

# Buzz Words

Volume 12. No. 5. Sep/Oct 2012



Florida Mosquito Control Association

[www.floridamosquito.org](http://www.floridamosquito.org)

President	Larry Hribar
President Elect	Bob Betts
Vice-President	Neil Wilkinson
Past President	Roxanne Connelly
Executive Director	Debra Parker Smith
Web Master	Gregg Ross

Change of address:

[BuzzWords@ifas.ufl.edu](mailto:BuzzWords@ifas.ufl.edu)

or

Roxanne Connelly, Editor  
UF/IFAS/FMEL  
200 9<sup>th</sup> Street SE  
Vero Beach, FL 32962

FMCA address:

FMCA  
P O Box 61598  
Ft. Myers, FL 33906

Deadlines for submissions to be  
included in the newsletter:

Jan/Feb Feb 1  
Mar/Apr Apr 1  
May/Jun Jun 1  
Jul/Aug Aug 1  
Sep/Oct Oct 1  
Nov/Dec Dec 1

Send newsletter submissions to:  
Nathan Burkett-Cadena, Managing editor  
[nburkett@health.usf.edu](mailto:nburkett@health.usf.edu)

*The mission of the FMCA is to promote effective and environmentally sound control of disease-transmitting and pestiferous mosquitoes and other arthropods of public health importance, develop and enhance public interest, awareness, and support for the control of mosquitoes, and provide for the scientific advancement of members through our meetings, training and education.*

## Upcoming Events

*Florida Mosquito Control Association  
84th Fall Annual Meeting  
November 11 – 14, 2012  
Sandestin Hilton  
Sandestin, FL*

*Florida Mosquito Control Association  
2013 Dodd Short Courses  
January 27 – February 1, 2013  
Ocala Hilton*

## From Your FMCA President

Due to the publication schedule of *Buzz Words* it is likely that by the time you receive this issue Bob Betts will have assumed the Presidency of FMCA, Neil Wilkinson will have become President Elect, and a new Vice President will have been elected. I will have moved along to become Immediate Past President and Roxanne Connelly will have rotated off the Board of Directors completely. In her capacity as the Past President immediately previous to the Immediate Past President is she our Penultimate Past President?) she will serve one more year on the Nominating Committee. On behalf of the membership of FMCA I thank you, Roxanne, for everything you have done for this Association on top of your regularly assigned duties with the university and your offices in the American Mosquito Control Association. I often wonder how you do it all and do it so well. Shelly Redovan has stepped down from her position as Executive Director due to our hiring of Mrs. Debra Smith. Shelly, for one of the few times in my loquacious life, words fail me. You are a miracle worker and few people would have been able to expend the Herculean effort that you did to set things right. The Association owes you a debt that cannot be fully repaid. I thank everyone who agreed to serve as a committee chair or committee member this past year; I know it is not easy and that it means accepting additional work at no pay. I believe, however, that our Association is stronger and better because of your efforts. I thank all the members of the Board of Directors for their service. A better group of people could not be found anywhere.

It is a sad reality that mosquito control programs are being defunded, over-regulated, and otherwise hampered in their ability to control the most important vector of human disease. This past summer was enlightening to those of us who think about mosquito-borne disease; to certain others with a viewpoint more pecuniary than prophylactic, perhaps not so much. In Dallas County (Dallas) and Tarrant County (Ft. Worth & Arlington), Texas, we saw an outbreak of West Nile virus in which over 543 people were known to be infected and at least 20 died. Statewide by early September the numbers were 1,219 and 57. Nationwide by mid-September there were 2,636 diagnosed human cases and 118 deaths in 44 states and the District of Columbia. Many of the reported cases were the more severe neuroinvasive form of the disease. In Florida, West Nile virus was detected in humans in Duval, Escambia, Gadsden, Hillsborough, Leon, Okaloosa, Santa Rosa, and Walton Counties. Also in Leon County, Florida, two horses were infected with Eastern Equine Encephalitis. In Europe, Usutu virus continued to decimate the blackbird populations and more unsettling was the first case of human infection with Usutu virus in Germany. Human infections by West Nile virus were seen in Greece, Italy, Russia, Tunisia, Israel, and Palestinian territories. Not to mention, the discoveries of a new strain of West Nile virus in Italy and a new *Phlebovirus*, Heartland virus, in Missouri. And lest we forget

(continued)

dengue, a widespread outbreak was reported from Mexico to Paraguay and into the Caribbean, involving hundreds of thousands of cases of classic dengue and thousands of cases of dengue hemorrhagic fever. Over 600 deaths were recorded and all four dengue serotypes were detected. Imported dengue cases were noted in the United States and Canada. A suspected case of dengue was reported in Greece in early September. There was also a small outbreak of dengue on the French island of Réunion, in which two dengue serotypes were involved.

This certainly “was the [year] that was” for our Association. We hired a new Executive Director, straightened out the finances, got square with the State and Federal tax authorities, reformed the committee structure, updated the Policy and Procedure Manual, and wrote a Best Management Practices document in collaboration with FDACS. We had to deal with the veto of research funds, a change in distribution of State aid to local programs, CWA and NPDES permitting issues, and a review of special districts initiated by the Governor’s Office. We had to listen to scurrilous attacks on nationally recognized programs made by people who could not tell a *Trichoprosopon* from a *Tripteroïdes* or a *Pseudoficalbia* from a *Sabethes*. And all the while they bad-mouthed us, we kept them safe from mosquito-borne disease.

Three years ago I received a phone call and I was asked to accept nomination as Vice President of the Florida Mosquito Control Association. I thought long and hard about the demands of the office, and I accepted with no little trepidation. I suspected there were rough times ahead, and I feared I would not be up to the task. Yet, as the French author Anaïs Nin wrote, “... the risk to remain tight in a bud was more painful than the risk it took to blossom.” It has been my privilege and pleasure to serve as your President this past year. I thank you for the trust that you placed in me. I only hope that I have not disappointed too many of you.

Larry Hribar  
FMCA President (2011-2012)

## Predicting the Risk for West Nile using Sentinel Chickens or Monitoring Mosquito Infection Rates

As of September 25, 2012, there were more than 3,545 West Nile human cases in the U. S. with 145 deaths. Texas had more human cases than any other state with about 1,350 cases by this date and 43 deaths. 2012 will be one of the worst years for West Nile in U. S. history.

Florida fortunately dodged such an epidemic of West Nile in 2012 having a total of 43 human cases as of Sept. 22, 2012 with 23 of these in Duval County. The reasons for this are varied but almost certainly this is the result of the absence of environmental conditions in Florida that would support epidemic transmission of West Nile virus (WNV) to humans. Readers of *BuzzWords* and those attuned to FMEL's Encephalitis Information System (<http://eis.ifas.ufl.edu/>) should be familiar with the environmental triggers for WNV transmission. These include a bird breeding cycle that provides susceptible hosts timed with an increase in mosquito vector populations. Both are influenced by a cycle that includes a wet season, followed by drought that forces birds and mosquitoes around scarce water sources, followed by wetting that spreads the infected mosquitoes and infected birds. Thankfully there have been few Florida areas with such a cycle.

Over the years Florida's public health and mosquito control professionals have improved Florida's capabilities against WNV, as well as St. Louis and Eastern equine encephalitis viruses. Since these three viruses are dependent on infected birds to maintain them in nature, sentinel chicken surveillance has played a prominent role in forecasting their transmission. The importance of Florida's sentinel chicken surveillance program has been explained elsewhere in *BuzzWords*. Table 1 shows 20 *BuzzWords* articles about sentinel chicken surveillance for WNV that were published between 2001 and 2007.

Questions are still asked about the suitability of sentinel chicken WNV surveillance. Should Florida make a greater effort to get information about WNV using other methods such as by sampling field collected mosquitoes and analyzing these mosquitoes for WNV? Readers should be familiar with detecting WNV in mosquito pools as a measure of the mosquito infection rate. Rather than repeating the details I direct readers to the previously published articles in Table 1 following this article. They can be read online at <http://fmel.ifas.ufl.edu/buzz/archive.shtml> or <http://mosquito.ifas.ufl.edu/BuzzWords.htm>. For example see Tabachnick, WJ. 2004. Florida's Sentinel Chicken Surveillance Program: Smart Chickens. *BuzzWords* 4(1): 7-8 for why Florida's sentinel chickens are "smart" (Fig. 1).

(continued)

It is critical to understand that the primary goal of WNV surveillance is to obtain information in the most efficient manner to predict the risk for West Nile human cases. This is a different goal than simply detecting the presence of WNV in an area that was important only a few years ago when WNV had yet to spread throughout the U. S. Now one may likely “detect” WNV in many areas in the U. S. if one is able to test enough bird or mosquito samples. We now need information to assess when and where there is enough transmission in an area to cause substantial risk to humans. Therefore Florida and most areas in the U. S. need an actual estimate of WNV transmission to assess human risk in an area. One can estimate mosquito transmission from mosquito infection rates that can be obtained by sampling thousands of mosquitoes in an area, by the extent of sentinel chickens that seroconvert to WNV, or the appearance of West Nile disease in humans and other animals. However, it is well established that once human cases begin to occur transmission is well underway and control measures will likely be after when they would be most effective.



Figure 1. A smart Florida sentinel chicken.

Consider the options of using mosquitoes or sentinel chickens for WNV surveillance. One must test thousands of mosquitoes for virus to obtain information about mosquito infection rates that is only indirect information about mosquito transmission. Mosquitoes must be collected in the area where there are infected mosquitoes. A similarly well-placed sentinel chicken can be bitten by thousands of mosquitoes and provide direct information about transmission through a single test for antibody in the chicken’s blood. More mosquitoes can be sampled by using more chickens and actual transmission can be assessed for less cost and effort. Details about the efficiency of sentinel chickens vs. mosquito analyses for WNV can be found elsewhere (Tabachnick, WJ. 2006. Mosquito surveillance and West Nile prediction: Lessons learned. *BuzzWords* 6(4): 6-8).

Of course a surveillance program is useful only if the information is then used to make timely decisions to mitigate a potential outbreak. In 2005 Florida’s Pinellas County Mosquito Control District initiated increased mosquito control based on their sentinel chicken surveillance information before the appearance of human cases of West Nile (Tabachnick, WJ and JF Day. 2005. West Nile surveillance and Florida Mosquito Control: Acting on surveillance information. *BuzzWords* 5(5): 6-8). In 2012 mosquito surveillance in Dallas County in Texas found high WNV mosquito infection rates beginning in June and continuing throughout the summer.

(continued)

There were 181 West Nile cases and 9 deaths by August 10 and by August 15 several Dallas County cities agreed to aerial spraying for mosquito control. Aerial spraying began on August 16 in north Dallas, and August 22 in south Dallas cities. It will be interesting to assess how the mosquito surveillance information in Dallas County was used to make decisions about the extent of the risk in the county, how it was used as part of the public health decision-making process and the effectiveness of the mosquito control efforts that were implemented. Dallas County had the highest number of West Nile cases in Texas but this outbreak had a lower incidence than the 2010 dengue epidemic in Key West. The highest incidence in Dallas County was in Highland Park at 45.8/100,000 as of Sept. 7, 2012 ([www.dallas-cms.org/community\\_health/DCHHS/DCHHS\\_WNV\\_EpiUpdate090712.pdf](http://www.dallas-cms.org/community_health/DCHHS/DCHHS_WNV_EpiUpdate090712.pdf)). This is only about 1/10 the incidence of dengue (325/100,000) that occurred in Key West in 2010. Disease incidence is essential to gauging human risk.

Florida's scant resources for WNV surveillance must be used to provide useful information in the most effective manner. Unfortunately there are still far too many areas of Florida where mosquito-borne disease surveillance is woefully inadequate. Florida may pay a heavy price for the absence of useful surveillance information should WNV strike one of these areas. There will be circumstances when one or the other of the available surveillance tools may be more useful, efficient, and/or effective. Which one to employ must be based on an understanding of the specific surveillance goals for the area under surveillance and the effectiveness and efficiency of the tool in meeting these goals.

Walter J. Tabachnick  
Director, Florida Medical Entomology Laboratory  
Professor, Department of Entomology and Nematology  
University of Florida, IFAS  
Vero Beach, FL

(continued from Tabachnik)

Table 1. Articles on Sentinel Chickens and WNV Surveillance published in *BuzzWords*

[Tough Choices for West Nile Virus Surveillance Programs](#) Mar / Apr 2007

[Sentinel Chicken Surveillance for West Nile Virus](#) Nov / Dec 2006

[Sentinel Chicken Surveillance: Some Pitfalls in Analyzing the Data](#) Sep / Oct 2006

[Mosquito Surveillance and West Nile Prediction: Lessons Learned](#) Jul / Aug 2006

[West Nile Surveillance and Florida Mosquito Control: Acting on Surveillance Information](#)  
Sep / Oct 2005

[Florida West Nile Surveillance: Estimating Mosquito Transmission Frequencies](#) Mar / Apr 2005

[A Florida Mosquito Control Arbovirus Response Plan](#) Jan / Feb 2005

[West Nile Epidemic? These are the questions we will ask](#) Jul / Aug 2004

[Sentinel Surveillance and Human Risk for West Nile Virus](#) Mar / Apr 2004

[Florida's Sentinel Chicken Surveillance Program: Smart Chickens](#) Jan / Feb 2004

[Great Move by the Indian River County Health Department and the Florida Department of Health, September 2003](#) Nov / Dec 2004

[Mosquito pooling: Getting a return on your investment](#) Mar / Apr 2003

[The relationship of WN dead birds and human cases](#) Mar / Apr 2003

[West Nile virus in Florida: The Calm Before the Storm?](#) Jan / Feb 2003

[Predicting the "Big Event"](#) May / Jun 2002

[West Nile virus Detection: The details are important.](#) Apr / May 2002

[Sentinel Chicken Surveillance and West Nile Virus in Florida](#) Nov / Dec 2001

[West Nile in Florida: Getting Ready for 2002](#) Sep / Oct 2001

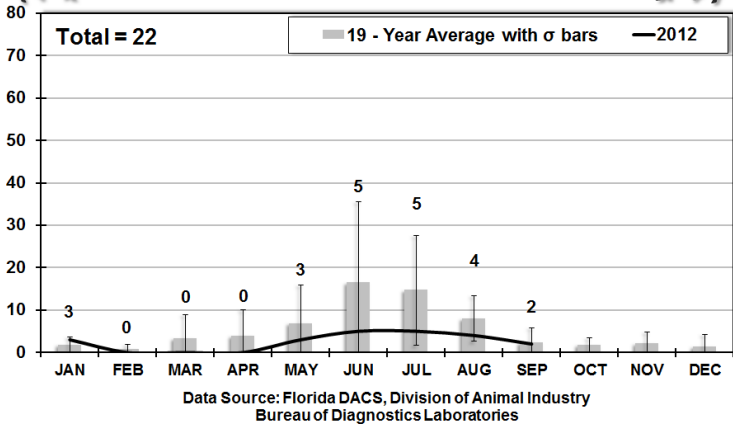
[Finding WN Positive Birds in Florida: Getting Serious](#) Mar / Apr 2001

[A West Nile Virus Positive Bird: WN Response by the Numbers](#) Jan / Feb 2001

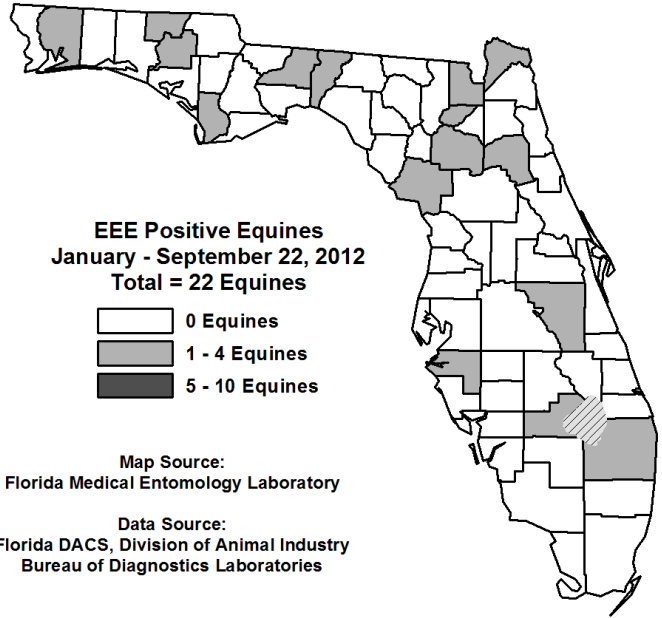
# 2012 arbovirus surveillance, Florida



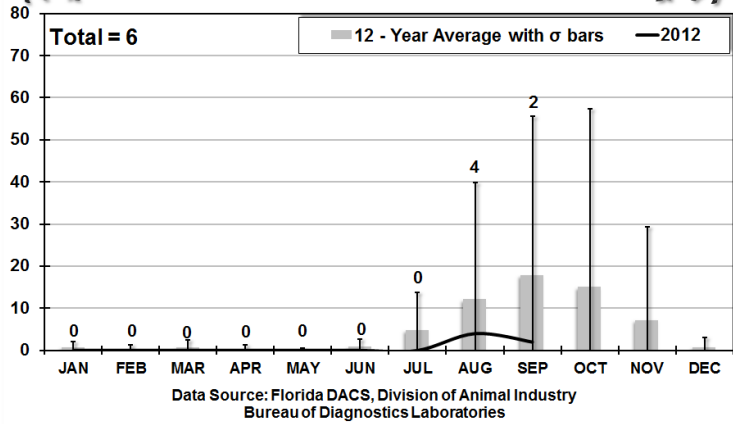
**EEE Positive Equines in Florida  
January through September 22, 2012**



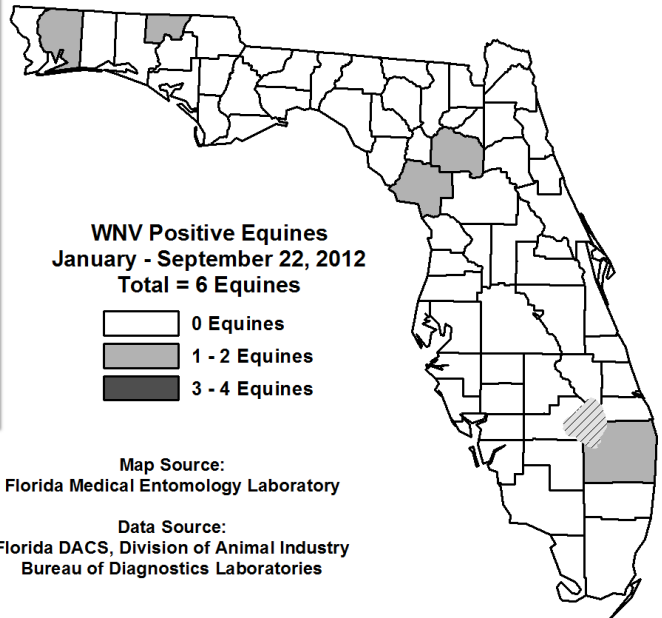
## EEE



**West Nile Positive Equines in Florida  
January through September 22, 2012**



## West Nile





## Debra Parker Smith appointed as Executive Director of FMCA

The Florida Mosquito Control Association Board of Directors is pleased to announce that Debra Parker Smith has been appointed as Executive Director of the Association. Debra resides in North Palm Beach. She has an Associate's Degree in Applied Science in Secretarial Science from Schenectady Community College and a Bachelor's Degree in Business Management from the State University of New York at Albany. Deb has over 30 years of customer service experience and she has served as the Executive Director of several 501(c)3 organizations. Deb possesses a strong work ethic and a positive outlook and she is the consummate professional with an energetic 'can-do' attitude.

Over the next few months Debra will work closely with Shelly Redovan, who served as Executive Director during the interim. As Debra transitions into the Executive Director role, she and Shelly can be reached at [executivedirector@floridamosquito.org](mailto:executivedirector@floridamosquito.org). Deb will be working at the Fall Annual Meeting and will be introduced to the membership at that time – please make plans to attend!

The mailing address for FMCA is now:  
Deb Smith  
FMCA Executive Director  
11625 Landing Place  
North Palm Beach, FL 33408

---

### *Position Announcement*

Medical Entomologist Assistant Professor

University of Florida, Florida Medical Entomology Laboratory,  
Institute of Food and Agricultural Sciences.

The FMEL invites applications for a tenure-track faculty position at the Assistant Professor level from outstanding scientists interested in the biology and ecology of blood-feeding arthropods and the pathogens they transmit. Experience in aspects of medical entomology including a knowledge of techniques used in other disciplines to analyze and interpret ecology, epidemiology, and the vector-pathogen-host interface is essential. Applicants should visit <http://jobs.ufl.edu/postings/31049> for detailed information about the position and the FMEL website <http://fmel.ifas.ufl.edu> to learn more about the laboratory.

Review of applications will begin November 30, 2012 and continue until the position is filled. The University of Florida is an equal opportunity institution dedicated to building a broadly diverse and inclusive faculty and staff.

Dr. Roxanne Connelly, Editor-in-Chief  
Dr. Nathan Burkett-Cadena, Managing Editor  
200 9<sup>th</sup> Street SE  
Vero Beach, FL 32962

**UF** UNIVERSITY of  
**FLORIDA**  
IFAS  
*Florida Medical Entomology Lab*

 **FMCA**  
Florida Mosquito Control Association

UF/IFAS/FMEL

NON PROFIT ORG.  
U. S. POSTAGE  
PAID  
WEST PALM BEACH, FL  
PERMIT NO. 1946

 **FMCA**  
Florida Mosquito Control Association