

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

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- Adapco, Inc.
- Bayer Environmental Science
- Clarke
- MGK
- Oldham Chemicals Company, Inc.
- Southern Helicopter Leasing
- Univar USA
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| | Henry | Lake | Lauderdale | Madison |
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| Middle: | Bedford | Cannon | Cheatham | Clay |
| | Coffee | Davidson | Dekalb | Dickson |
| | Fentress | Franklin | Giles | Grundy |
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| | Lawrence | Lewis | Lincoln | Macon |
| | Marshall | Maury | Montgomery | Moore |
| | Overton | Perry | Pickett | Putnam |
| | Robertson | Rutherford | Smith | Stewart |
| | Sumner | Trousdale | Van Buren | Warren |
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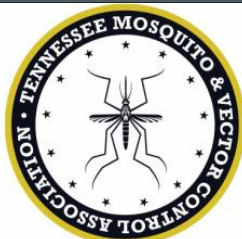
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|-------|------------|------------|----------|-----------|
| East: | Anderson | Bledsoe | Blount | Bradley |
| | Campbell | Claiborne | Hancock | Carter |
| | Cocke | Cumberland | Grainger | Greene |
| | Hamblen | Hamilton | Hawkins | Jefferson |
| | Johnson | Knox | Loudon | McMinn |
| | Marion | Meigs | Monroe | Morgan |
| | Polk | Rhea | Roane | Scott |
| | Sequatchie | Sevier | Sullivan | Unicoi |
| | Union | Washington | | |



Committees

- Membership
- Program
- Finance
- Public Relations





Kissing Bug



Lone star tick



Asian tiger mosquito

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Public Health Information

West Nile Virus



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Ticks and Bedbugs



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Malaria

Yellow fever

St. Louis encephalitis

La Crosse encephalitis

West Nile fever/encephalitis

Eastern equine encephalitis



Lyme disease

Tularemia

Q fever

Babesiosis

Ehrlichia ewingii

Ehrlichia chaffeensis

Spotted fever group rickettsiosis

Anaplasma phagocytophilum

Dengue fever

Chagas disease

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)





Kissing Bug



Lone star tick



Asian tiger mosquito

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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 Baumbblatt, 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**

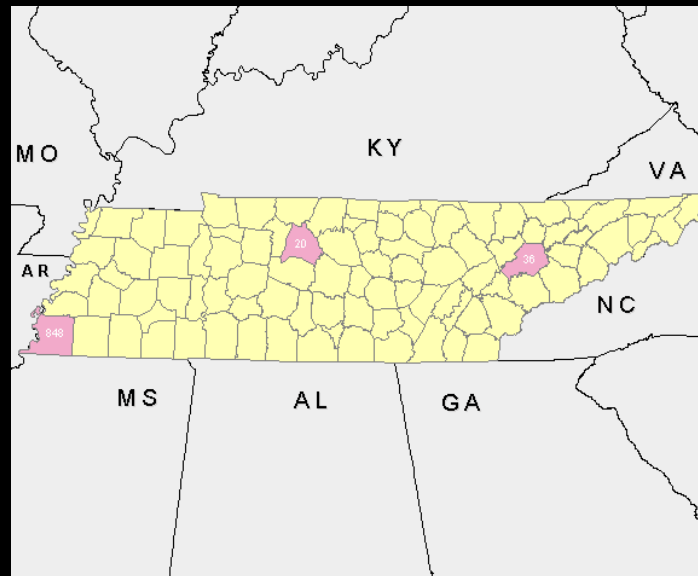


Transmission Indicators (2000-2012)

| Year | Infected Mosquito Pools | Infected Birds | Horse Cases | Human Cases |
|--------------|--|---------------------------|------------------------|------------------------|
| 2000 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 46 | 1 | 0 |
| 2002 | 307 | 823 | 141 | 56 |
| 2003 | 308 | 275 | 103 | 26 |
| 2004 | 405 | 34 | 15 | 14 |
| 2005 | 574 | 12 | 7 | 18 |
| 2006 | 626 | 1 | 8 | 22 |
| 2007 | 600 | 7 | 4 | 11 |
| 2008 | 658 | 3 | 6 | 19 |
| 2009 | 488 | 1 | 5 | 8 |
| 2010 | 403 | 0 | 3 | 4 |
| 2011 | 995 | 0 | 3 | 18 |
| 2012 | 904 | 6 | 1 | 29 |
| Total | 6268 | 1208 | 297 | 225 |

It all started with three...

- Knox County
- Davidson County
- Shelby County

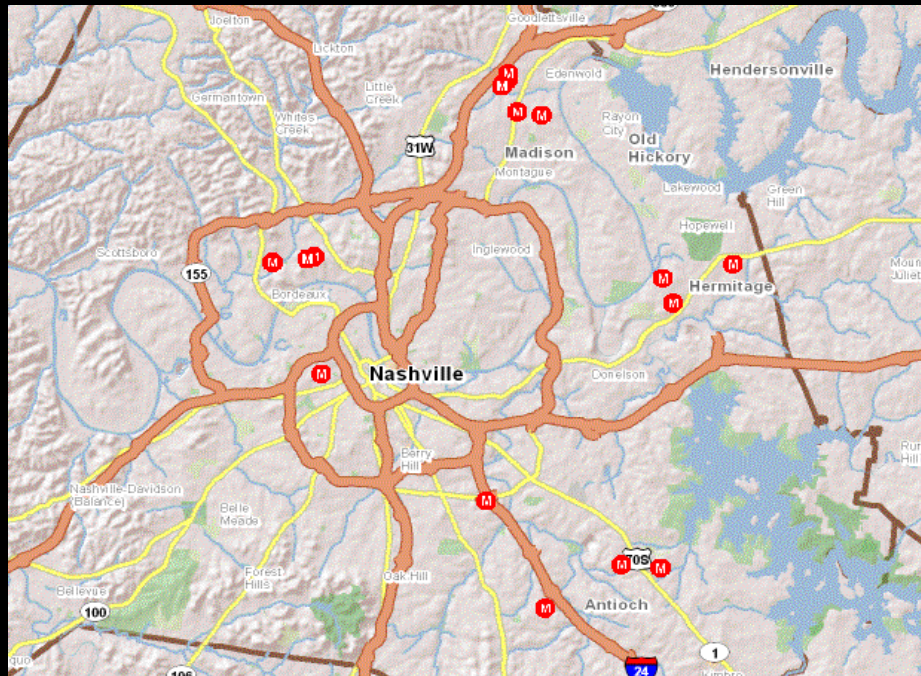
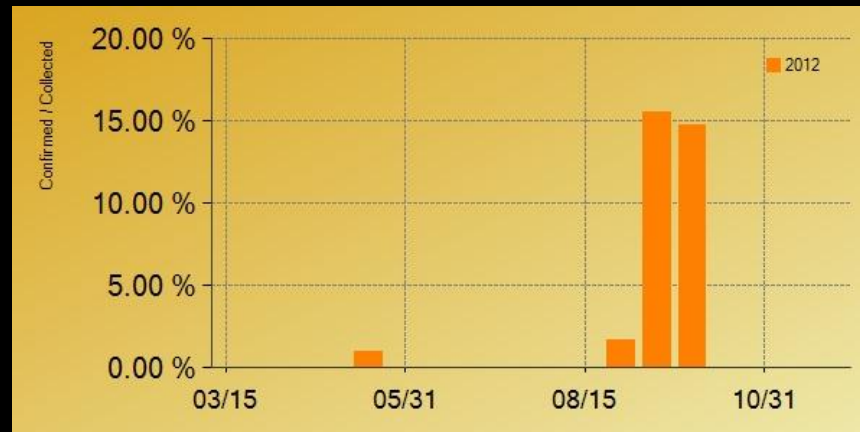


Nashville – Davidson County

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 sites 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

Nashville



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

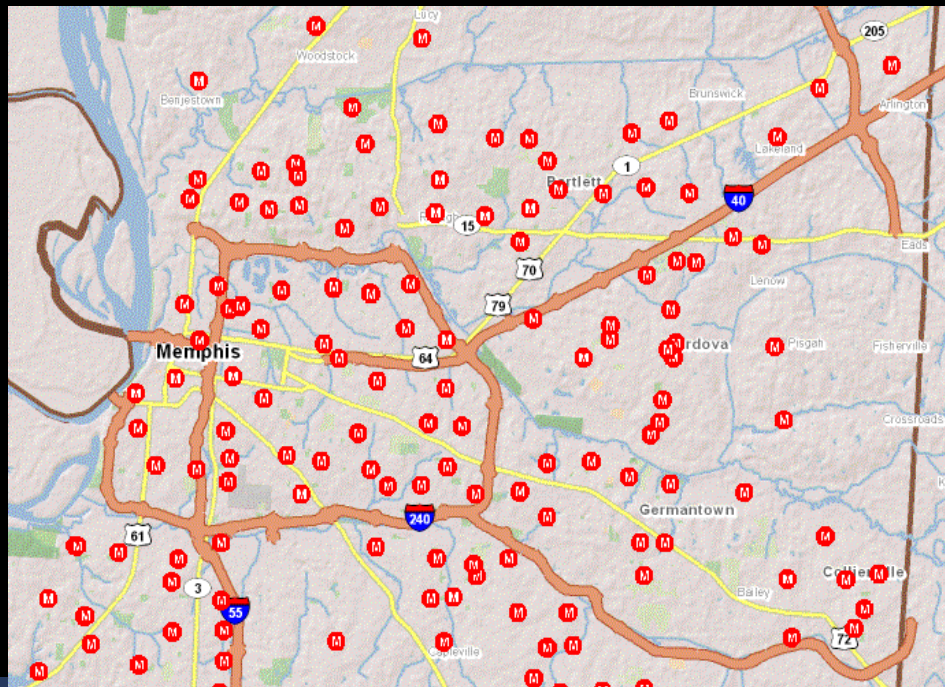
Mosquito Surveillance/Surveys

- 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 stagnate 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

Memphis



Knoxville – Knox County

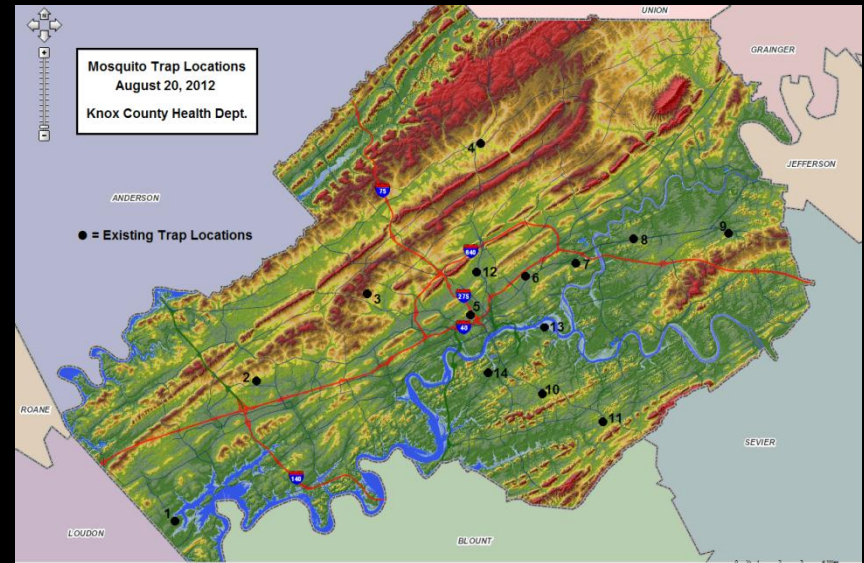
Mosquito Control Program

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



Trap Names

1. Heron's Point
2. Venice
3. Robindale
4. Halls
5. Cortese Tree
6. Milligan
7. Holston
8. Tom's Auto
9. Carter
10. Stone
11. Golf Shop
12. No. Knoxville
13. Island Home
14. So. Knoxville/Vestal

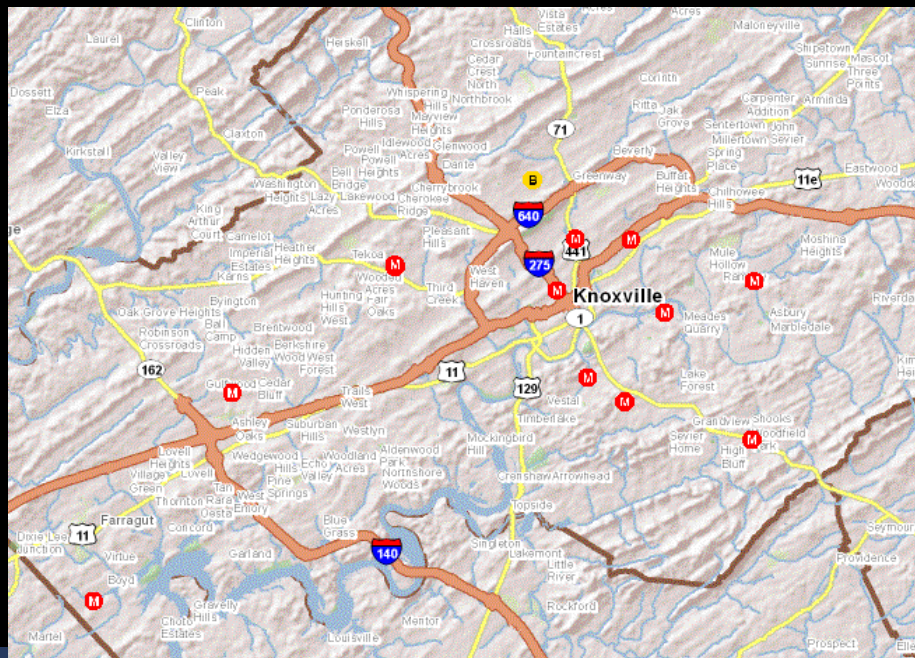
Locations

- 1105 Marshbird La.
805 Venice Rd.
4521 Robindale Rd.
Halls Library
1201 W. 4th Ave.
624 Milligan St.
5110 Holston Dr.
3526 E. John Sevier Hwy.
Carter Library
119 Stone Rd.
7840 Chapman Hwy.
Fulton High
2701 Spence Pl.
638 Maryville Pk.

Watersheds

- Tennessee River
Upper 10 Mile Creek
Upper 3rd Creek
Upper Beaver Creek
2nd Creek
Zoo/Chilhowee Park/Williams Creek
Loves Creek
Swan pond Creek
Lyon Creek
Upper Knox Creek
Upper Burnett Creek
Upper 1st Creek
Tennessee River
Goose Creek

Knoxville

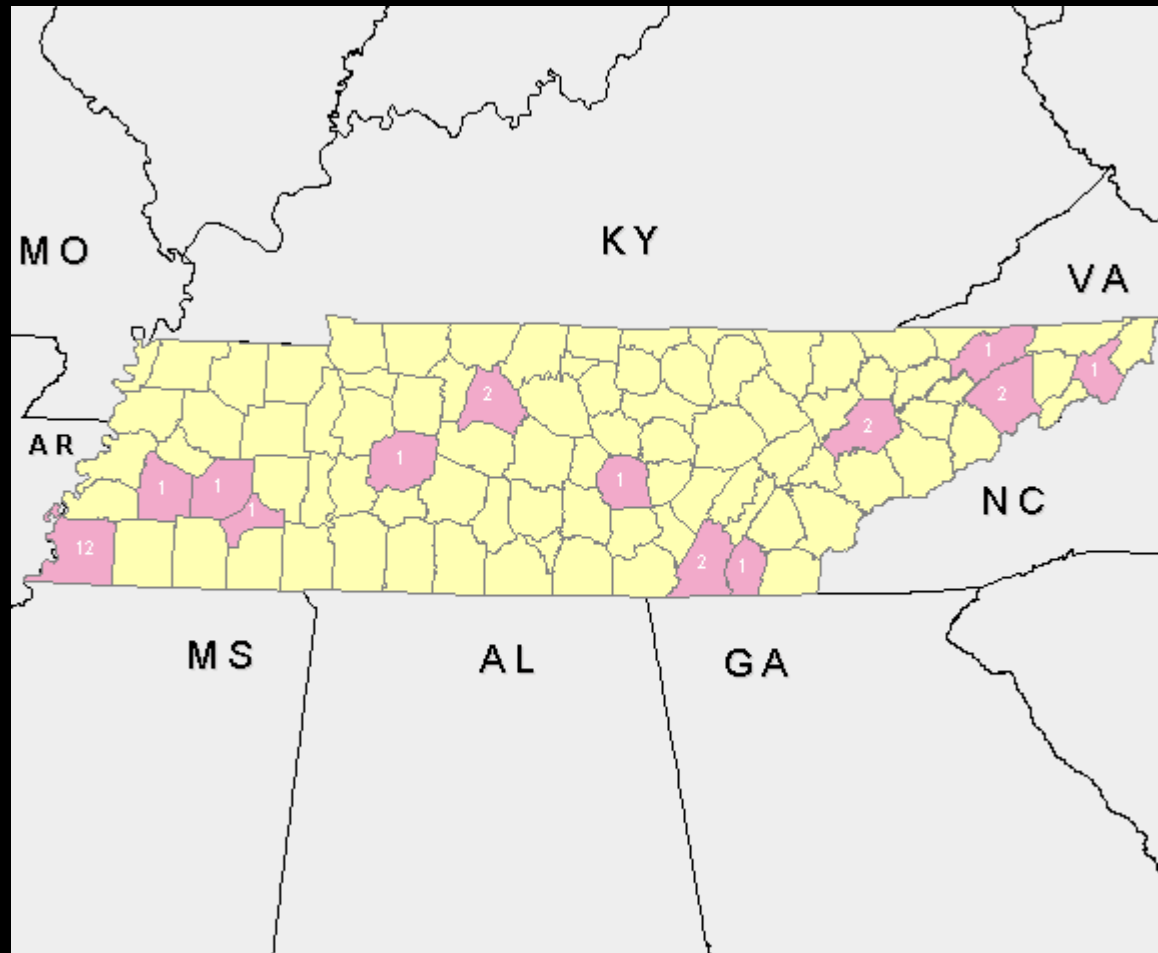


Additional Programs Identified

- Athens
- Dickson
- Collierville
- Cookeville
- Elizabethton
- Goodlettsville
- Hendersonville
- Lebanon
- Oak Ridge
- Somerville
- Paris
- Smyrna
- Tullahoma
- Morristown
- Greenville



Human Cases 2012



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

