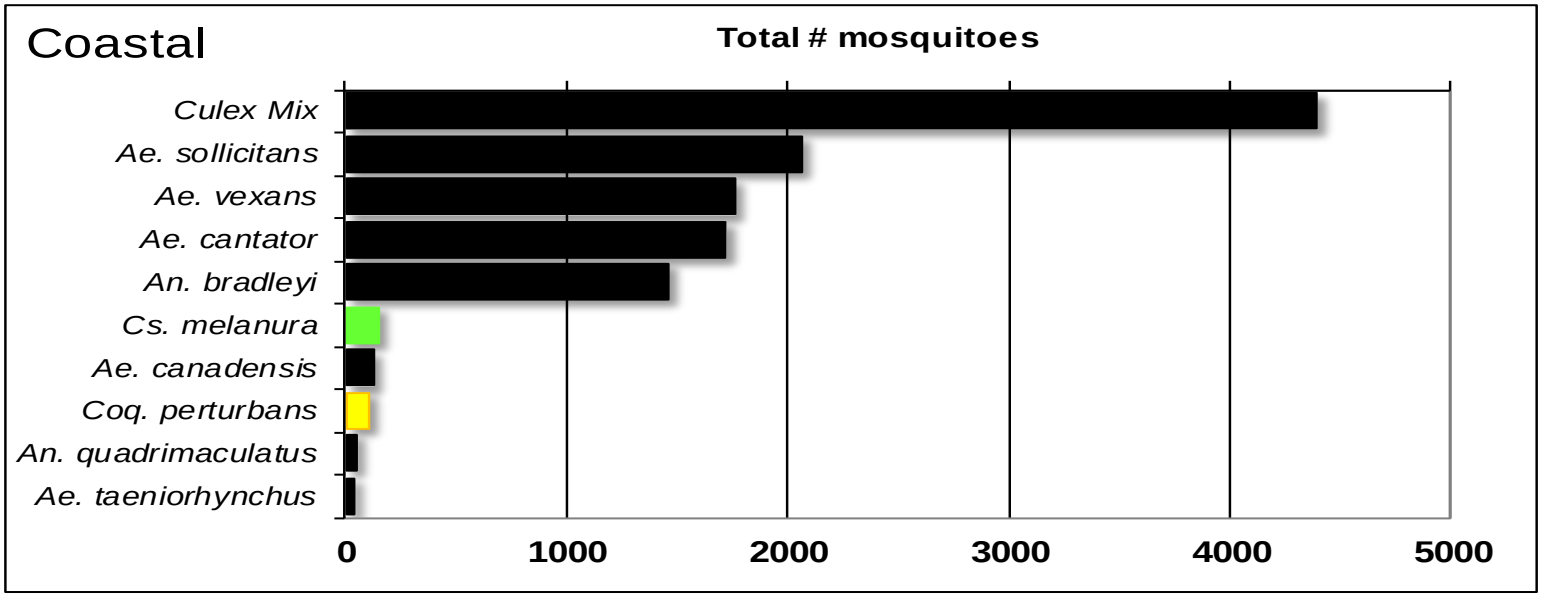
WNV *EEE*

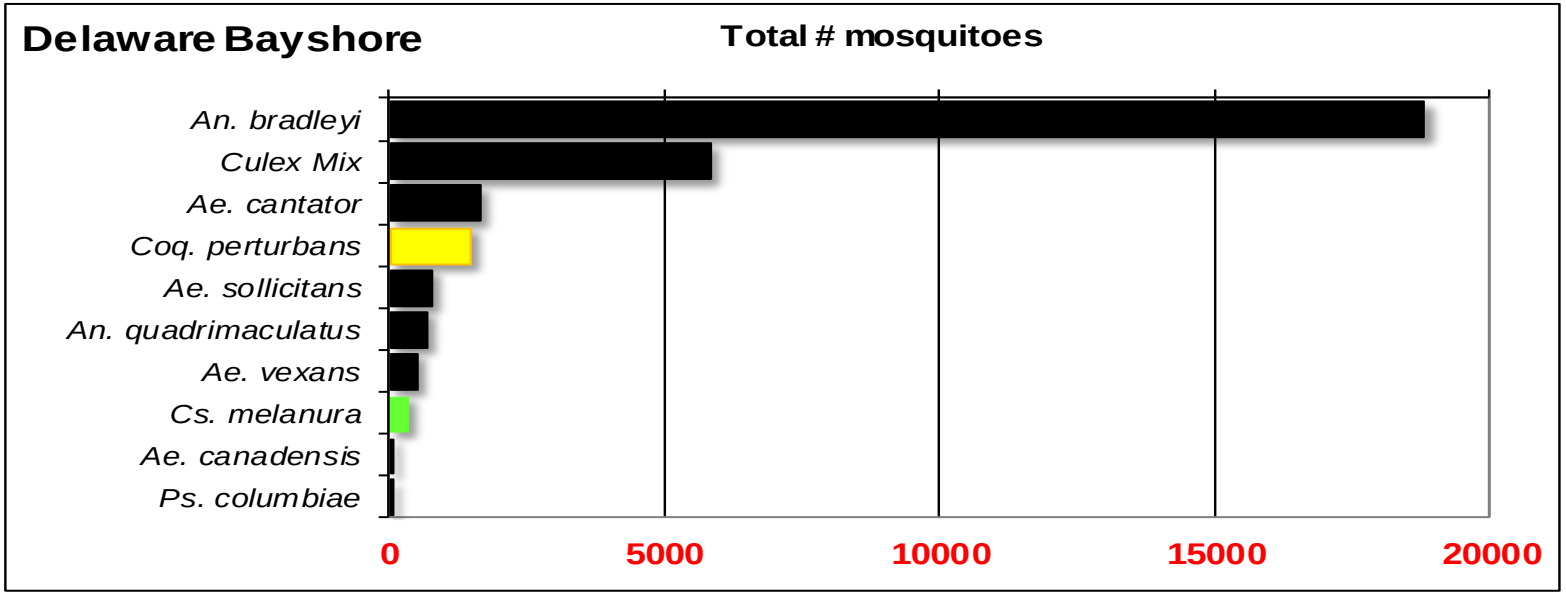
Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

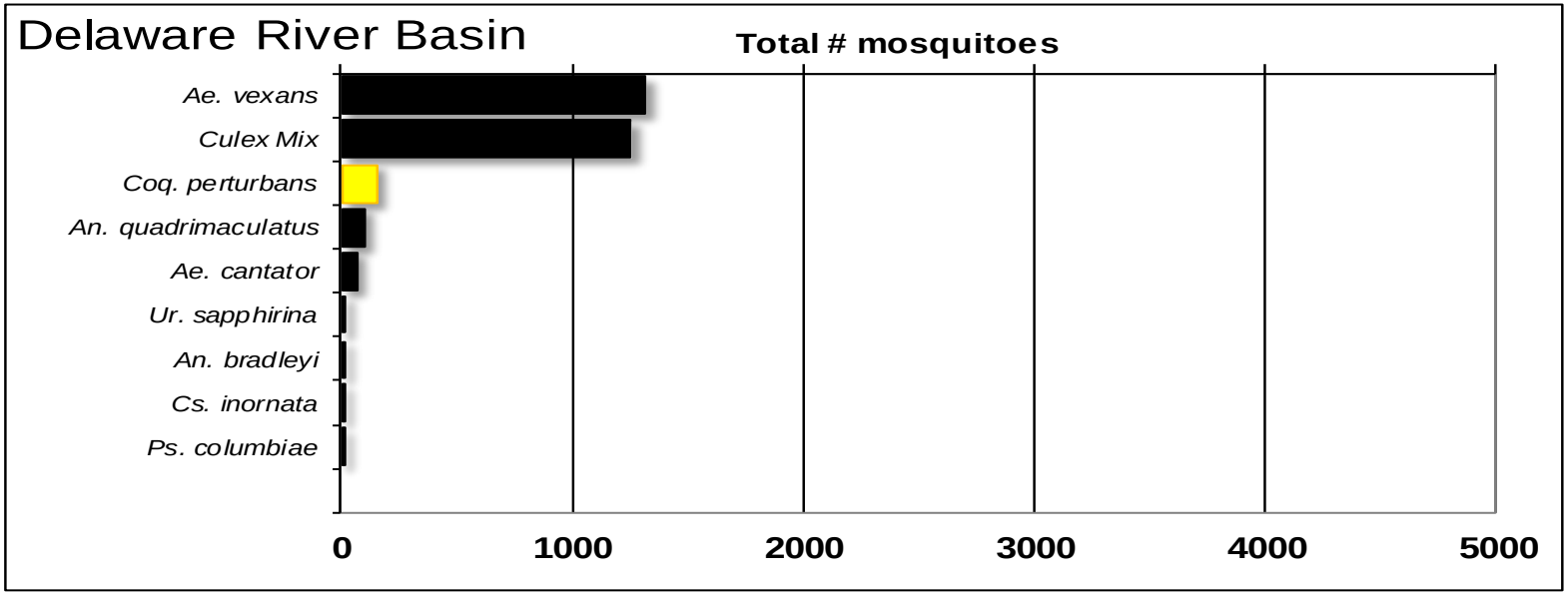
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

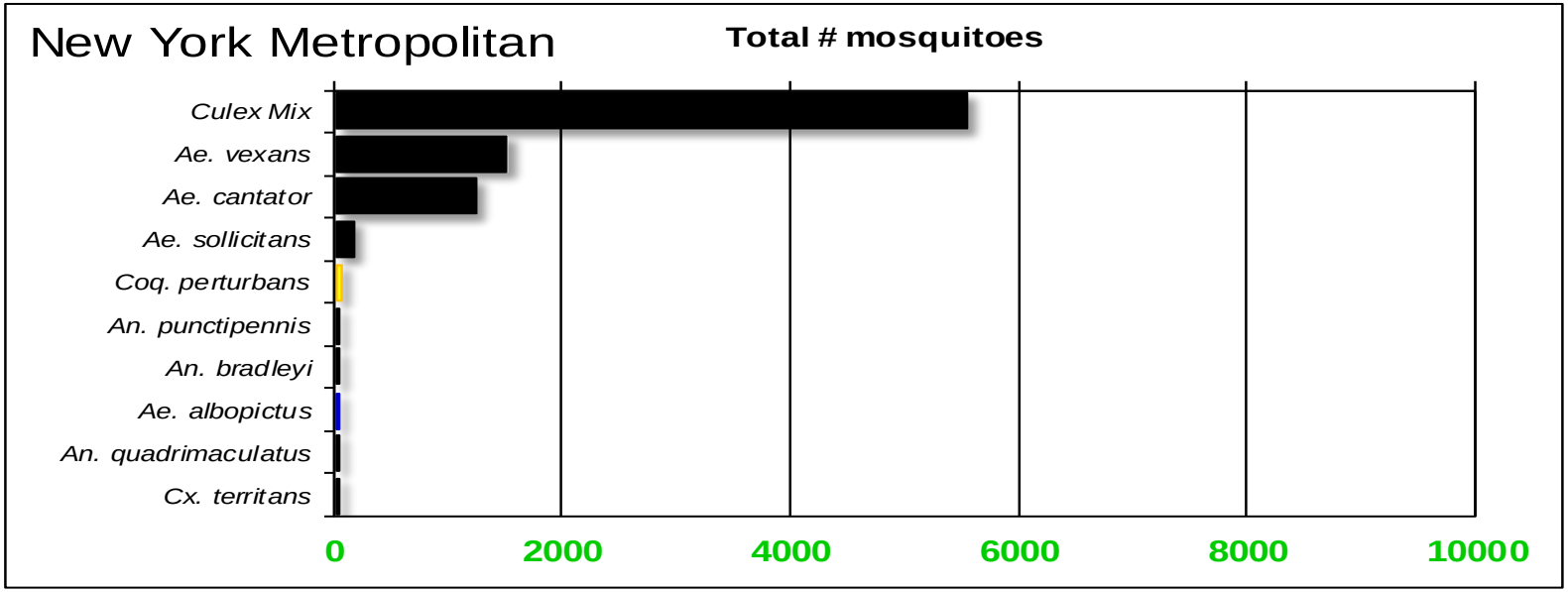


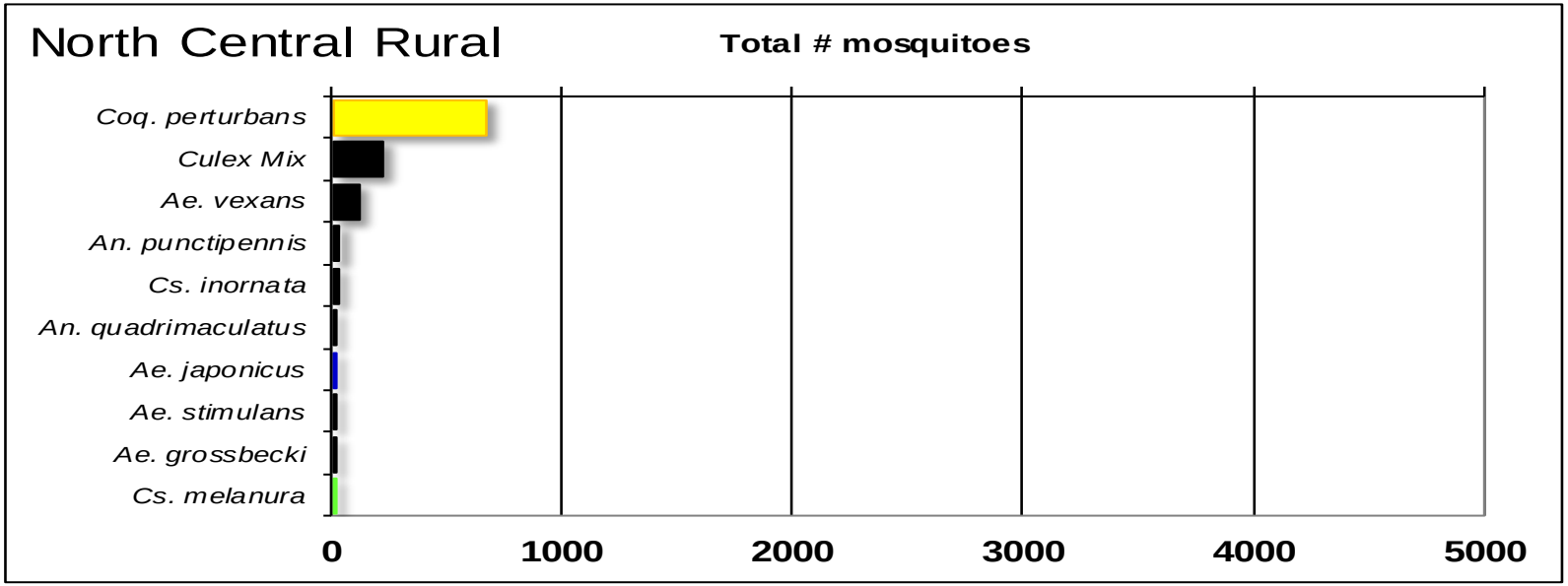

Agricultural
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Ps. columbiae
Ae. cantator
Cs. melanura
An. punctipennis
An. bradleyi
An. quadrimaculatus
Ae. canadensis
0
2000
4000
6000
8000
10000

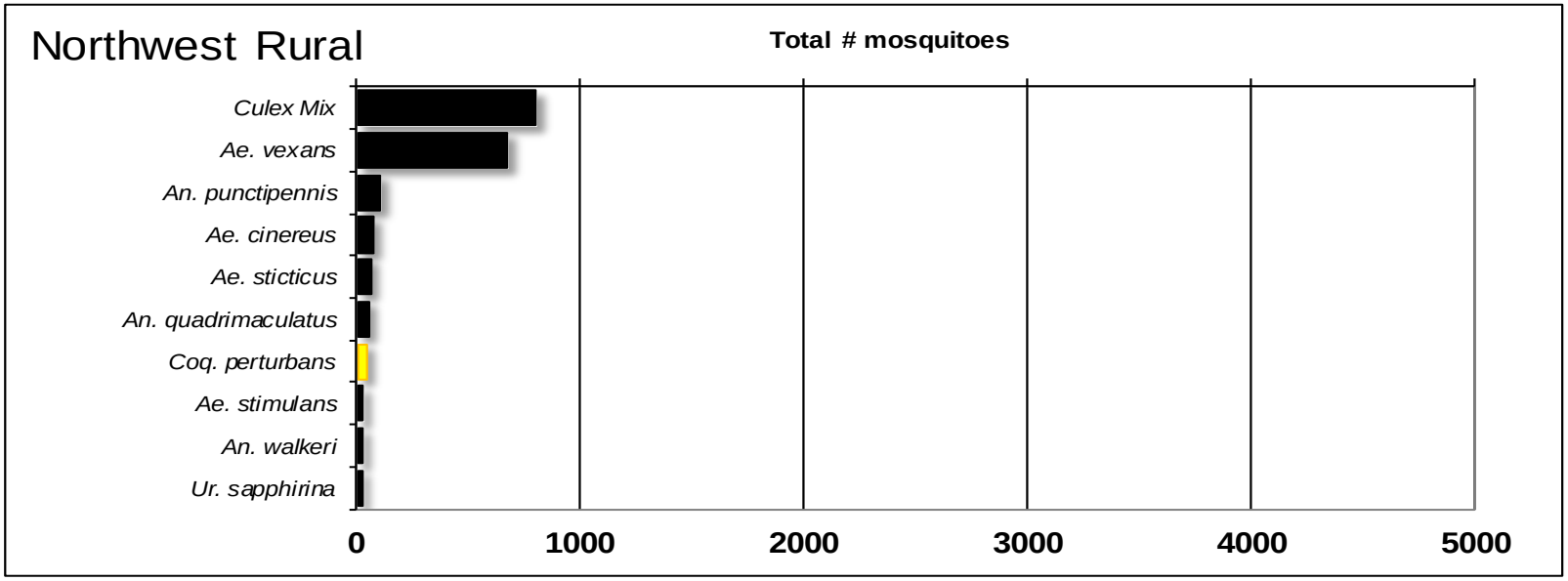

Coastal
Total # mosquitoes
Culex Mix
Ae. sollicitans
Ae. vexans
Ae. cantator
An. bradleyi
Cs. melanura
Ae. canadensis
Coq. perturbans
An. quadrimaculatus
Ae. taeniorhynchus
0
1000
2000
3000
4000
5000

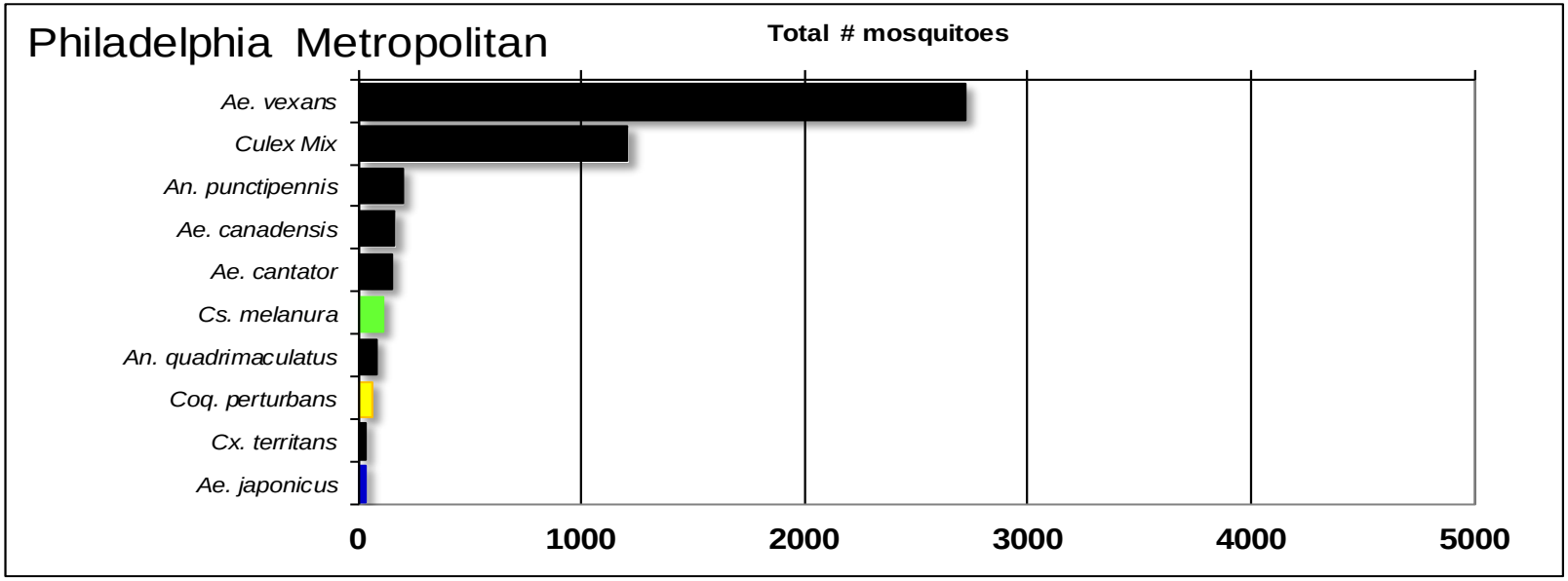

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. cantator
Coq. perturbans
Ae. sollicitans
An. quadrimaculatus
Ae. vexans
Cs. melanura
Ae. canadensis
Ps. columbiae
0
5000
10000
15000
20000

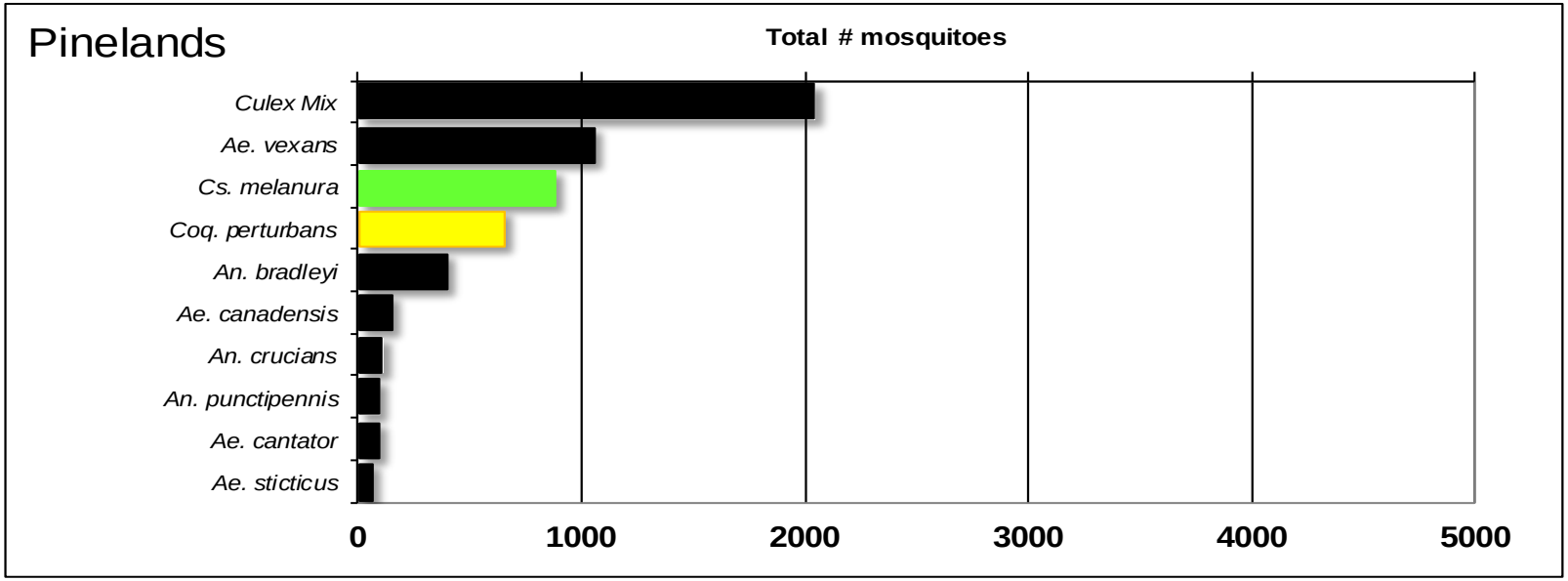

Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. quadrimaculatus
Ae. cantator
Ur. sapphirina
An. bradleyi
Cs. inornata
Ps. columbiae
0
1000
2000
3000
4000
5000

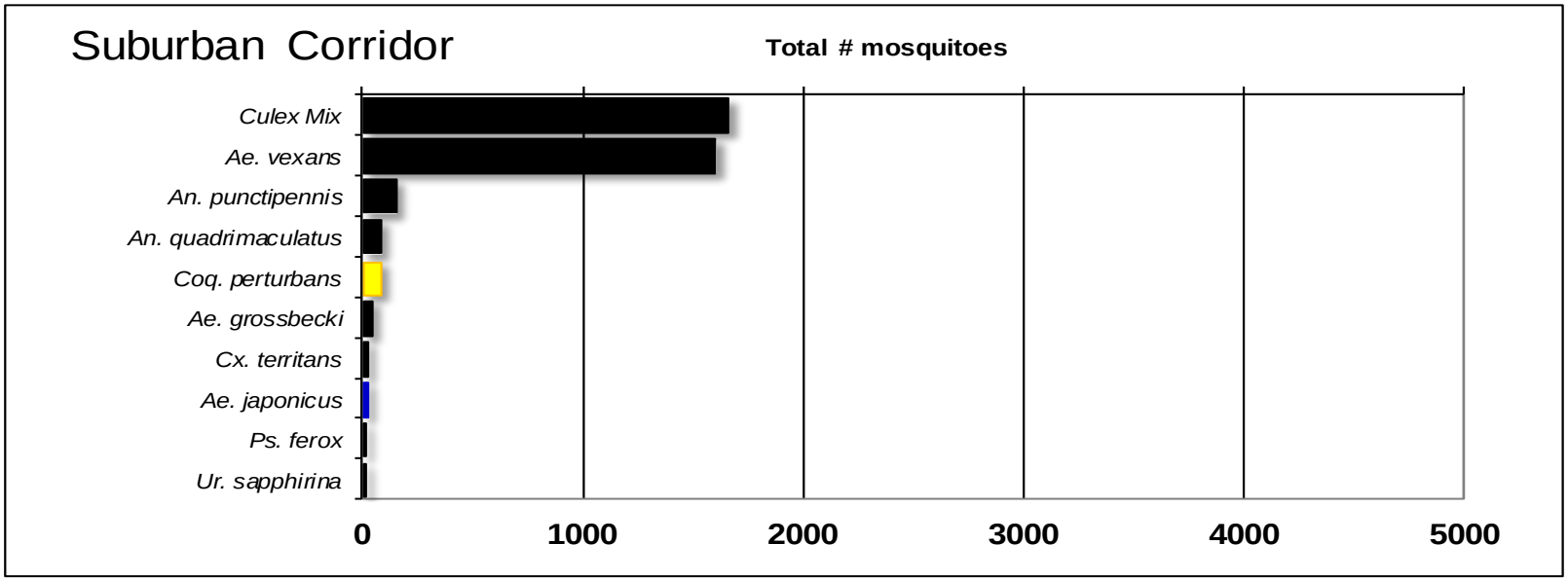

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Ae. cantator
Ae. sollicitans
Coq. perturbans
An. punctipennis
An. bradleyi
Ae. albopictus
An. quadrimaculatus
Cx. territans
0
2000
4000
6000
8000
10000


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
Culex Mix
Ae. vexans
An. punctipennis
Ae. cinereus
Ae. sticticus
An. quadrimaculatus
Coq. perturbans
Ae. stimulans
An. walkeri
Ur. sapphirina
0
1000
2000
3000
4000
5000


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


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


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