Tennessee Mosquito and Vector Control Association

Abelardo Moncayo, Ph.D.
Tennessee Department of Health
Nashville, TN
Steering Committee

- Tennessee Department of Health
- Tennessee Department of Agriculture
- Tennessee Wildlife Resources Agency
- Tennessee One Health Committee
- Nashville-Davidson Health Department
- Shelby County Health Department
- Knox County Health Department
- Belmont University
- Vanderbilt University
- University of Tennessee
Sustaining Members

- Adapco, Inc.
- Bayer Environmental Science
- Clarke
- MGK
- Oldham Chemicals Company, Inc.
- Southern Helicopter Leasing
- Univar USA
- Zoecon Professional Products
President
Abelardo Moncayo

Vice President
Phil Hurst

Treasurer
Steve Murphree

Secretary
Holly Girgies

Regional Directors

Exofficio
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Committees

- Membership
- Program
- Finance
- Public Relations
Newsletters

Public Health Information

West Nile Virus

Ticks and Bedbugs
Malaria
Yellow fever
St. Louis encephalitis

La Crosse encephalitis
West Nile fever/encephalitis
Eastern equine encephalitis

Dengue fever

Chagas disease

Lyme disease
Tularemia
Q fever
Babesiosis
Ehrlichia ewingii
Ehrlichia chaffeensis
Spotted fever group rickettsiosis
Anaplasma phagocytophilum

Bed bugs
Lice
Fire ants
Mites
Chiggers
Brown recluse
Black widow
Yellow jackets
1st Annual TMVCA Conference

March 1st, 2012
Ellington Agricultural Center
(The Barn)
Tennessee Mosquito and Vector Control Association
1st Annual Conference - March 1st, 2012
Ellington Agricultural Center
(The Barn)
440 Hogan Road
Nashville, TN,
37204
(615)837-5103

8:30     Registration
9:00     Julius Johnson
Commissioner, Tennessee Department of Agriculture
Opening remarks

9:15     Abelardo Moncayo, PhD
Director, Vector-Borne Diseases Program, Tennessee Department of Health
President’s Welcome

9:30     Rosmarie Kelly, PhD
State Public Health Entomologist, Georgia Department of Public Health
Keynote address: Lessons from the Deep South

10:15   Break
10:30 Melissa Fankhauser, MPH
Epidemiologist, Tennessee Department of Health
Viral Forecasting for West Nile Virus

11:00 Vojin Janjic
Permits Section Manager, Tennessee Department of Environment and Conservation
National Pollutant Discharge Elimination System (NPDES) Permits

11:30 Vendor introductions

12:00 Lunch

1:00 Sanmi Areola, PhD
Toxicologist, Nashville-Davidson County Health Department
Mosquito and Vector Control Program in Metro Nashville-Davidson County

1:30 Ronnie Nease
Director, Environmental Health Division, Knox County Health Department
Mosquito and Vector Control Program in Knox County

2:00 Jane Baumblatt, MD
CDC Epidemic Intelligence Services Officer, Tennessee Department of Health
All That Bugs is not in Bed

2:30 Break

2:45 Charlie Hatcher, DVM
State Veterinarian, Tennessee Department of Agriculture
Vector-Borne Animal Diseases in Tennessee

3:15 Graham Hickling, PhD
Director, The Center for Wildlife Health, The University of Tennessee, Knoxville
Lyme Disease in Tennessee

3:45 Abelardo Moncayo, PhD & Phil Hurst, Inspector, Tennessee Department of Agriculture
Closing Remarks and Evaluation
<table>
<thead>
<tr>
<th>Year</th>
<th>Infected Mosquito Pools</th>
<th>Infected Birds</th>
<th>Horse Cases</th>
<th>Human Cases</th>
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<td>2006</td>
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<td>2007</td>
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<td>7</td>
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<td>2008</td>
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<td>2011</td>
<td>995</td>
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<td>2012</td>
<td>904</td>
<td>6</td>
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<td>Total</td>
<td>6268</td>
<td>1208</td>
<td>297</td>
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It all started with three…

- Knox County
- Davidson County
- Shelby County
Nashville – Davidson County
Integrated Pest Management (IPM) Program

- Consistent with CDC guidelines for surveillance, prevention & control of WNV

- Public education
  - Metro agencies, neighborhood organizations, media, TDH & citizens
  - Backyard Inspection Day (BID)

- Environmental surveillance & source reduction
  - Interagency initiative to reduce stagnant water in stormwater treatment devices (retention/detention ponds & catch basins)
  - PMS staff conduct scans to identify possible breeding sites, monitor sites for stagnant water, & find ways to mitigate the problems
  - Environmental surveys for breeding sties begin in March

- Surveillance to track mosquito populations & virus presence

- Larval Surveillance & larviciding
  - Surveillance begins between late March-early April
  - Determination of larviciding include densities, stage of development, proximity to populated areas & size of area
  - Chemical & biological larvicides (over 700 sites/year)
    - Type & dosage depend on larval stage, density, vegetation cover & concentration of suspended particles in water

- Adult Surveillance & adulticiding
  - Traps in permanent areas
  - Traps set once per week
  - Mosquitoes counted & tested for WNV
  - Surveillance beginning late-April or early-May
  - Non-chemical mosquito control methods
    - Public education
    - Breeding site reduction & application of larvicides
  - Adulticide used only when increased numbers & threat to humans is at CDC risk category 4 (high probability of human outbreak)
  - Ultra-low volume application of insecticides from truck mounted equipment
    - EPA approved
  - Public notification of spraying

- Bird Surveillance
  - Crows and blue jays may be submitted for laboratory testing
Memphis – Shelby County
Pest Management Program

**Arboviral Surveillance (tested for antibodies)**
- Sentinel chickens
  - 15 coop locations for mosquito exposure
  - Bled every 2 weeks
- Wild birds
  - Bled, tagged, recorded, released
- Dead birds
  - Memphis zoo & bird watcher clubs/associations
  - Citizens report dead birds for pickup & testing

**Mosquito Surveillance/Surveys**
- Data collection, processing & analyzing
- Locate mosquito breeding areas
- Light traps
- Larval Surveys
  - Locate, evaluate, map & monitor breeding sties
  - Data on effectiveness of control operations
- Adult Surveys
  - Estimate number/abundance
  - Use of CDC light & oviposition traps
  - Pooled mosquitoes shipped to TDH for arbovirus ID

**Intervention**
- Mosquito Breeding Control
  - Habitat Modification
    - Altering environmental conditions
    - Debris removal from creeks, ditches & culverts to eliminate stagnant water
  - Larviciding
    - Microbial insecticides & larvicidal oils
      - BTI: Bacillus thuringiensis israeliensis
  - Adulticiding
    - EPA approved chemicals
    - Spraying with concentrated ultra-low volume amounts
  - Mosquito Fish (Gambusia abbinis)
    - Eat 100-500 larvae/day
    - Ponds, cisterns, irrigated fields & marshy areas
    - Available to public for use in garden pools and small landscape ponds
- Public Education
  - Distributing informative pamphlets, fact sheets & flyers
  - Presentations at town hall meetings, school assemblies & community organizations
  - Vector and Rodent Control hotline & West Nile Hotline
  - Media release of public health advisories

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Knoxville – Knox County
Mosquito Control Program

Surveillance
- April – November of each year
- Trap mosquitoes throughout county
- Pools sent weekly to TDH for West Nile Virus testing
- Birds monitored for signs of WNV (blue jays and crows)
  - Public submission of dead birds (blue jays & crows only)

Intervention
- Breeding Control
  - WNV affected areas are sprayed with approved mist per CDC guidelines
  - March-first frost: larvicides used in areas with standing water
- Public Education
  - Homeowner associations
  - Community/civic groups
  - Health fairs
  - Informational pamphlets

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<th>Trap Names</th>
<th>Locations</th>
<th>Watersheds</th>
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<td>1. Heron’s Point</td>
<td>1105 Marshbird La.</td>
<td>Tennessee River</td>
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<tr>
<td>2. Venice</td>
<td>805 Venice Rd.</td>
<td>Upper 10 Mile Creek</td>
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<td>3. Robindale</td>
<td>4521 Robindale Rd.</td>
<td>Upper 3rd Creek</td>
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<td>4. Halls</td>
<td>Halls Library</td>
<td>Upper Beaver Creek</td>
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<td>5. Cortese Tree</td>
<td>1201 W. 4th Ave.</td>
<td>2nd Creek</td>
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<td>6. Milligan</td>
<td>624 Milligan St.</td>
<td>Zoo/Chilhowee Park/Williams Creek</td>
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<td>7. Holston</td>
<td>5110 Holston Dr.</td>
<td>Loves Creek</td>
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<td>8. Tom’s Auto</td>
<td>3526 E. John Sevier Hwy.</td>
<td>Swan pond Creek</td>
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<td>9. Carter</td>
<td>Carter Library</td>
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<td>10. Stone</td>
<td>119 Stone Rd.</td>
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<td>11. Golf Shop</td>
<td>7840 Chapman Hwy.</td>
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<td>12. No. Knoxville</td>
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<td>13. Island Home</td>
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Knoxville
Additional Programs Identified

- Athens
- Dickson
- Collierville
- Cookeville
- Elizabethon
- Goodlettsville
- Hendersonville
- Lebanon
- Oak Ridge
- Somerville
- Paris
- Smyrna
- Tullahoma
- Morristown
- Greenville
Human Cases 2012

[Map showing data distribution across Tennessee]
An Important Resource

- Emergency Preparedness
- Hurricane Isaac
- Flooding
- WNV activity
- Requests for nuisance spraying
Upcoming Events

• TMVCA Fall Workshop 2012
  - October 24, 2012
• Annual TMVCA Meeting 2013
  - February 12, 2012

info@tennmosquito.com