NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

11 August to 17 August 2019, CDC Week 33

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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.

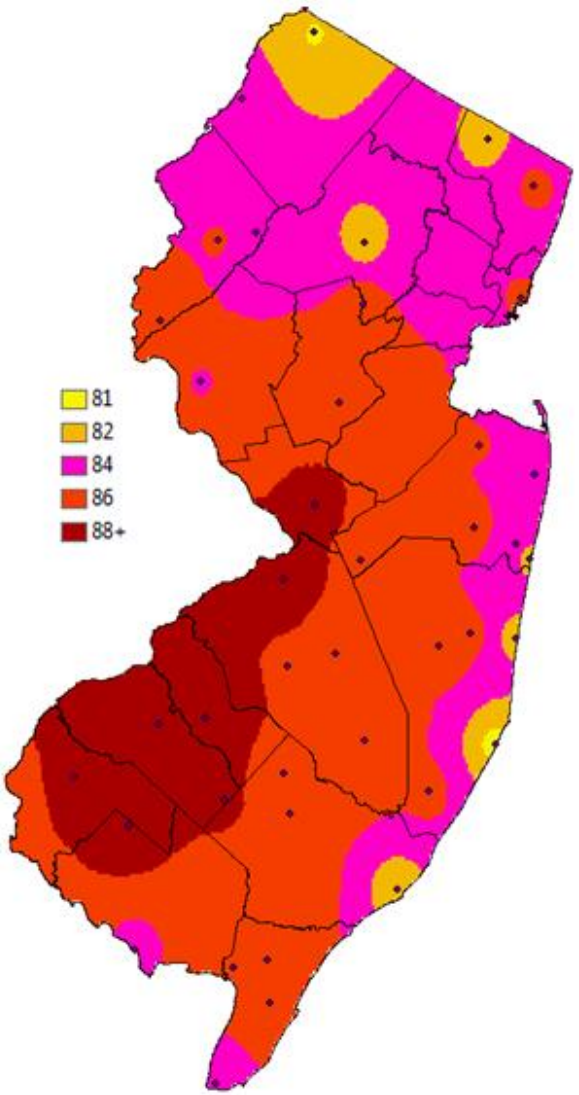
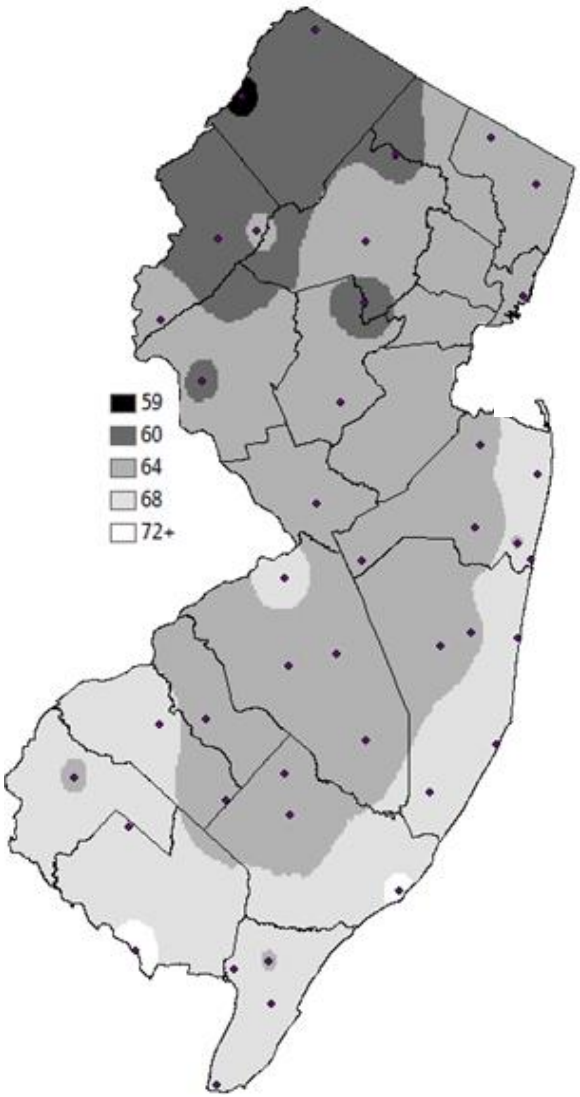
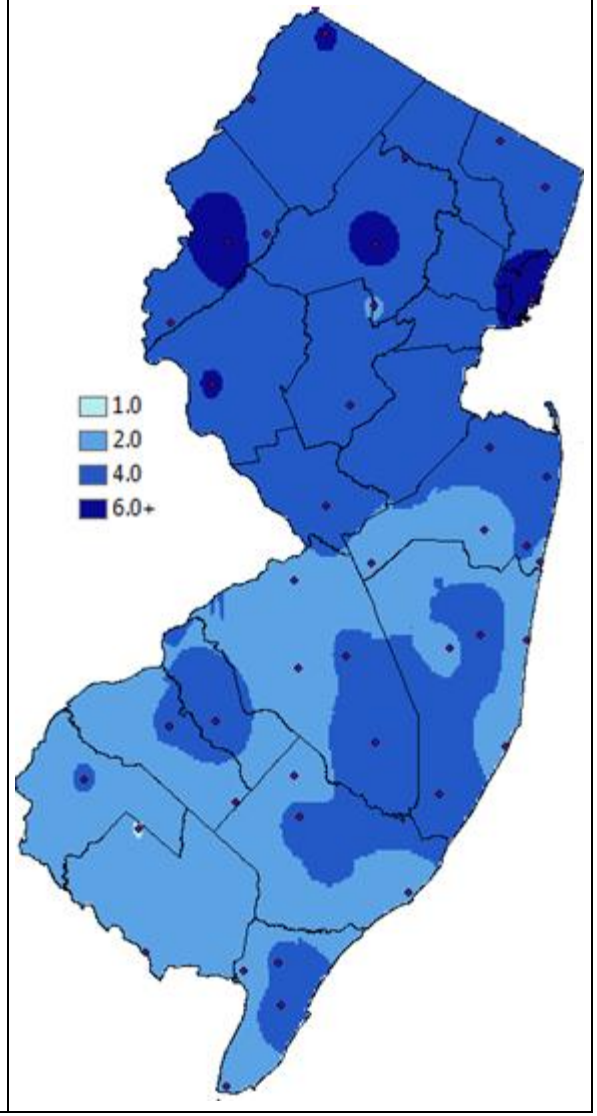
Summary Table –begin to Week 33

	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	**0.17**	**11.59**	**0**	**0.52**	**26.26**	**0**	**0.07**	**0.41**	**0**	**0.00**	**2.02**	**0**
Coastal	**0.03**	**5.74**	**0**	**0.27**	**11.04**	**0**	**0.05**	**0.14**	**0**	**0.35**	**2.55**	**0**
Delaware Bayshore	**0.05**	**2.62**	**0**	**7.93**	**10.00**	**0**	**1.06**	**0.46**	**3**	**1.63**	**2.51**	**0**
Delaware River Basin	**0.50**	**10.04**	**0**	**6.57**	**10.97**	**0**	**2.79**	**0.54**	**4**	**0.00**	**0.14**	**0**
New York Metro	**0.40**	**3.08**	**0**	**4.54**	**8.81**	**0**	**0.39**	**0.18**	**3**	**0.31**	**0.36**	**0**
North Central Rural	**0.04**	**0.70**	**0**	**0.30**	**0.28**	**1**	**0.13**	**0.12**	**1**	**0.00**	**0.00**	**0**
Northwest Rural	**3.69**	**11.07**	**0**	**0.14**	**5.61**	**0**	**0.19**	**0.06**	**4**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**13.35**	**0**	**0.00**	**3.50**	**0**	**0.00**	**0.65**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.01**	**3.20**	**0**	**0.25**	**3.51**	**0**	**0.00**	**1.89**	**0**	**0.18**	**0.43**	**0**
Suburban Corridor	**0.65**	**1.53**	**0**	**0.65**	**1.29**	**0**	**0.00**	**0.23**	**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.

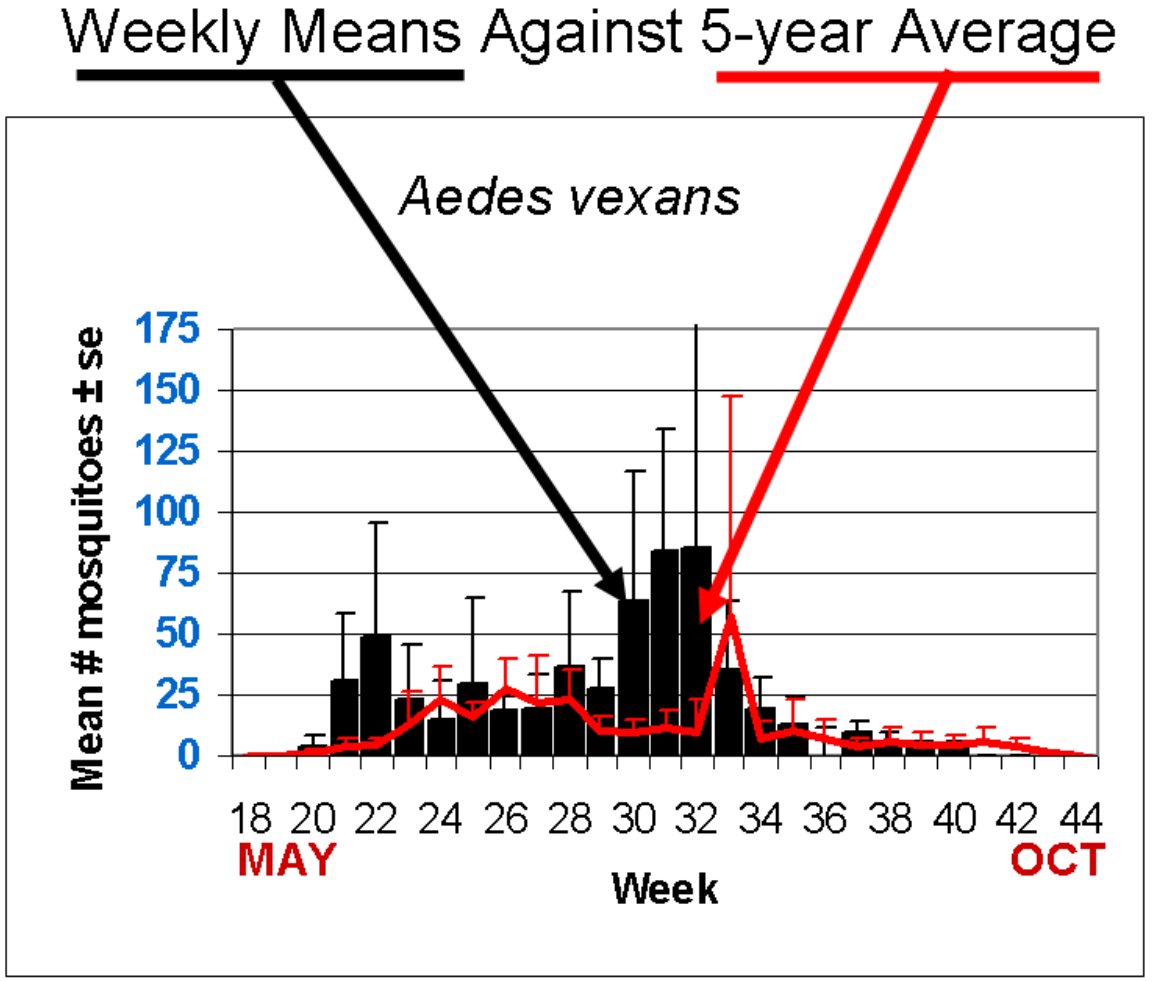
State Summary: *Coquillettidia perturbans* showed elevated populations in the Delaware Bayshore, Delaware River Basin, New York Metropolitan, the Northwestern Rural regions and to a minor extent in the North Central Rural region (along with *Culex* Mix). The two floodwater species, *Aedes vexans* and *Ae. sollicitans* remained at levels sometimes well below the running 5-year historical mean.

Climate Factors

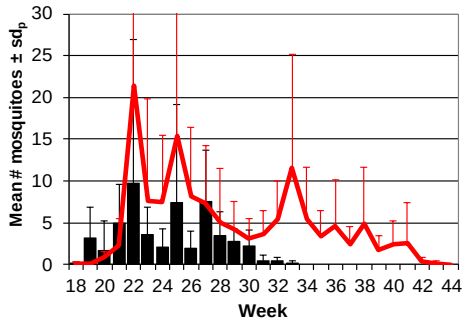
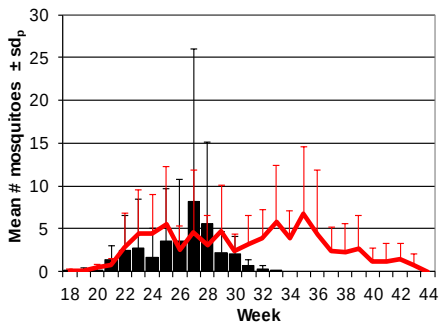
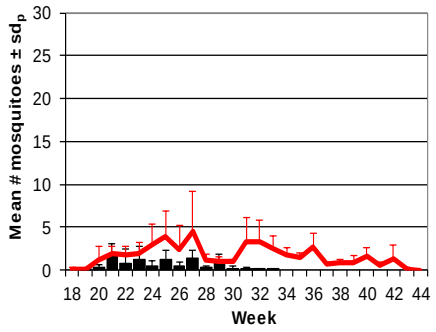
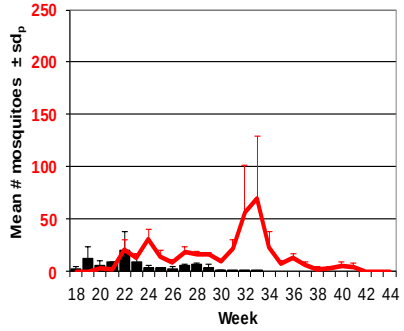
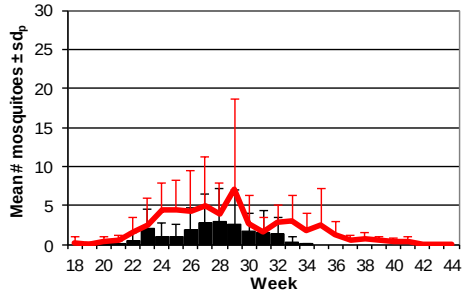
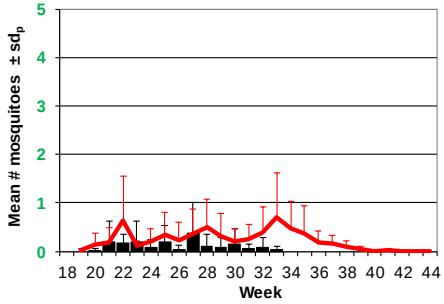
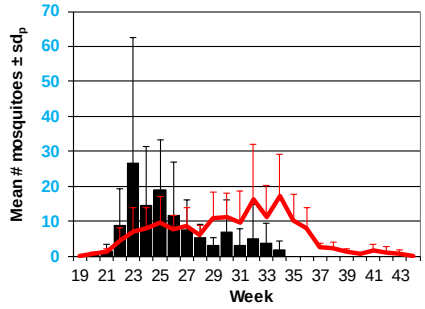
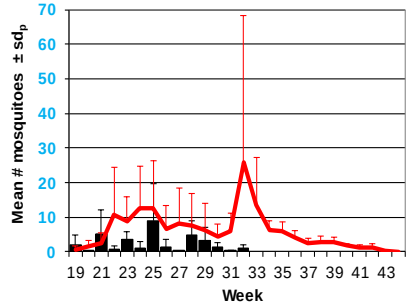
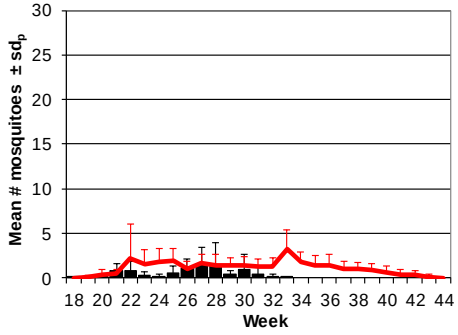
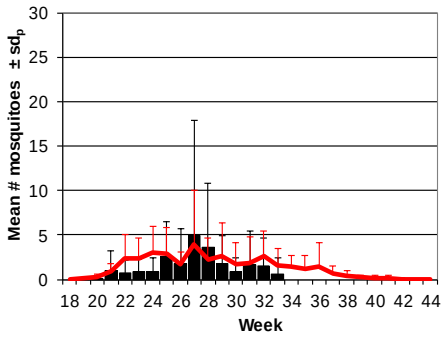
Average High Temperature	Average Low Temperature	Total Precipitation
		

The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 30 days prior to 19 August 2019 in New Jersey. Data points are from about 50 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

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 Cape May, Cumberland, Hudson, Hunterdon, Middlesex, Monmouth, Passaic, Salem, Union, and Warren counties. Data for the previous week are from Atlantic, Burlington, Cape May, Cumberland, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Passaic, Salem, Somerset, Union, and Warren counties.

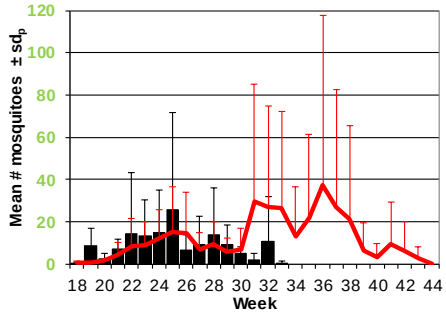


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

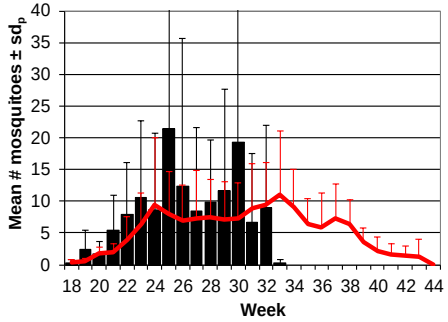
Agricultural	Coastal	Delaware Bayshore	Delaware River Basin
			
New York Metro	**North Central Rural**	**Northwestern Rural**	**Philadelphia Metro**
			
Pinelands	**Suburban Corridor**	**Comments**	
		*Aedes vexans* is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. Warm weather continues and precipitation, particularly in the northern half of the state, has been abundant. Despite this, again, no populations of those sampled for all 10 regions showed any increases above historical means, and many regions show a distinct decline in numbers.	

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

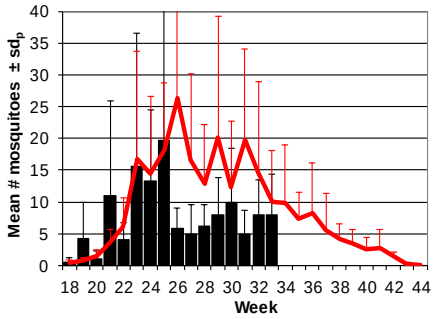
Agricultural



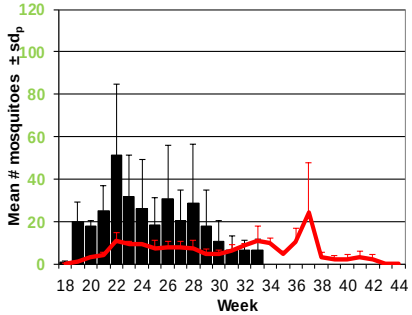
Coastal



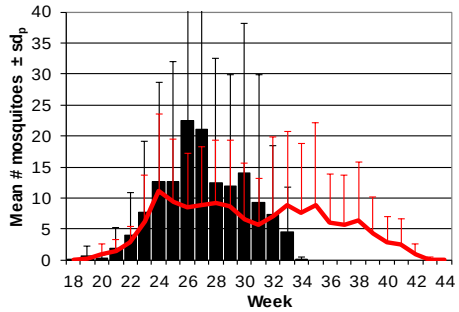
Delaware Bayshore



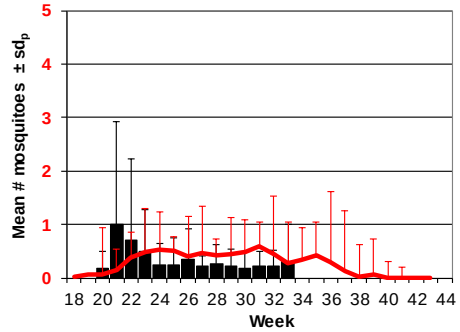
Delaware River Basin



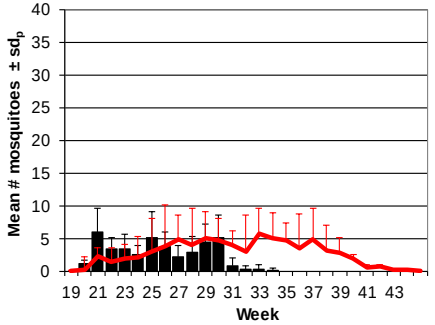
New York Metro



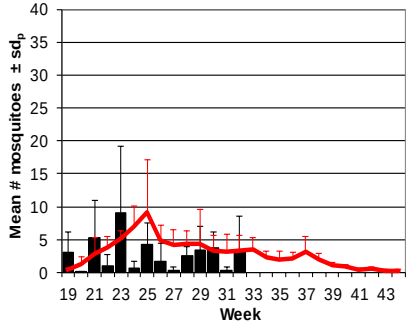
North Central Rural



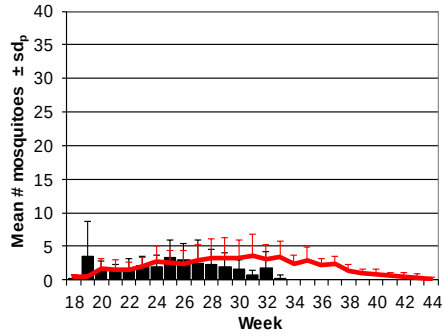
Northwestern Rural



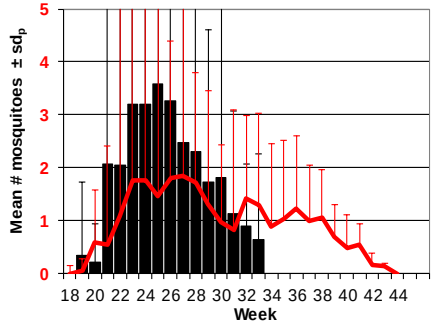
Philadelphia Metro



Pinelands



Suburban Corridor

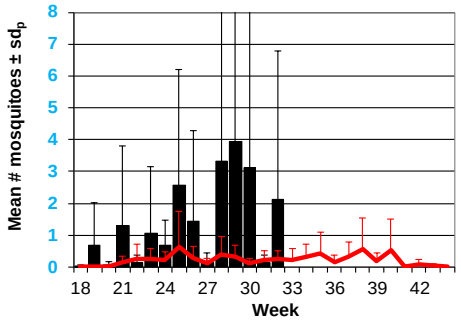


Comments

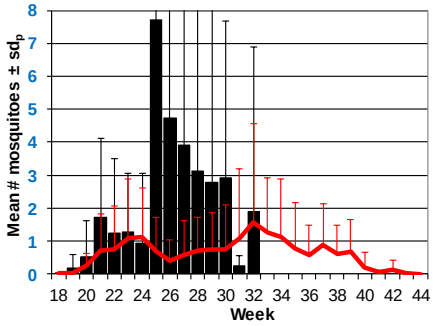
Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. Only populations in the North Central Rural show a mild increase over historical averages. Other populations, such as in the New York Metropolitan region and the Suburban Corridor (and the Delaware River Basin) show indications on population decreases that we typically see toward the end of a season. Is this reflective of the modest WNV activity seen to date?

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

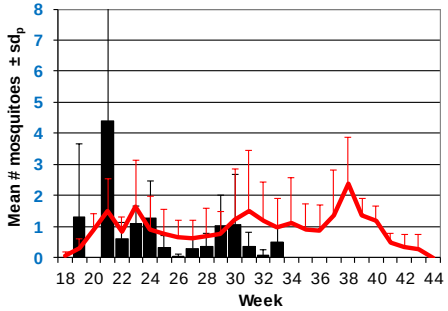
Agricultural



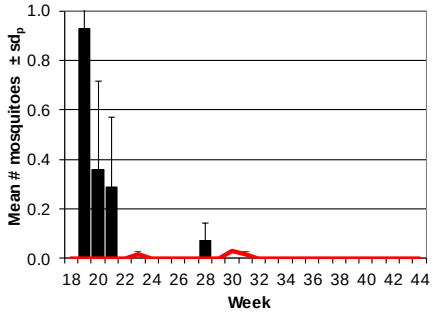
Coastal



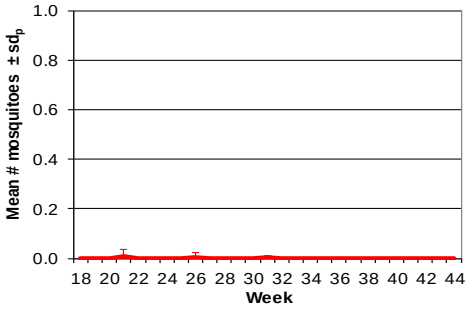
Delaware Bayshore



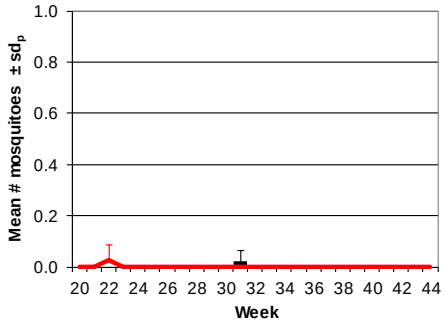
Delaware River Basin



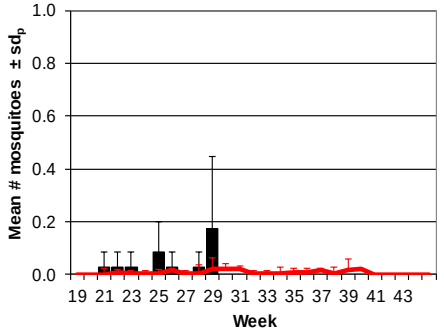
New York Metro



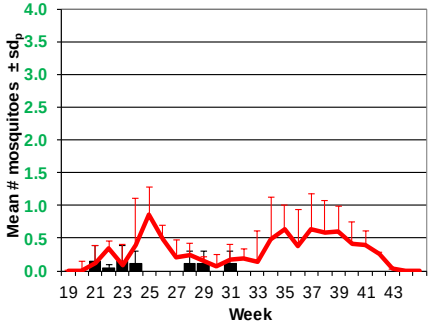
North Central Rural



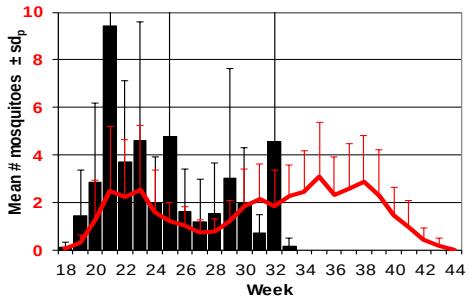
Northwestern Rural



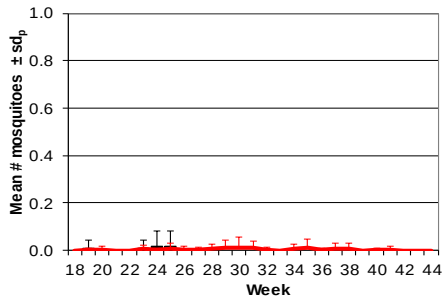
Philadelphia Metro



Pinelands



Suburban Corridor

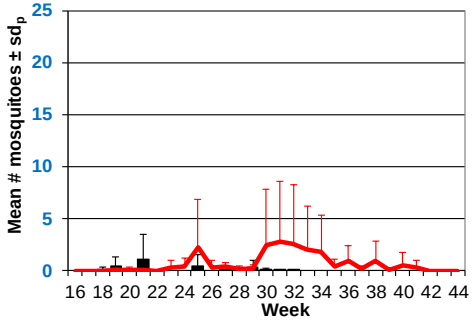
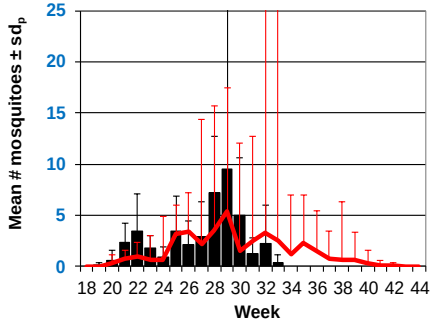
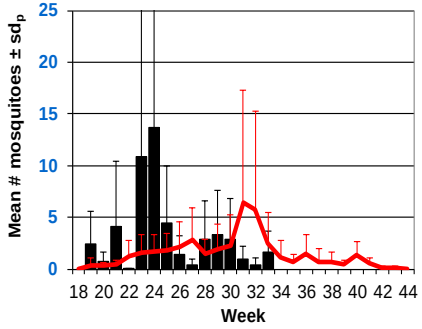
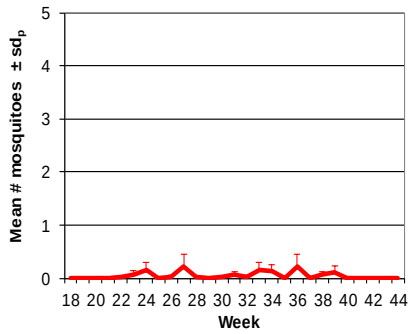
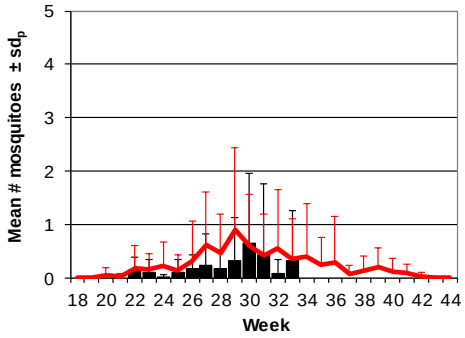
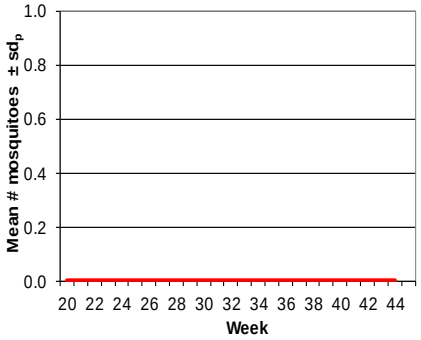
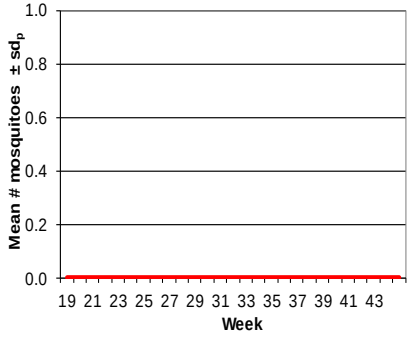
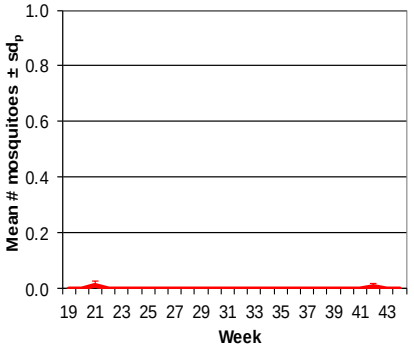
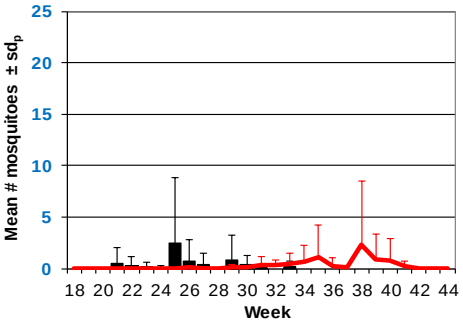
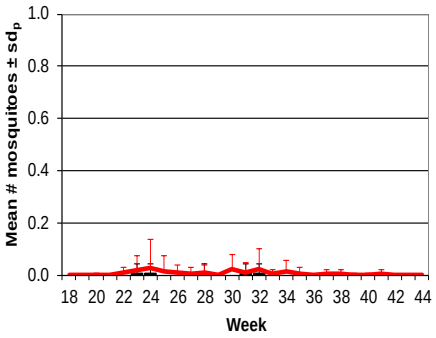


Comments

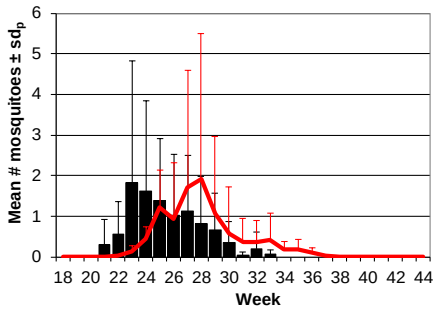
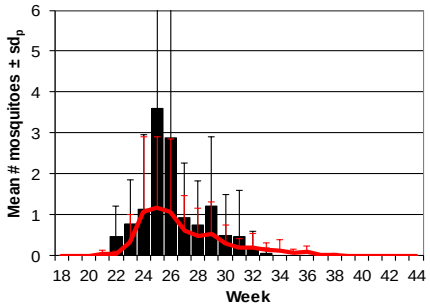
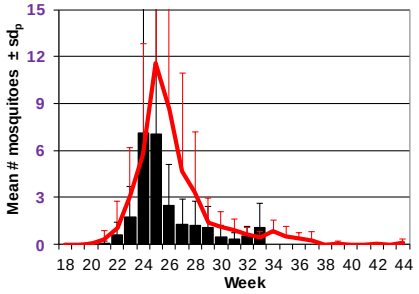
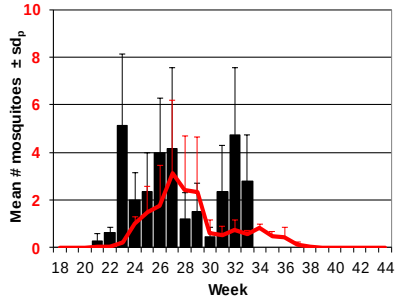
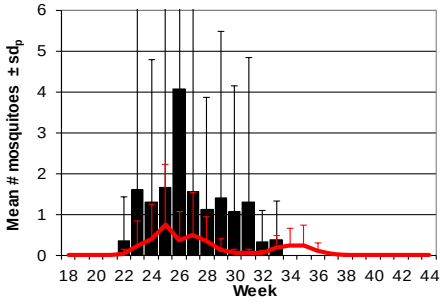
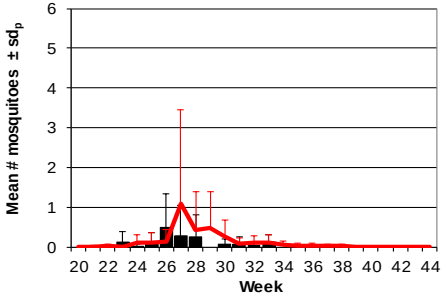
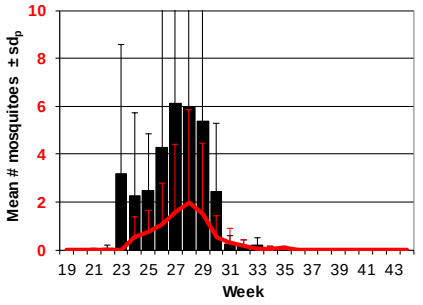
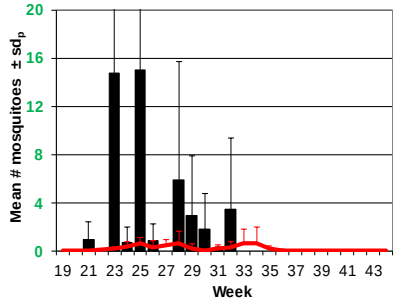
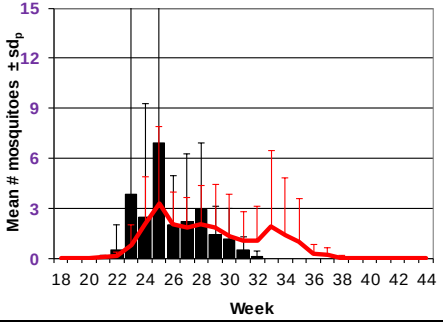
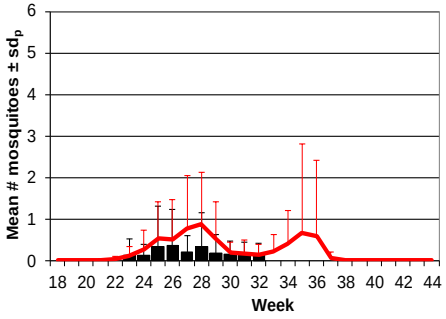
Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. This cold-hearty species can emerge early in the season as well as staying active later. No regions show abundances above historical values but this may change as data comes in. Due diligence with this species should continue given recent EEE activity.

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. As with the previous week, no regional populations showed any increase above historical level activity. Next full moon on 14 September.	

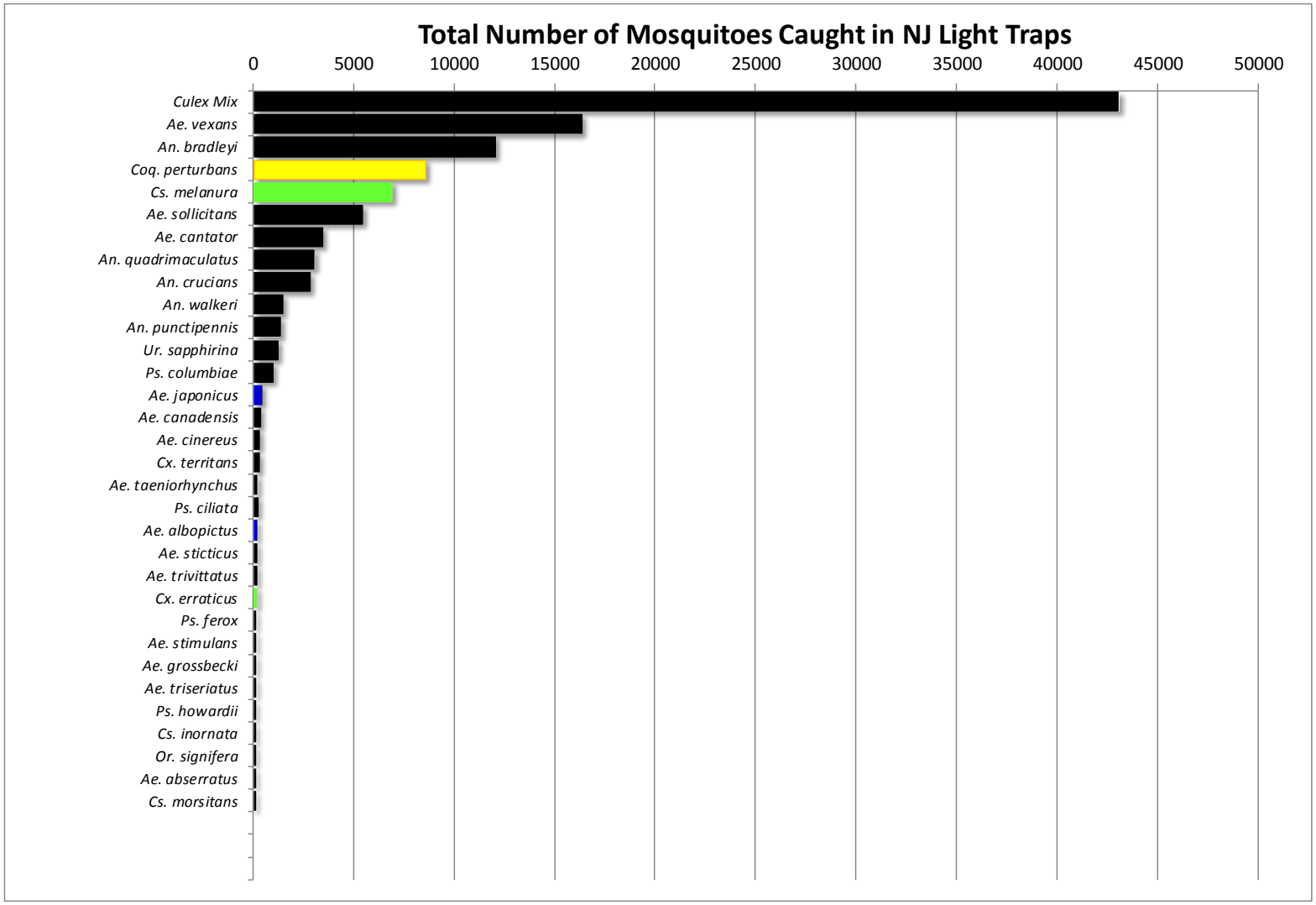
Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

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. Continuing a similar pattern as last week, activity for this species was significant in the Delaware Bayshore, the Delaware River Basin, the New York Metropolitan, and the Northwestern Rural regions. Activity in the North Central Rural region was mildly above historical values. Given the bridge vector status of this species for EEE, due diligence is required.	

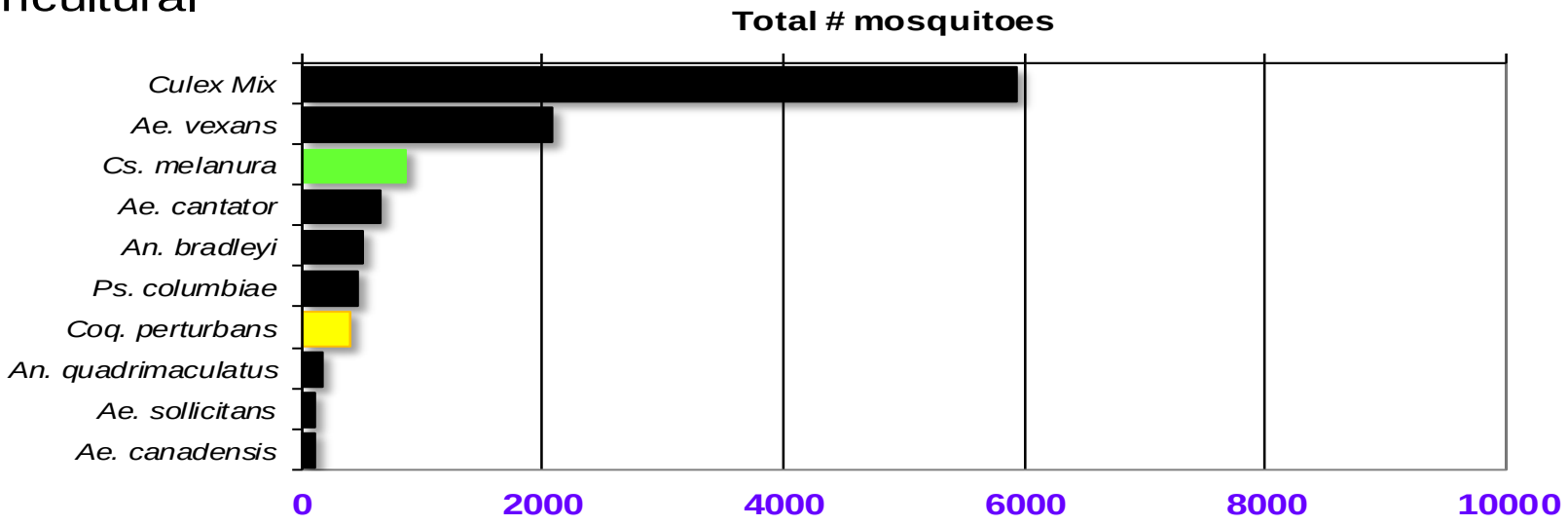
WNV *EEE*

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

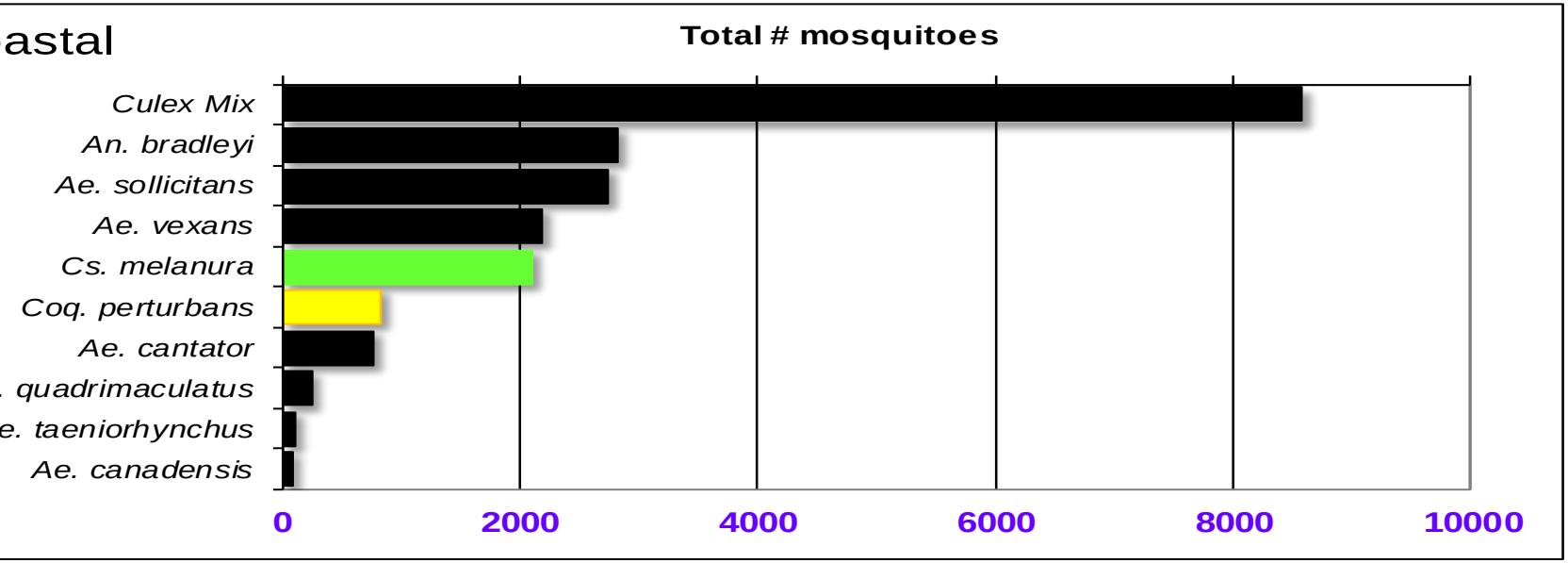
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

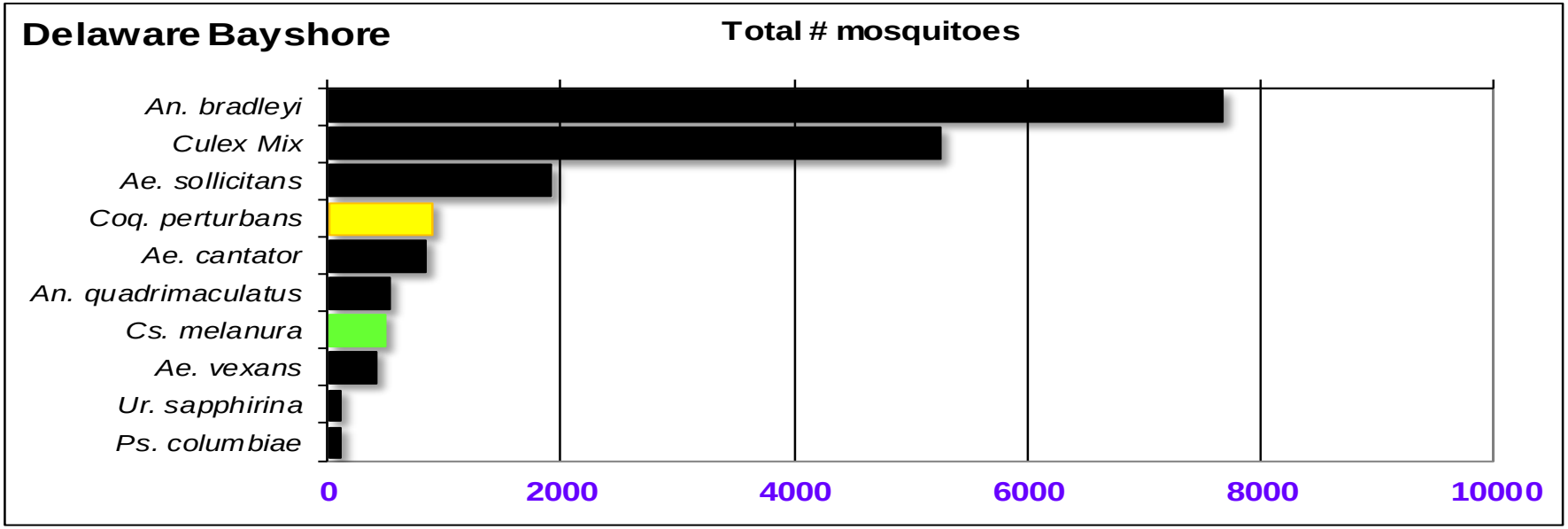


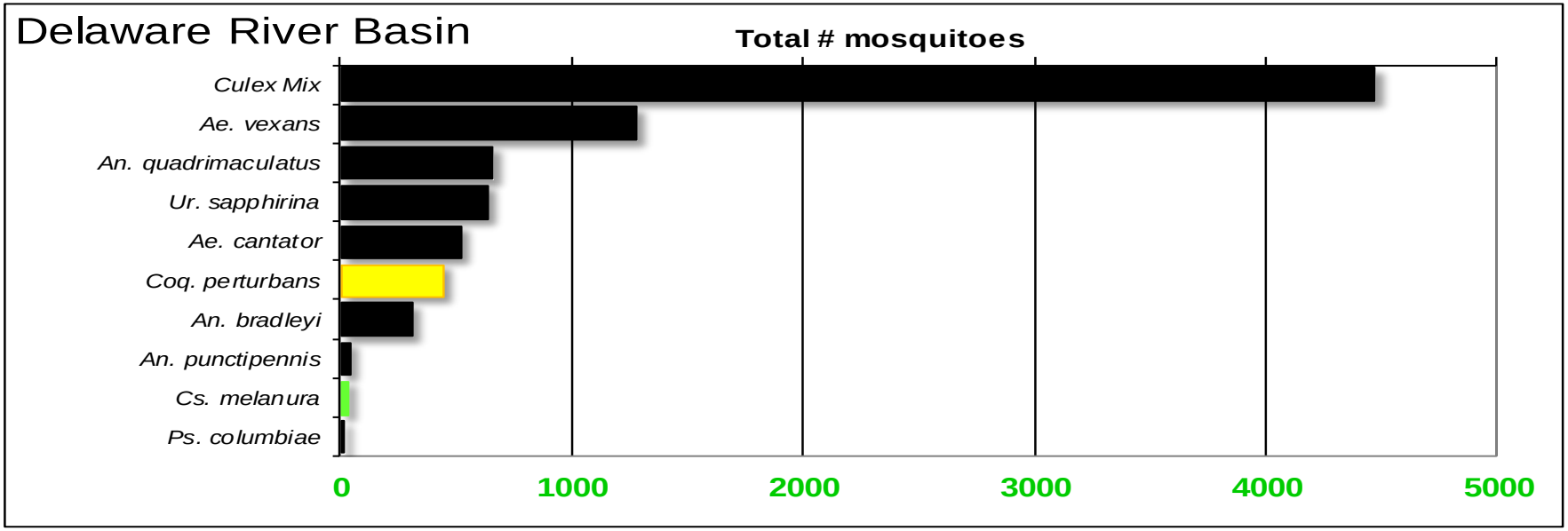
Agricultural

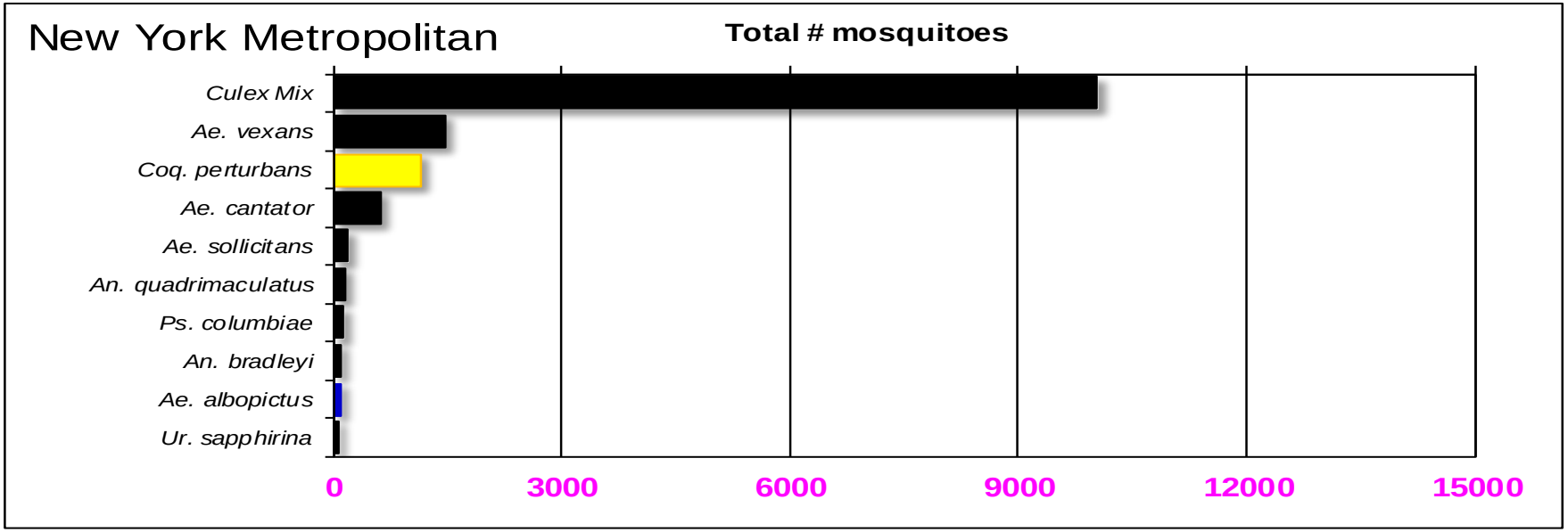


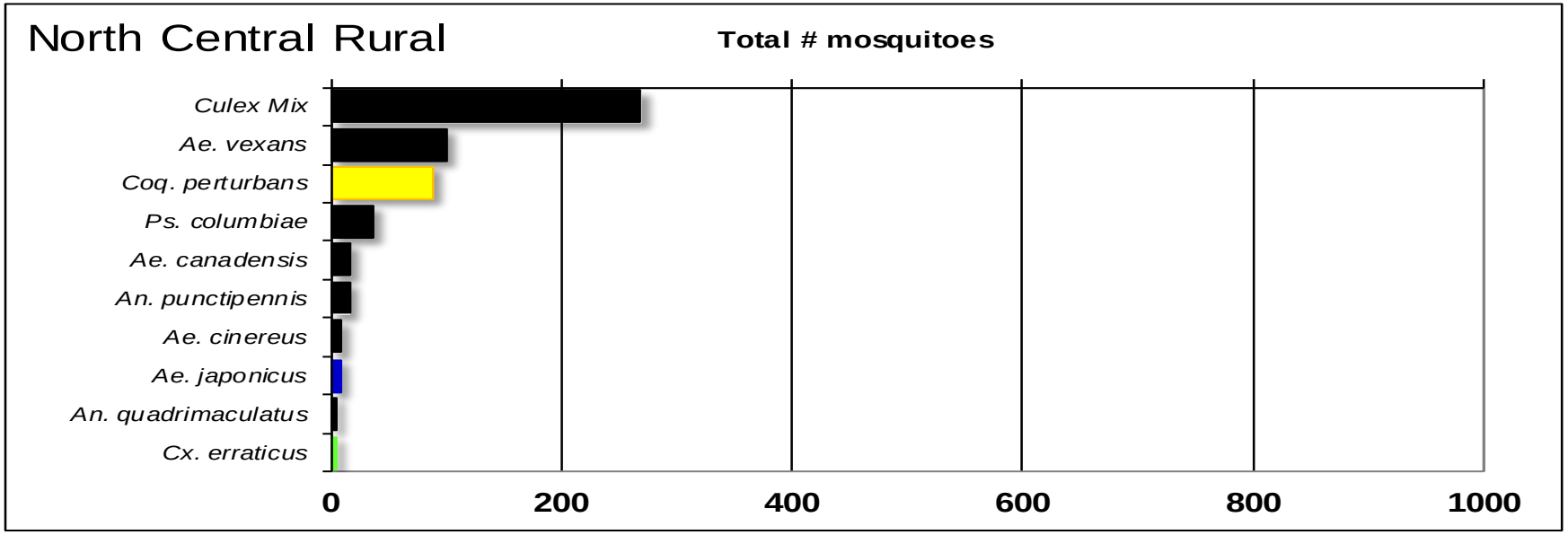
Coastal

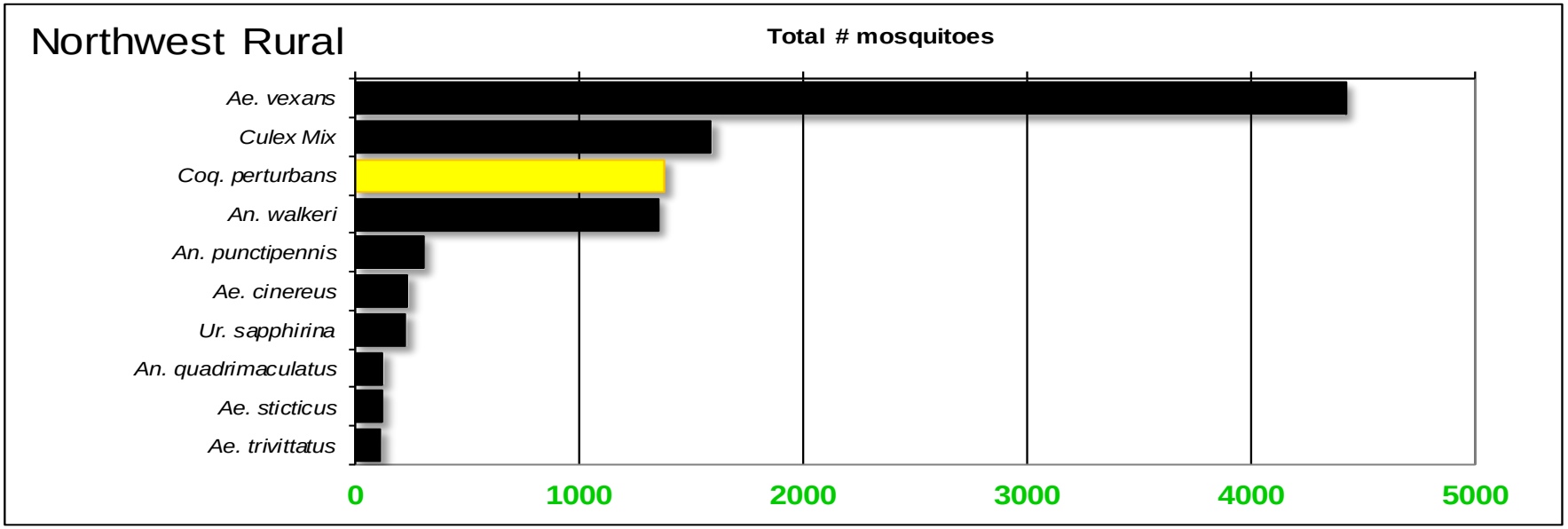


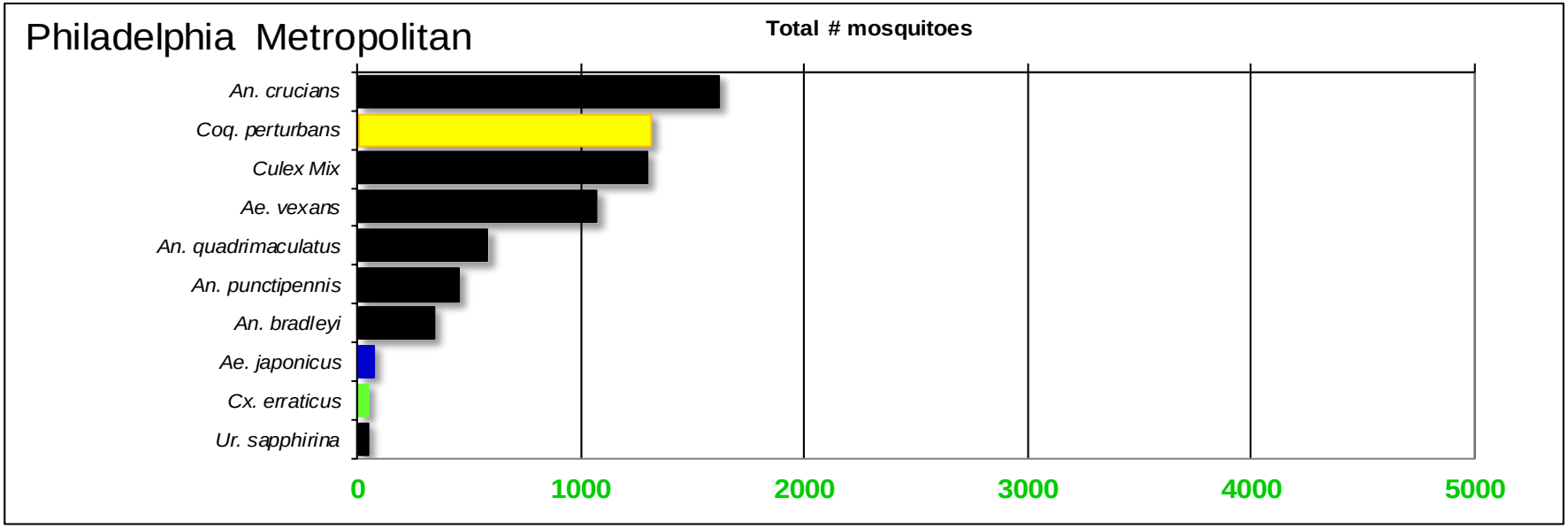

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. sollicitans
Coq. perturbans
Ae. cantator
An. quadrimaculatus
Cs. melanura
Ae. vexans
Ur. sapphirina
Ps. columbiae
0
2000
4000
6000
8000
10000

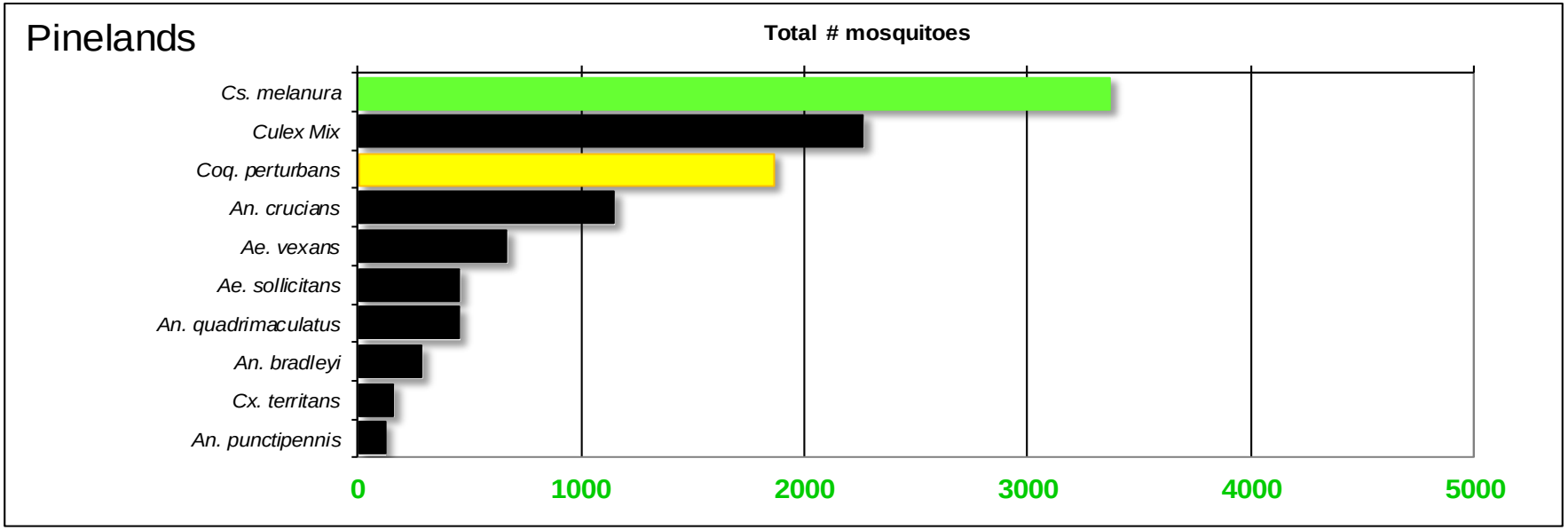

Delaware River Basin
Total # mosquitoes
Culex Mix
Ae. vexans
An. quadrimaculatus
Ur. sapphirina
Ae. cantator
Coq. perturbans
An. bradleyi
An. punctipennis
Cs. melanura
Ps. columbiae
0
1000
2000
3000
4000
5000

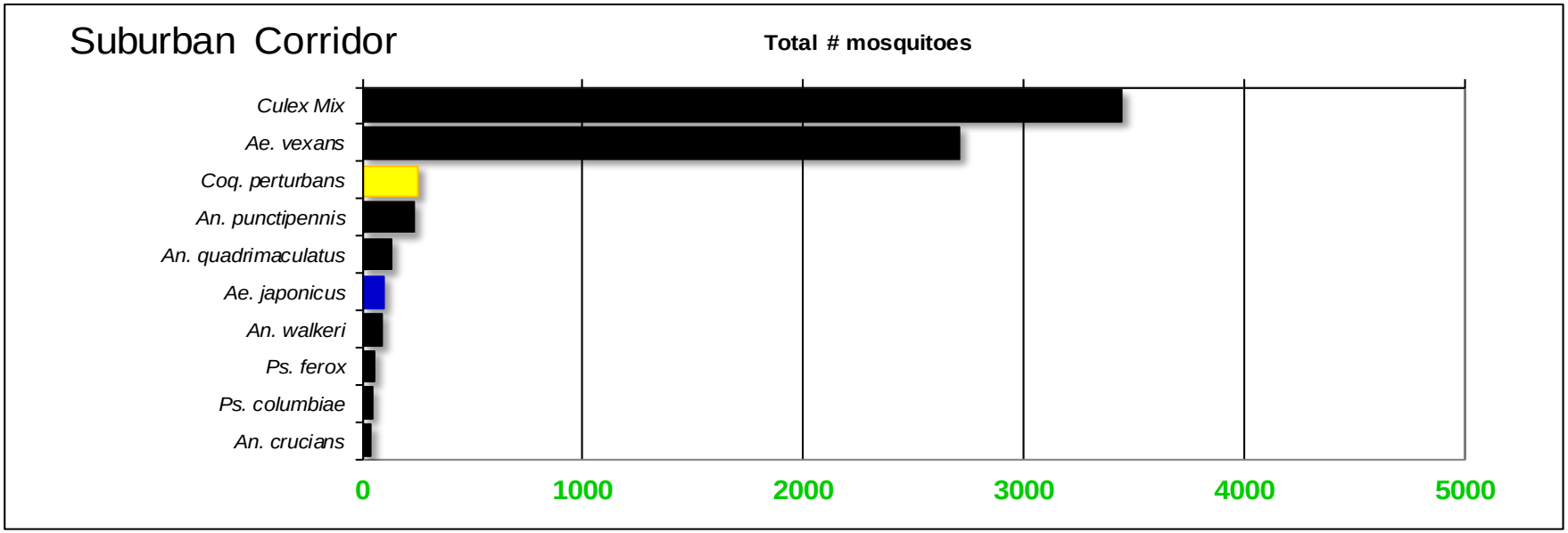

New York Metropolitan
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Ae. cantator
Ae. sollicitans
An. quadrimaculatus
Ps. columbiae
An. bradleyi
Ae. albopictus
Ur. sapphirina
0
3000
6000
9000
12000
15000


North Central Rural
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
Ps. columbiae
Ae. canadensis
An. punctipennis
Ae. cinereus
Ae. japonicus
An. quadrimaculatus
Cx. erraticus
0
200
400
600
800
1000


Northwest Rural
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
An. walkeri
An. punctipennis
Ae. cinereus
Ur. sapphirina
An. quadrimaculatus
Ae. sticticus
Ae. trivittatus
0
1000
2000
3000
4000
5000


Philadelphia Metropolitan
Total # mosquitoes
An. crucians
Coq. perturbans
Culex Mix
Ae. vexans
An. quadrimaculatus
An. punctipennis
An. bradleyi
Ae. japonicus
Cx. erraticus
Ur. sapphirina
0
1000
2000
3000
4000
5000


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


Suburban Corridor
Total # mosquitoes
Culex Mix
Ae. vexans
Coq. perturbans
An. punctipennis
An. quadrimaculatus
Ae. japonicus
An. walkeri
Ps. ferox
Ps. columbiae
An. crucians
0
1000
2000
3000
4000
5000