Chatham County WNV Outbreak, What the heck are they doing down there?



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### It all starts with good staff!





# In 2012, both Eastern Equine Encephalitis (EEE) and West Nile virus (WNV) were recorded in Chatham County

Collection Type	Virus Type	Number of Positives	Number of Sites	Species of mosquito involved
Sentinel Chicken	EEE	2	2	N/A
CDC Traps	EEE	2	1	Culex erraticus, Culiseta melanura
Exit Trap	EEE	1	1	Culiseta melanura
CDC Trap	WNV	1	1	Culex nigripalpus
Gravid Traps	WNV	35	11	<i>Culex</i> species, <i>Culex</i> <i>quinquefasciatus</i>

Eastern Equine Encephalitis (EEE) surveillance in Chatham County is conducted primarily in the western portion of the county using CDC traps (red markers), chicken sentinels, and "exit" traps (blue markers).



## Additional CDC traps (yellow markers) supplement our EEE surveillance outside the EEE focal area.



CDC traps deployed at sentinel sites are spaced between 25 and 50 feet away from chickens to lessen competition of attracting mosquitoes.



Our sentinel chicken program is much different from other sentinel programs in that individual hens are deployed at sample sites for a single night, rather than left in an outdoor coop on a more-or-less permanent basis.







After deployment, sentinel chickens are returned to the mosquito-free coop at our facility, and tested for virus after 14 days from a blood sample.









Exit traps are passive funnel traps affixed to the tops of the sentinel cages. Mosquitoes captured in these traps give us an idea of which species feed upon the sentinels, and can also been pooled for testing.





Besides trap type, an important aspect of our EEE surveillance is habitat selection of perspective trap sites. *Culiseta melanura* is our primary EEE vector, and generally occurs in river swamp or cypress swamp areas.





### Coquillettidia perturbans is often associated with areas that contain cattails.







Culex erraticus adults are usually found in wooded areas, larvae can be found in both permanent water or seasonal wet lowlands.







	Year										
Sample Type	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mosquito	٩	67	30	0	0	36	0	0	0	214	36
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Wild Birds	23	27	0	0	0	1	0	0	0	0	0
Sentinel Chickens	0	6	0	0	0	0	0	2	0	0	0
CHICKENS	0	U	U	U	U	U	U	<b></b>	U	0	U
Horses	1	1	0	0	0	0	0	0	0	0	0
Humans	0	9	1	0	1	0	0	0	0	10	1
Human											
Fatalities	0	1	0	0	0	0	0	0	0	0	0

Table 1. Occurrence of West Nile Virus in Chatham Co	ounty
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The Chatham County region first experienced West Nile virus activity in 2001, with the greatest amount of activity recorded in 2011.

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Gravid trap sites are usually located in residential areas near storage buildings, shrubbery, lift stations, or other places that afford refuge to adult mosquitoes.







Virtually all positive WNV positive mosquito pools recorded from Chatham County are composed of *Culex* species or *Culex quinquefasciatus*, with only a single pool of *Culex nigripalpus*.



















### Compared to 2011, the 2012 WNV season began slightly later, and persisted somewhat longer.

#### WNV positive pools from Chatham County, 2011-2012



MIR's varied in 2012 at individuals sites between 1 and 66 while WNV was active, but collectively averaged between 4.6 and 38.7 on weeks in which WNV was detected.



#### Number of WNV positives in Chatham Co., 2012

Thank You



**Questions?**