

HUDSON REGIONAL HEALTH COMMISSION  
MEADOWVIEW COMPLEX  
595 COUNTY AVENUE, BUILDING 1, SECAUCUS, NEW JERSEY 07094  
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Vincent J. Rivelli, President

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## **Monthly Summaries**

### **Mosquito and West Nile Virus Surveillance**

**May through August 2007**

If you would like additional information regarding the Mosquito Control Program:

Please visit: <http://www.hudsonregional.org/mosquito/>

#### **Mosquito and Vector Control Unit**

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The Hudson Regional Health Commission also conducts Environmental Health and Emergency Preparedness programs. If you would like additional information:

Please visit: <http://www.hudsonregional.org>

“SERVING BAYONNE, EAST NEWARK, GUTTENBERG, HARRISON, HOBOKEN,  
JERSEY CITY, KEARNY, NORTH BERGEN, SECAUCUS,  
UNION CITY, WEEHAWKEN, WEST NEW YORK.”

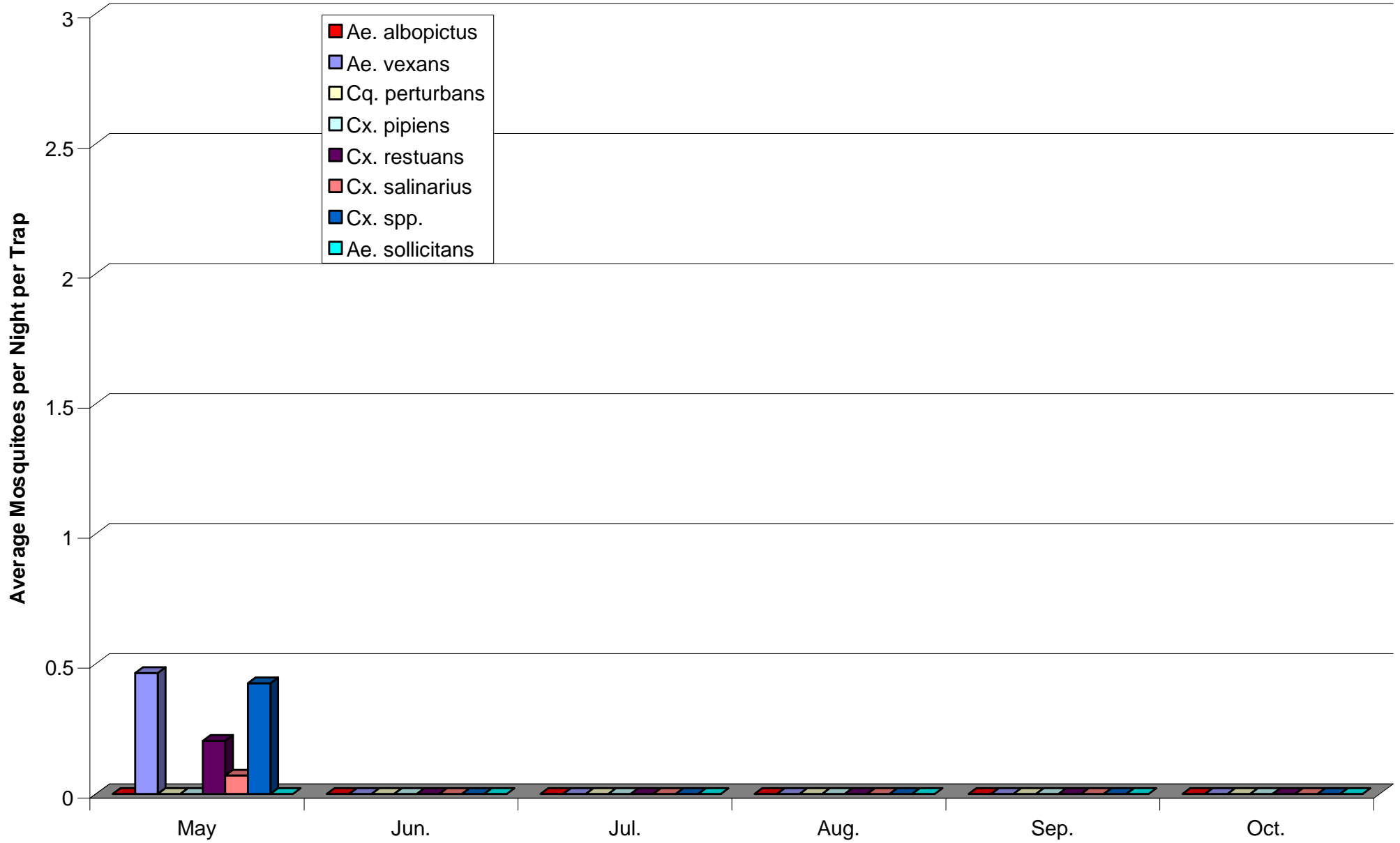
**Mosquito Control Monthly Report  
May 2007**

**Greg Williams-Program Coordinator**

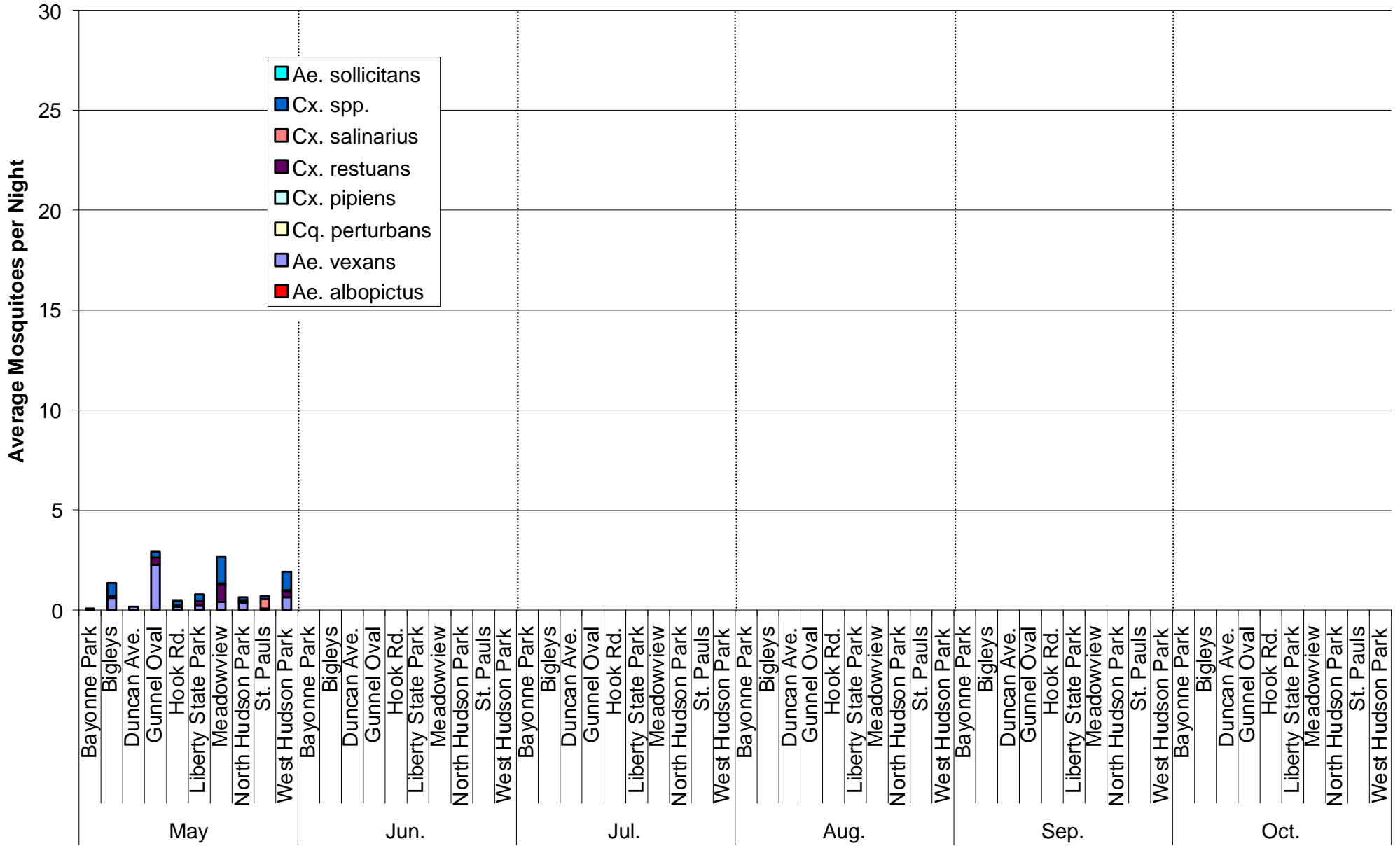
**1) Mosquito Activity**

- a) Larval Surveillance – Larval surveillance continues. Inspectors are mostly bringing back *Aedes vexans* and *Culex restuans* larvae. Jomo Richards identified a significant mosquito source at the Bayonne golf course. We are working with staff at the golf course to work out a treatment plan.
  
- b) Adult Surveillance – Ten light traps were placed in the field on May 15. The storm events in late April resulted in the emergence of *Aedes vexans*, a floodwater species. *Culex restuans* are also emerging from permanent water sites. Dry conditions throughout May have kept the numbers low. Results are displayed on the attached graphs.
  
- c) Disease Surveillance – scheduled to begin mid-June.
  
- d) Complaints – We received several complaints in May. Most were related to standing water caused by citizens. Most of the complaints were reported because of a perceived mosquito problem, but few of the potential problems were actually breeding mosquitoes at this time. The Inspectors will keep an eye on these areas.

## 2007 Monthly Light Trap Summary for Hudson County



## 2007 Monthly Light Trap Summary by Site



**Mosquito Control Monthly Report  
June 2007**

**Greg Williams-Program Coordinator**

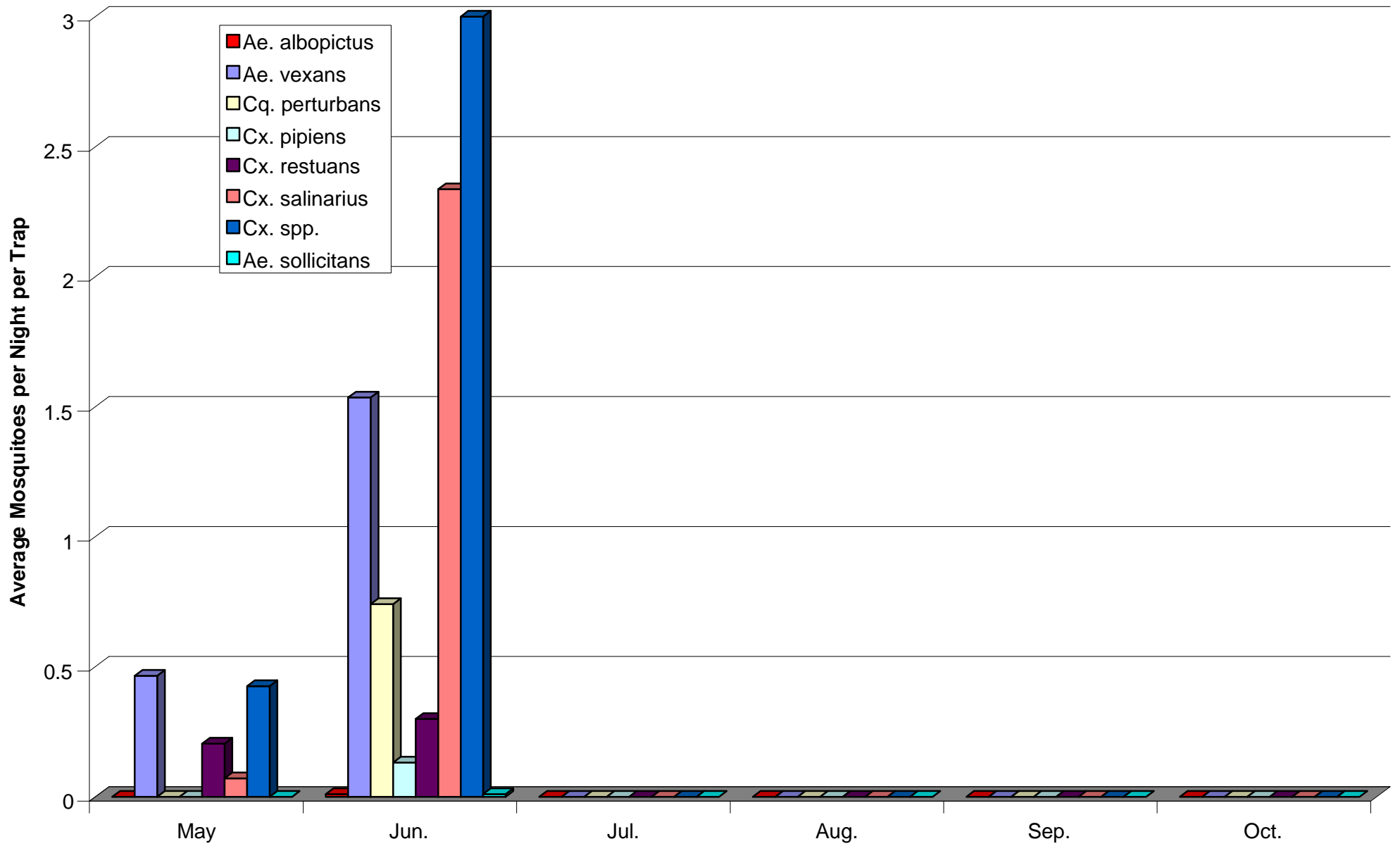
**1) Mosquito Activity**

- a) Larval Surveillance – The Inspectors are finding and eliminating mosquito larvae from all around the county. *Aedes vexans* were prominent in the larval collections from floodwater early in the month. By mid-June the Inspectors were finding mostly *Culex pipiens* and *Culex restuans* from permanent water habitats.
  
- b) Adult Surveillance – June was an active month for mosquitoes. Populations this June were as high as July numbers last year. Regular rain throughout the month kept *Aedes vexans* emerging. Huge numbers of *Culex salinarius* have been coming off the salt marshes, especially in the St. Paul’s area. Large populations of the univoltine species *Coquillettidia perturbans* have also been noted. Large populations of this mosquito could be indicative of Eastern Equine Encephalitis problems this year. Fortunately, this is not an issue in Hudson County because the enzootic vector, *Culiseta melanura*, is not found in this county.

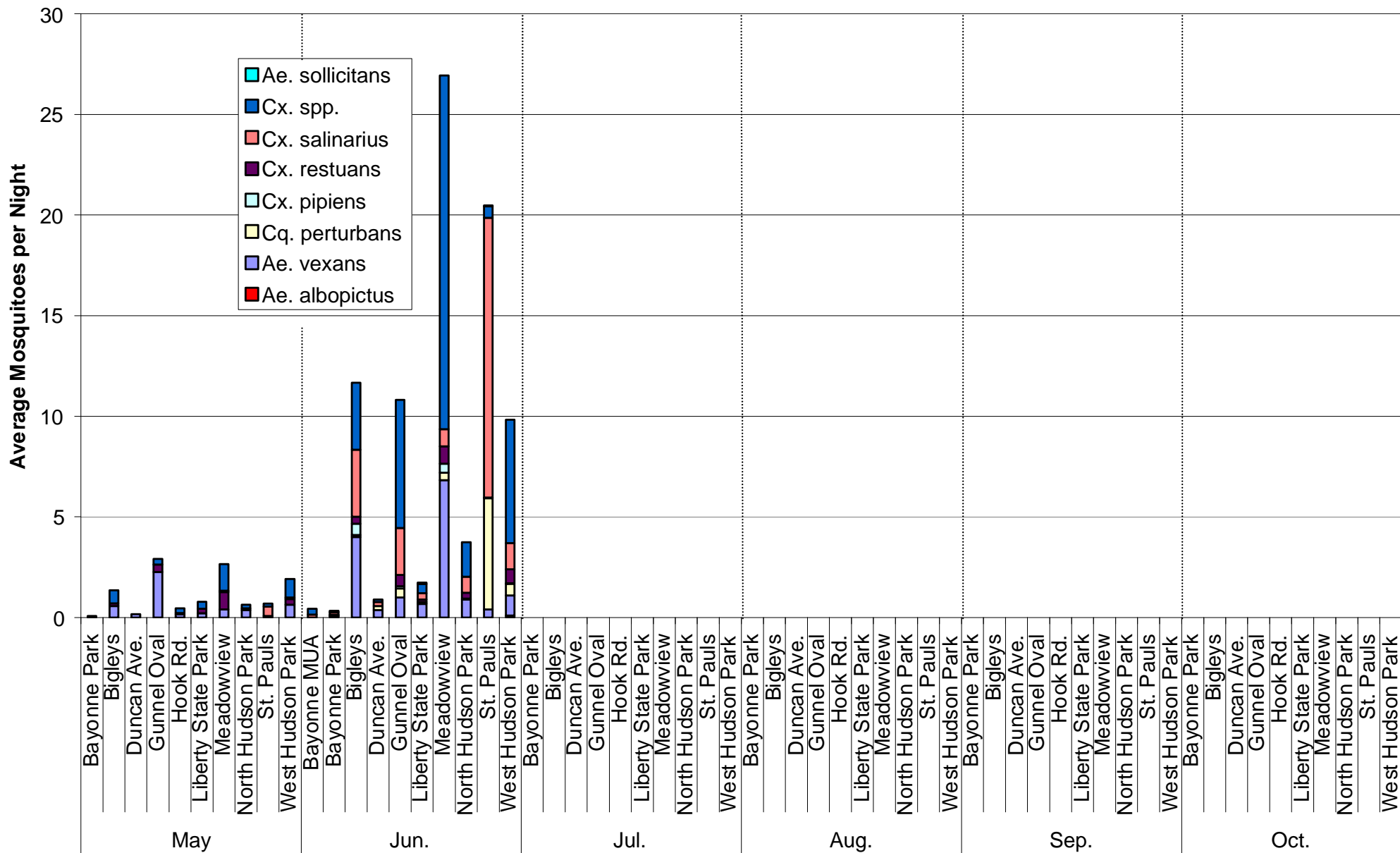
Adult numbers at Meadowview are at the threshold for adulticiding. If numbers do not drop off early in June, we will most likely adulticide around the Meadowview campus. *Culex salinarius* numbers from the St. Paul’s light trap are also very high. The *salinarius* population was knocked down after our helicopter application on 6/20 but rebounded quickly. We may need to increase the frequency of our aerial applications around that area.

- c) Disease Surveillance – Fifteen gravid traps were placed out all around Hudson County, mostly in known hot-spots, to monitor for WNV. Sample analysis is pending.
  
- d) Complaints – We received numerous complaints in June. Most were from the Secaucus area due to non-biting midges (family *Chironomidae*). For some unknown reason, this year has been very bad for midges. Unfortunately, there is very little that we can do for midges. The products and methods that we use to control mosquitoes are ineffective for midges. An explanation to the public has been placed on the homepage of our website. Fortunately, midges emerge early in the season and then die off. Midge complaints appear to be declining.

## 2007 Monthly Light Trap Summary for Hudson County



## 2007 Monthly Light Trap Summary by Site



**Mosquito Control Monthly Report  
July 2007**

**Greg Williams-Program Coordinator**

**1) Mosquito Activity**

a) Larval Surveillance

Routine surveillance and larviciding continues. While much of the state experienced near drought conditions in July, Hudson County received just enough rain to keep most of our surveillance sites active. None of the rain events in July were large enough to trigger a significant emergence of floodwater mosquitoes. However, the rains did keep the permanent water *Culex* species active throughout the month.

b) Adult Surveillance

Adult mosquito populations were very high in July. For some reason, *Culex salinarius* is emerging off the marsh in huge numbers this year. We are finding a few hundred *salinarius* a night in some areas of the marsh. By contrast, Bergen County is collecting 1,000's per night from the Meadowlands. In general, I like to keep the light trap numbers below 20 mosquitoes per night from any given area. As can be seen in the second graph, Bigley's, Gunnel Oval, Meadowview, and St. Pauls exceeded this limit. Gunnel Oval and St. Pauls are high because of the *salinarius* populations described above. Bigley's is high from a variety of mosquitoes and regular rain. All three of these sites can only be effectively treated by helicopter. More frequent helicopter applications are required in these areas. The high *Culex* population at Meadowview is a mystery. We have been treating the sewage treatment plant regularly, catch basins have also been treated. We are going to start looking for some oddball source such as clogged gutters, a hidden source in the woodlot behind campus, etc.

c) Disease Surveillance

Our surveillance program began July 1. We are monitoring 15 sites a week throughout the county. In July we submitted 117 mosquito pools for testing. This is a substantial increase in our sampling effort over last year. The State limits counties to submitting 15 pools per week. With the approval of the State Mosquito Commission, we are submitting many more pools than this as part of a research project designed to improve our WNV surveillance program. With this increased sampling, I would anticipate finding more positive pools than usual. To date we have found 6 positive pools. In response to these positive pools we are performing nighttime adulticide operations and increasing our surveillance and larviciding in these areas. On the last page I have included a graph of the weekly infection rates for 2007 compared to a five year average.

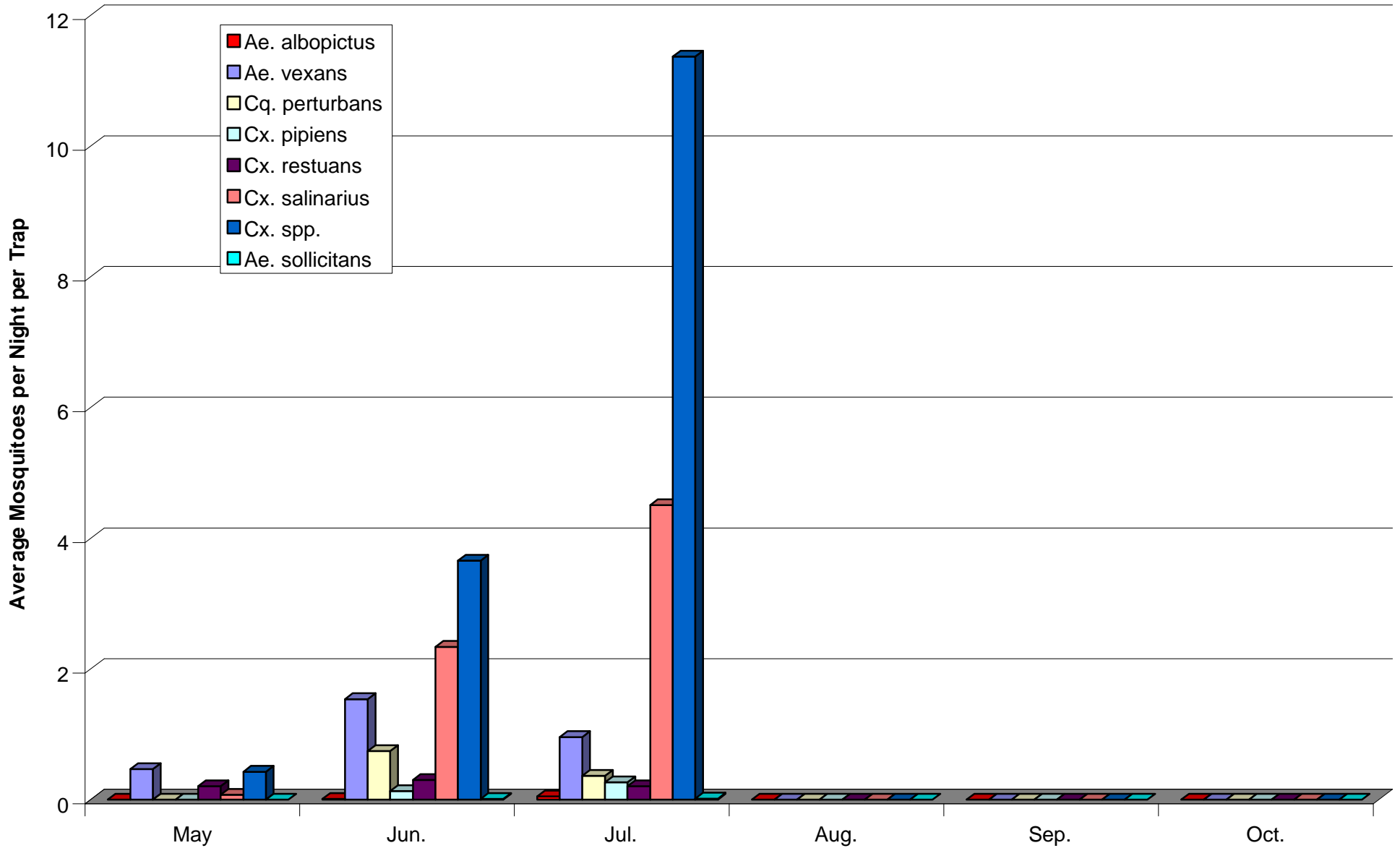
d) Complaints

The midge complaints finally subsided in July. Mosquito complaints rose a little. We received many complaints early in the month from the Secaucus area. I believe that the Mill Creek Marsh is generating large blooms of *Culex salinarius* that are bothering nearby residents. This marsh was not a problem last year as the tides and fish kept the mosquito numbers down. Therefore it has not received much attention. We are conducting surveillance in the marsh to determine the extent of the problem. We have also received some complaints from areas along the Hudson River such as Liberty State Park (due to *Aedes sollicitans* emerging from the tides) and West New York (due to flooded construction sites in the area).

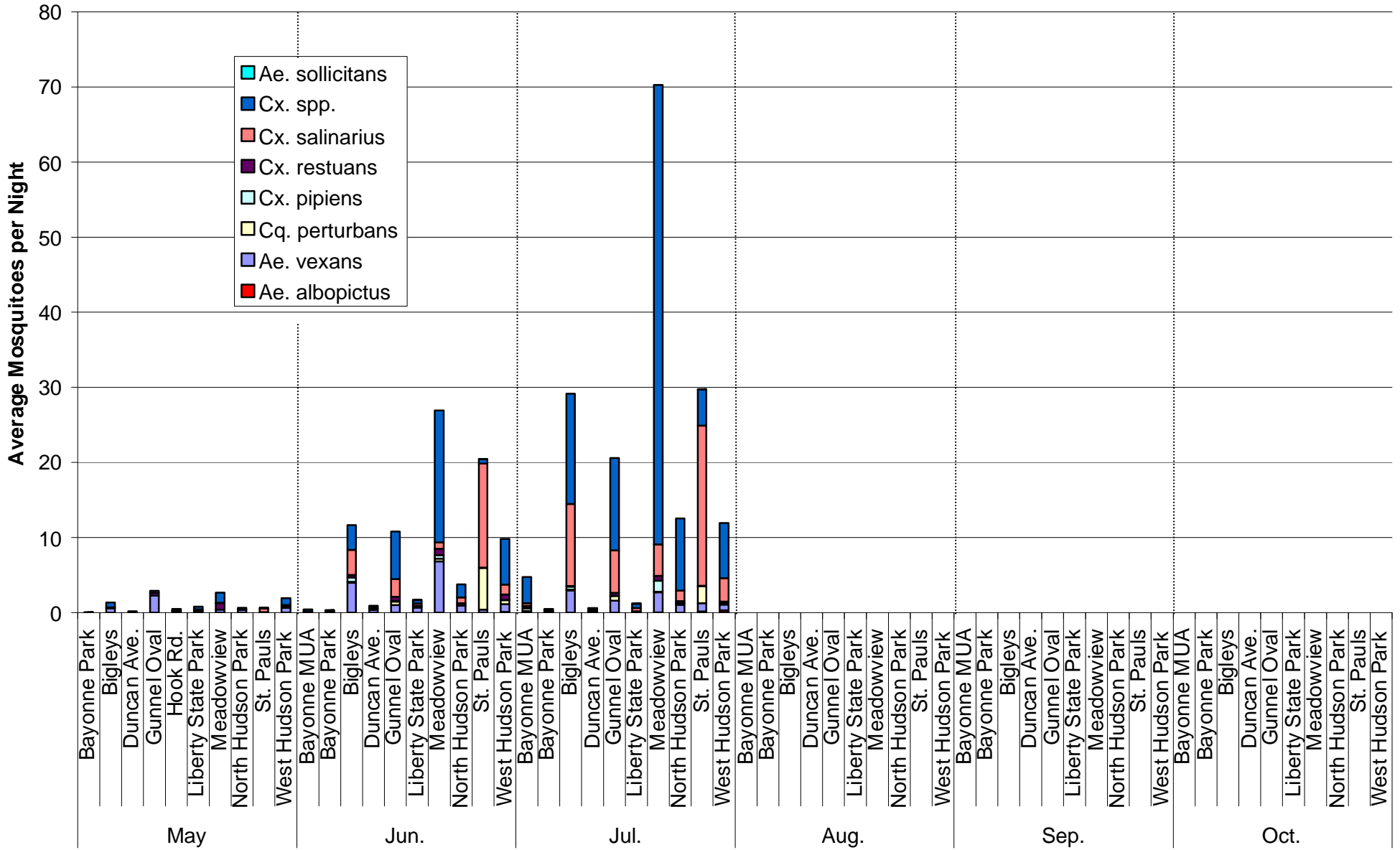
e) Research

We are currently conducting two research projects. We are evaluating the efficiency of a new mosquito trap for *Aedes albopictus* in conjunction with Rutgers. This mosquito causes a significant nuisance in Hudson County but unfortunately, none of the traps that we use are a good monitor for that species. Hopefully this trap will be a useful tool for *albopictus* surveillance. A second study is looking at two different disease surveillance strategies to determine which strategy is better for monitoring for WNV.

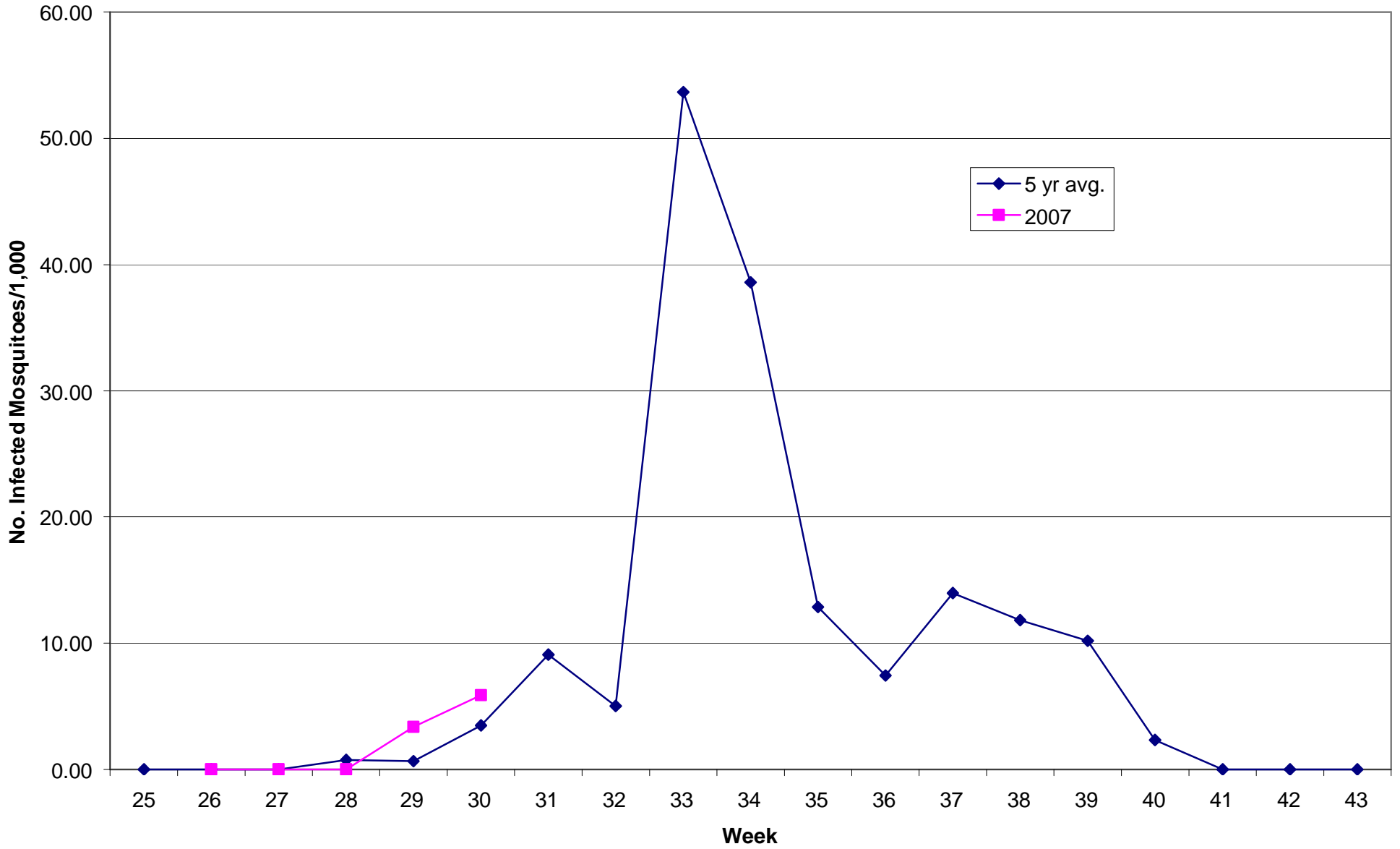
## 2007 Monthly Light Trap Summary for Hudson County



## 2007 Monthly Light Trap Summary by Site



### Hudson County Weekly WNV Infection Rates 2007



**Mosquito Control Monthly Report  
August 2007**

**Greg Williams-Program Coordinator**

**1) Mosquito Activity**

a) Larval Surveillance

Despite an increase in rain in August, the inspectors primarily found permanent water species. For some reason, the rains did not trigger a significant hatch of floodwater species. Late season species started to appear by the end of the month such as *Psorophora columbiae* and *Uranotaenia sapphirina*. *Psorophora* will bite humans but does not occur in large numbers in Hudson County. *Uranotaenia* is an interesting little mosquito that only feeds on amphibians.

b) Adult Surveillance

Mosquito populations decreased in August. Temperature and rainfall averages would suggest higher populations than July. However, our helicopter program was resumed and we were able to kill off large numbers of larvae in our most problematic areas. While the elevated *Culex* population at Meadowview decreased in August, it is still higher than we are comfortable with. We are still searching for other sources of *Culex* mosquitoes in the area.

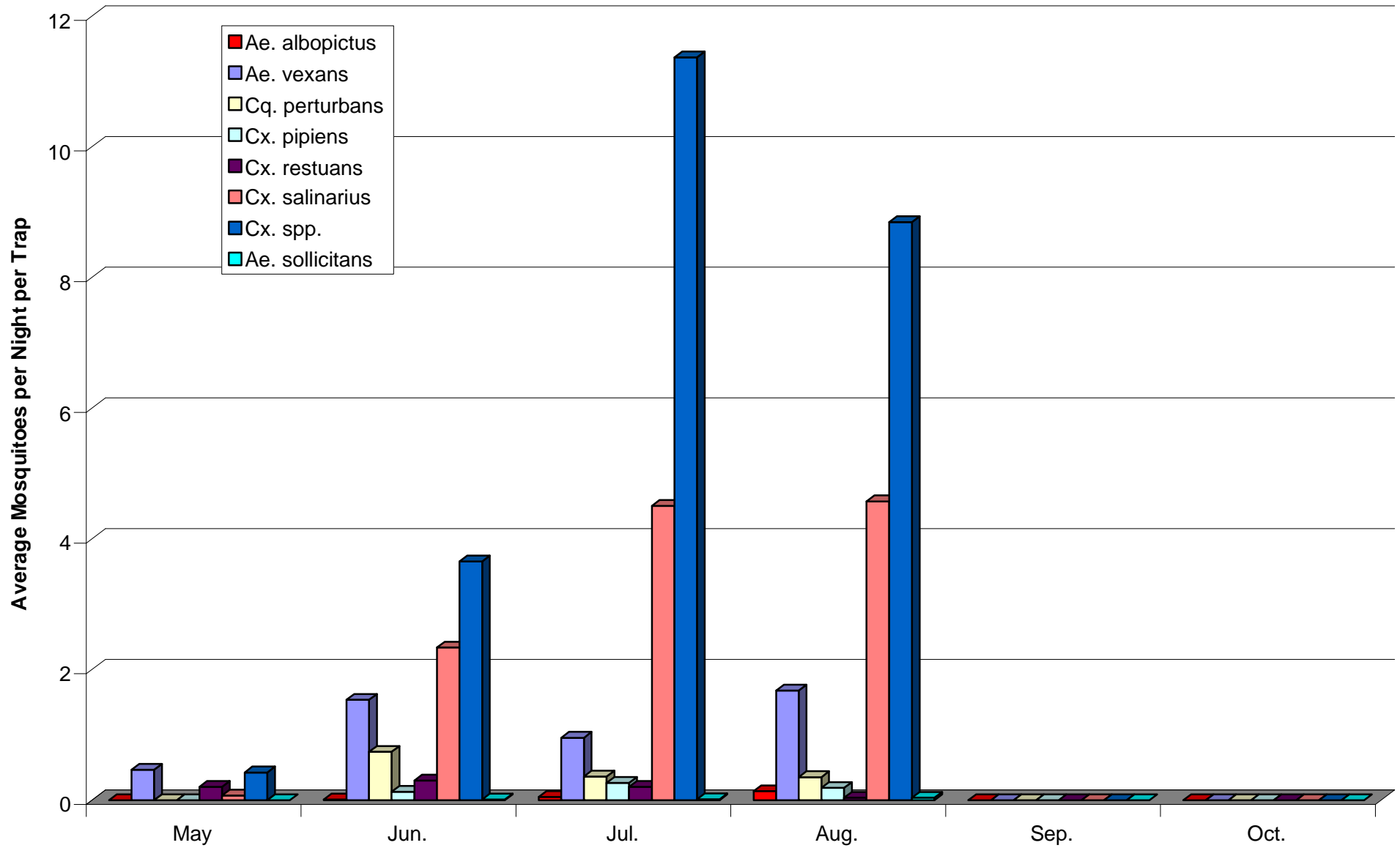
c) Disease Surveillance

In August, we submitted 111 mosquito pools for testing. Twenty pools tested positive for WNV from 13 different sites from around Hudson County. The overall weekly infection rates ranged from 3.85 to 18.97 infected mosquitoes per 1,000. The adulticide applications that were performed in response to these pools appear to have been effective in locally reducing the number of infected mosquitoes. Hudson County continues to have one of the highest mosquito infection rates in NJ. To date there have been no human cases reported in NJ.

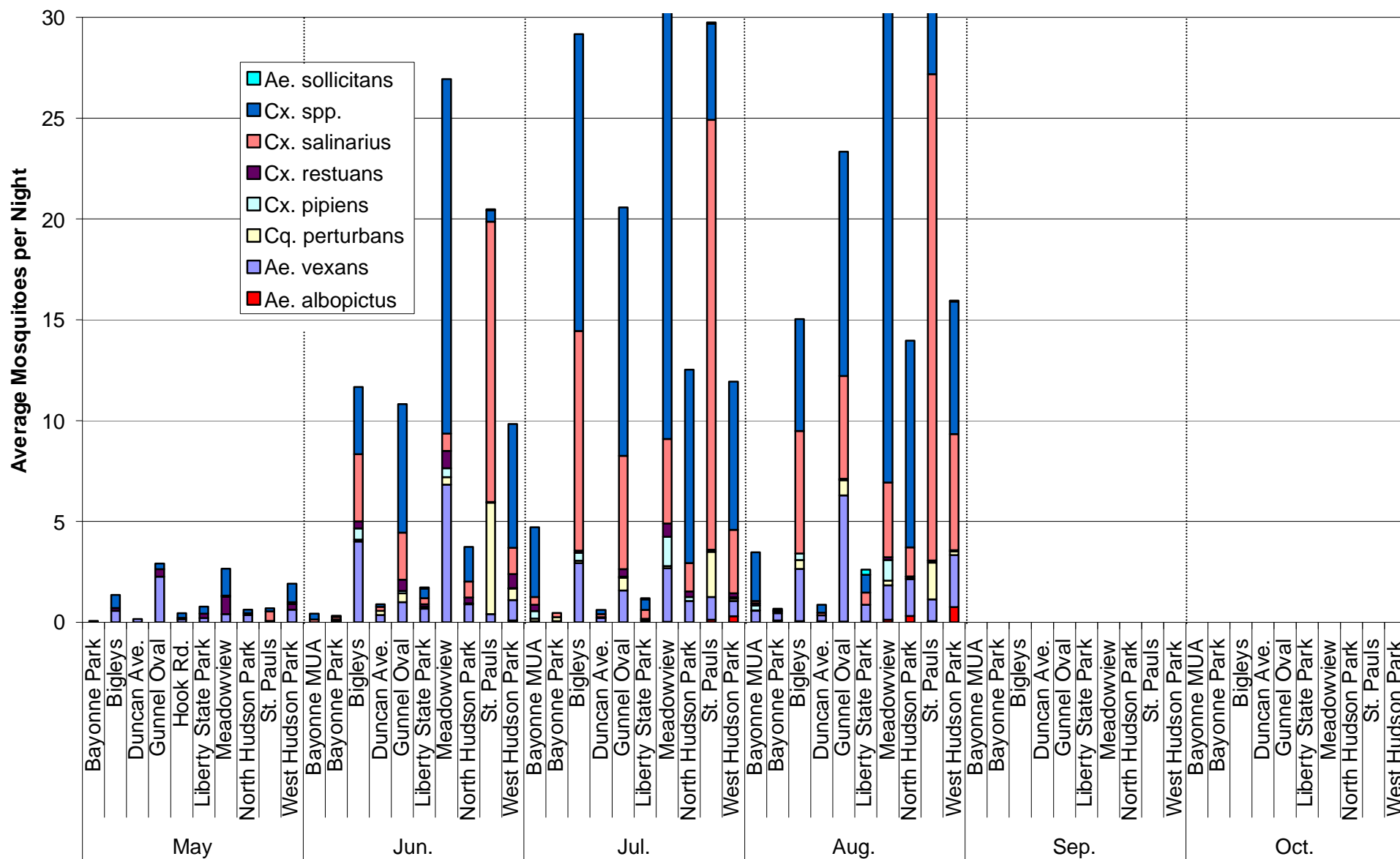
d) Complaints

We received very few complaints in August. The few complaints that we did receive were due to local *Aedes albopictus* problems. This mosquito is mainly found in man-made containers and is a result of poor water management around the home. Inspectors removed standing water and spoke to the residents when available to educate them on how to eliminate this mosquito. We have an informational door hanger to help people manage this mosquito that I hope to have printed so we can distribute it around problem areas.

## 2007 Monthly Light Trap Summary for Hudson County



## 2007 Monthly Light Trap Summary by Site



### Hudson County Weekly WNV Infection Rates 2007

