

Culex Flight Activity
in
Suffolk, VA

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2011

Background

- Early Evening Questing and Oviposition Activity by the Culex (Diptera: Culicidae) Vectors of West Nile Virus in Northeastern North America
 - Reddy et. al 2007
- Pennsylvania's West Nile Virus Control Program
 - Cx. pip/res oviposition study 2007-2009

Reddy et al paper 2007

- Purpose
 - Host-seeking and oviposition activity of *Culex spp.*
 - What time do they occur and are these behaviors simultaneous?
- Methods
 - Cambridge and Somerville, Massachusetts
 - Used caged birds to record host-seeking activity
 - Recorded oviposition activity using a camera

Reddy et al paper 2007

- Results
 - Showed that peak host-seeking and ovipositioning time of *Culex* mosquitoes occurred **two hours** after sunset
 - Suggested that ULV treatment be conducted two hours after sunset for best results

Pennsylvania's West Nile Virus Control Program

- Cx. pip/res oviposition Study 2007-2009
 - Purpose
 - Identify ovipositioning and host seeking activity of Culex spp
 - Verify that they were conducting ULV treatments at the correct times

Pennsylvania's West Nile Virus Control Program

- Cx. pip/res oviposition Study 2007-2009
 - Methods
 - Mosquitoes (spp not recorded in '07)
 - Egg rafts
 - Weather
 - Temperature
 - Wind Speed
 - Humidity

Pennsylvania results

- Defined a 2 hour period of time (9-11PM) where mosquito activity was highest
- Identified that their treatment period was in sync with high activity

What About Suffolk?

- Wanted to identify when our *Culex pip/res* was most active.
- Verify that ULV treatments were most efficient
- Were Southeastern VA *Cx. pip/res* acting the same as Northeastern US *Cx. pip/res*?

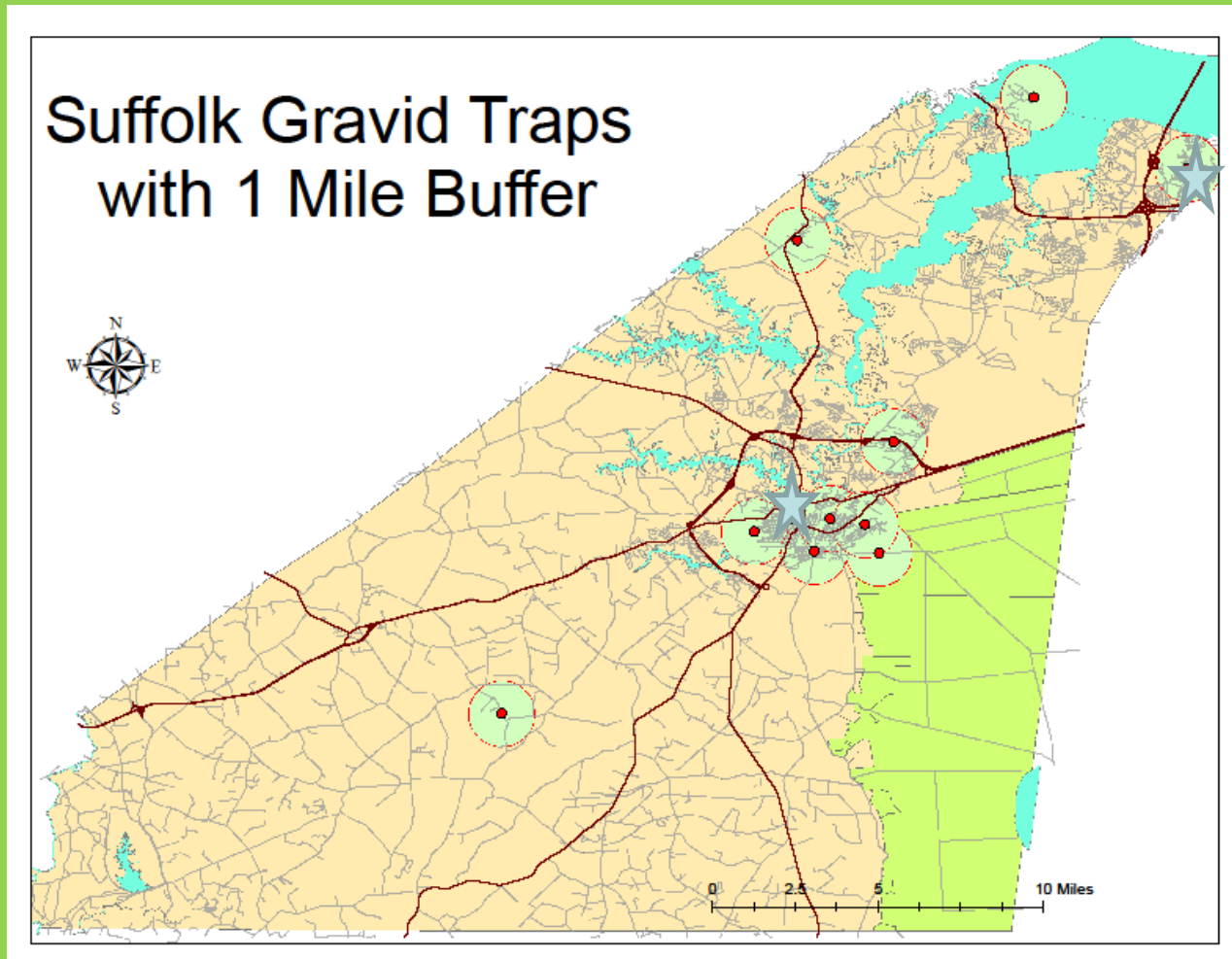
Suffolk 2010

Experimental Design

- Established two trapping sights
 - Pender Cemetery
 - Burbage Grant
- Trapping from April to September
 - Set one hour before sunset
 - Final pick up one hour after sunset

Pender Cemetery

Burbage Grant



Gravid Traps

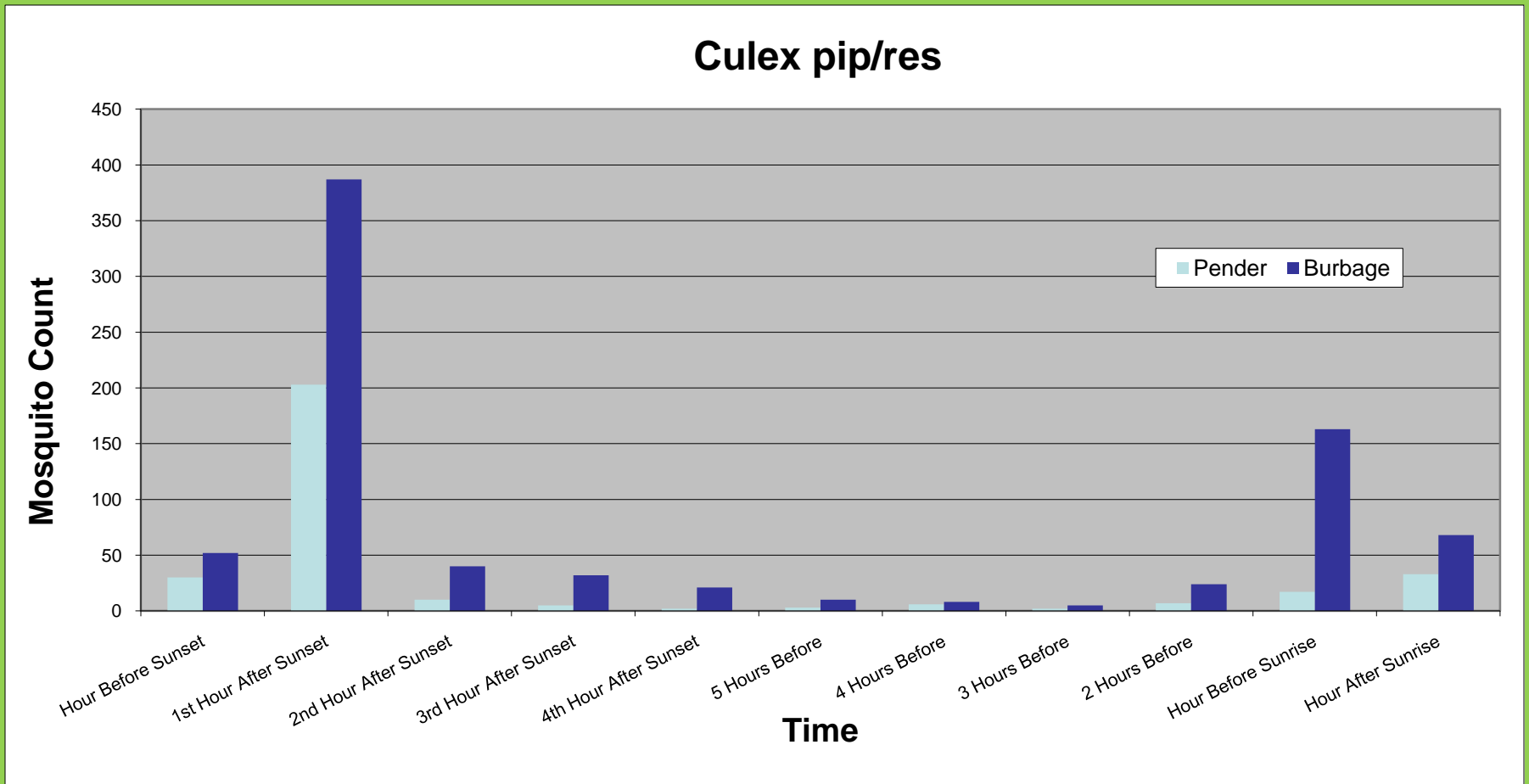






- Collections
 - Mosquitoes
 - Identified on site during each hour
 - Egg rafts
 - Not collected
 - Weather
 - Temperature
 - Wind Speed
 - Humidity

Results



Conclusions

- Culex peak activity
 - 1 hour before sunset through 2 hours after sunset
 - 1 hour before sunrise through 1 hour after sunrise
- Our ULV treatments were performed during Cx pip/res peak activity

Conclusions

We showed that our Cx. pip/res were behaving in the same manner as those in Northeastern US.

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Thanks

- Pennsylvania's West Nile Virus Program
 - Chris Boyer
 - Mike Hutchinson
- Suffolk Biologists
 - Jay Kiser
 - Tucker Pace
 - Jaime Durden (Intern)

Questions