

# Tarrant County Public Health

## Weekly Arbovirus Surveillance Report: MMWR Week Oct 8-Oct 14, 2023



### Week 41 Summary

- 170 mosquito pools\* have been tested in NTRL from week 41
  - Year-to-date NTRL has tested a total of 4487 mosquito pools
- 9 mosquito pools tested positive for WNV this week:  
Benbrook (1) Burleson\* (2) Euless (1) Fort Worth\* (2) Keller (2) Mansfield (1)
- There have been 0 imported human cases of SLE or Zika in 2023. There has been 5 cases of Dengue Fever.
  - There have been 9 human cases of West Nile disease.
- Average number of mosquitoes/trap include:
  - *Culex* spp: 71.5
  - *Aedes aegypti*: 14.3
  - *Aedes albopictus*: 3.5

NTRL– North Texas Regional Lab

WNV= West Nile virus; CHIKV= chikungunya virus; DENV= dengue virus; SLEV St. Louis encephalitis virus \* May include data from outside Tarrant County

### Cumulative Positive WNV Pools per Municipality

There have been a total of 229 positives in 2023

Arlington (55) Bedford (7) Benbrook (1) Burleson \*(10) Colleyville (9) Crowley (1) Euless (16) Fort Worth\* (50) Grapevine (15) Haltom City (4) Hurst (9) Keller (6) Mansfield\* (7) North Richland Hills (5) Pantego (1) River Oaks (4) Southlake (9) Unincorporated\*\* (18) Watauga (2)

\* May include data from outside Tarrant County \*\* Includes 2 positives from winter surveillance

**Table 1. MLE<sup>(1)</sup> and VI<sup>(2)</sup> for County Quadrants, Weeks 40 and 41**

|         | County Quadrant | # Gravid traps | Ave F <i>Culex</i> spp | Positive pools | MLE (Lower-Upper Limit) | VI    |
|---------|-----------------|----------------|------------------------|----------------|-------------------------|-------|
| Week 40 | Northeast       | 60             | 94.0                   | 4.0            | 1.77 (0.58-4.26)        | 0.166 |
|         | Northwest       | 27             | 62.0                   | 2.0            | 1.88 (0.34-6.23)        | 0.117 |
|         | Southeast       | 44             | 152.5                  | 5.0            | 3.47 (1.30-7.72)        | 0.529 |
|         | Southwest       | 28             | 105.4                  | 4.0            | 3.37 (1.10-9.38)        | 0.361 |
| Week 41 | Northeast       | 71             | 83.1                   | 4.0            | 1.60 (0.52-3.86)        | 0.133 |
|         | Northwest       | 27             | 55.2                   | 0.0            | 0.00 (0.00-4.14)        | 0.000 |
|         | Southeast       | 40             | 77.4                   | 1.0            | 0.74 (0.04-3.63)        | 0.058 |
|         | Southwest       | 27             | 76.0                   | 2.0            | 1.90 (0.34-7.75)        | 0.152 |

Data

source: Tarrant County Public Health

1. MLE= Maximum Likelihood Estimate or the estimate of the mosquito infection rate per mosquito species. 2. VI= Vector Index which is a measure of infectivity accounting for vector species composition, vector species population density, and proportion of vector population infected with WNV

Averages, MLE, and limits will be given for species with identified infection rates only and only for the latest two week. MLE, Lower and Upper Limits are based on a 95% confidence interval. All data in this table is based on collection date.

Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInRate, Version 4.0: a Microsoft® Office Excel® Add-In to compute prevalence estimates

## Cumulative Data for the Tarrant County Region, Weeks 38-41

| Week  | Sep 17-<br>Sep 23 | Sep 24-<br>Sep 30 | Oct 1-<br>Oct 7 | Oct 8-Oct<br>14 | YTD      |
|---|-------------------|-------------------|-----------------|-----------------|----------|
| MMWR Week   | 38                | 39                | 40              | 41              |          |
| Total number of gravid traps set in Tarrant Region              | 159               | 162               | 159             | 165             | 4255     |
| Average number of <i>Culex</i> spp per gravid trap              | 59.5              | 109.1             | 106.5           | 71.5            | 147.1    |
| Number of mosquito pools tested <sup>1</sup> (NTRL; non-NTRL)   | 169;7             | 170;16            | 168;16          | 170;13          | 4487;318 |
| Number of positive mosquito pools (NTRL; non-NTRL) <sup>1</sup> | 0;0               | 8;0               | 16;0            | 9;0             | 229;0    |
| Confirmed WNV human cases (WNF; WNND) <sup>2</sup>              | 0;0               | 0;0               | 0;0             | 0;0             | 1;9      |
| WNV infection rate per 1,000 <i>Culex</i> spp <sup>3</sup>      | 0.00              | 1.34              | 2.55            | 1.23            |          |
| Weekly vector index <sup>4</sup>                                | 0.000             | 0.139             | 0.310           | 0.101           |          |
| Total BG Sentinel traps set in Tarrant Region                   | 23                | 17                | 20              | 22              | 620      |
| Average number of female <i>Aedes aegypti</i> per BG trap       | 5.2               | 11.2              | 8.3             | 14.3            | 3.8      |
| Average number of female <i>Aedes albopictus</i> per BG trap    | 1.4               | 1.3               | 1.8             | 3.5             | 2.8      |

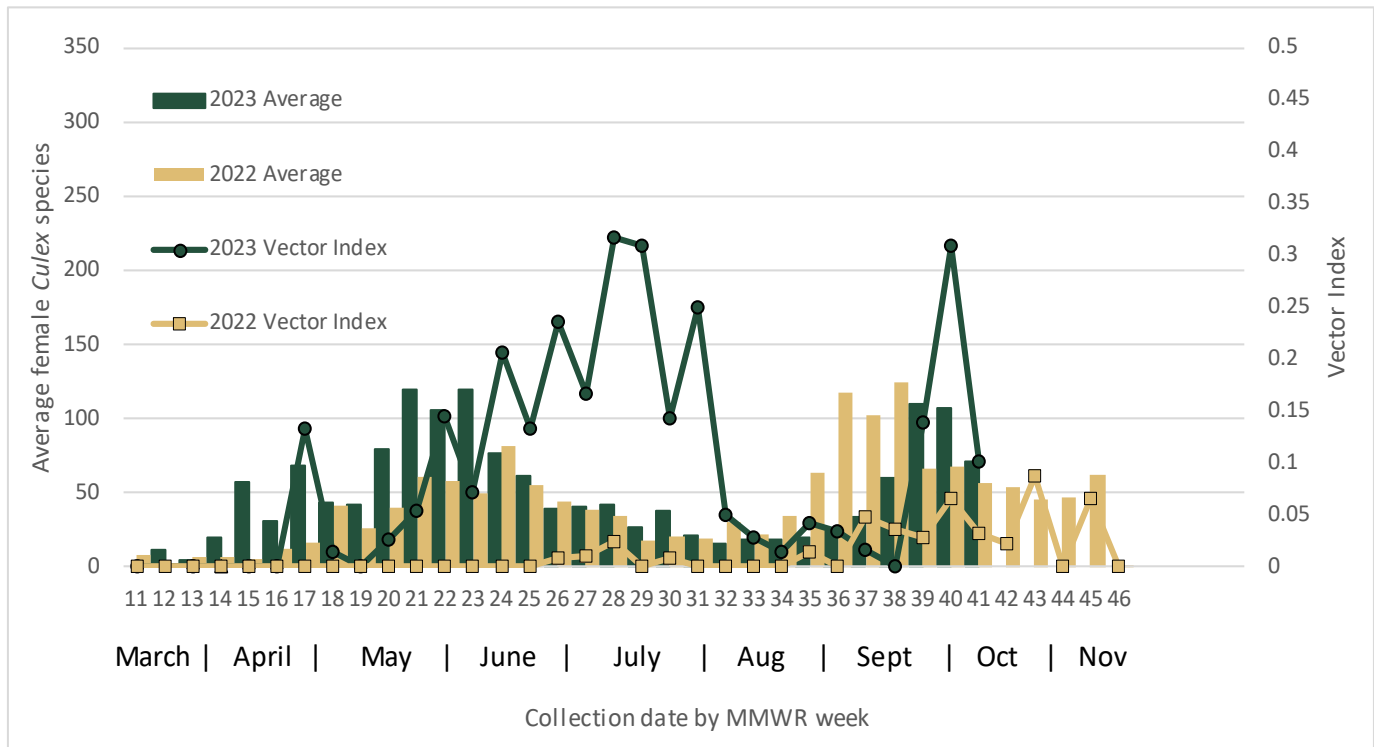
<sup>1</sup> Based on mosquito collection date; NTRL = North Texas Regional Laboratory

<sup>2</sup> Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease

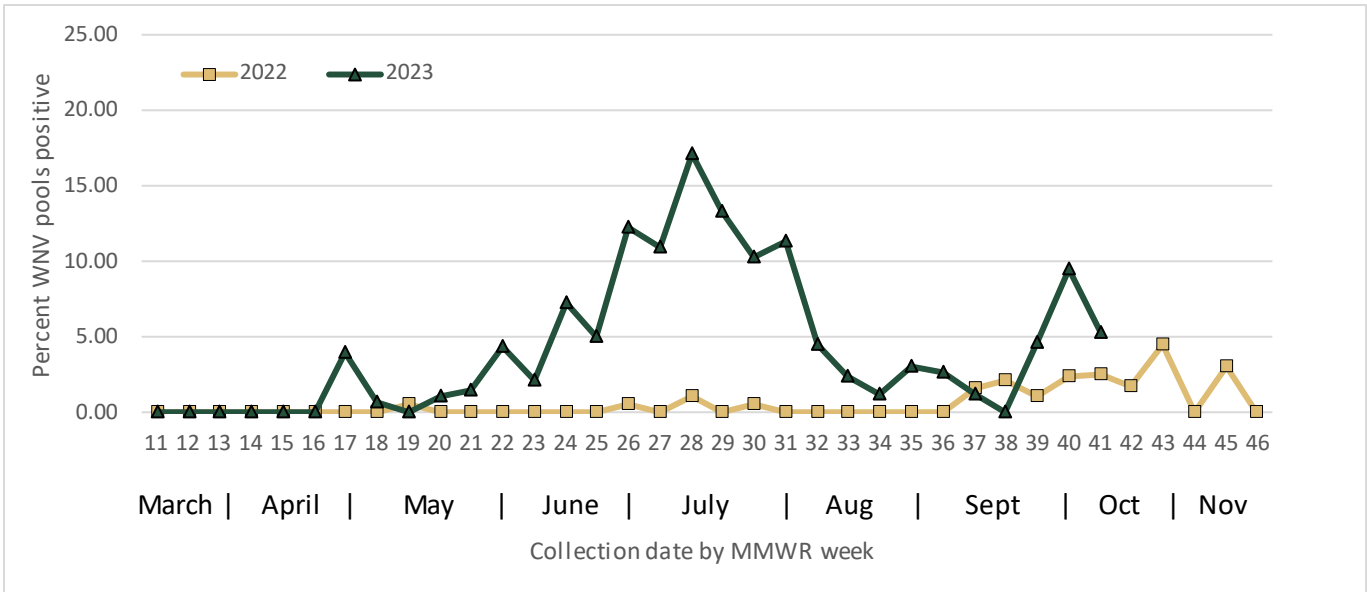
<sup>3</sup> Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, Version 4.0: a Microsoft® Office Excel® Add-In to compute prevalence estimates from pooled samples. Centers for Disease Control and Prevention, Fort Collins, CO, U.S.A., 2009 *Culex* spp includes pools of both *Cx restuans* and *Cx quinquefasciatus*. These MLEs are calculated separately, per species and added together as per instructions by CDC.

<sup>4</sup> Vector Index is a measure of infectivity accounting for vector species composition, vector species population density, and proportion of vector population infected with WNV  
Note: Infection rate and vector index calculations now includes pools from outside laboratories; Data subject to change due to on-going case investigations, mosquito collection, and testing. Data source: Tarrant County Public Health

**Figure 1. Average Number of Female *Culex* Species Per Trap and Vector Index by Collection Date, Tarrant County, 2022-2023**



**Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2022-2023**



Data Source: Tarrant County Public Health

**Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on October 17, 2023**

| North Texas Counties           | WNV                     |                | CHIKV                   |             | DENV                    |             | SLEV                    |             | Zika                    |             |
|--------------------------------|-------------------------|----------------|-------------------------|-------------|-------------------------|-------------|-------------------------|-------------|-------------------------|-------------|
|                                | Positive Mosquito Pools | Human cases    | Positive Mosquito Pools | Human Cases | Positive Mosquito Pools | Human Cases | Positive Mosquito Pools | Human Cases | Positive Mosquito Pools | Human Cases |
| Collin                         | 14                      | 1 WNF; 0 WNND  | 0                       | 0           | 0                       | 3           | 0                       | 0           | 0                       | 0           |
| Dallas                         | 204                     | 4 WNF; 14 WNND | 0                       | 0           | 0                       | 4           | 0                       | 0           | 0                       | 0           |
| Denton                         | 17                      | 0 WNF; 2 WNND  | 0                       | 0           | 0                       | 1           | 0                       | 0           | 0                       | 0           |
| Johnson                        | 9                       | 0 WNF; 0 WNND  | 0                       | 0           | 0                       | 0           | 0                       | 0           | 0                       | 0           |
| <b>Non-Tarrant North Texas</b> | <b>244</b>              | <b>5</b>       | <b>16</b>               |             | <b>0</b>                | <b>0</b>    | <b>8</b>                | <b>0</b>    | <b>0</b>                | <b>0</b>    |
| <b>All Texas Counties</b>      | <b>828</b>              | <b>13</b>      | <b>47</b>               |             | <b>0</b>                | <b>0</b>    | <b>23</b>               | <b>11</b>   | <b>0</b>                | <b>0</b>    |

\*All reported CHIKV, DENV, & Zika human cases are travel-related  
WNV– West Nile virus; WNF– West Nile fever; WNND– West Nile neuroinvasive disease; CHIKV– Chikungunya virus;  
DENV– Dengue virus; SLEV– St. Louis encephalitis virus

**For Additional Information Please Visit The Links Below:**

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| Department of State Health Services: <ul style="list-style-type: none"> <li><a href="#">Arbovirus Activity Reports</a></li> <li><a href="#">Texas Zika</a></li> </ul> Tarrant County educational videos and documents: <ul style="list-style-type: none"> <li><a href="#">Eliminating Mosquito Breeding Sites</a></li> <li><a href="#">Barrier Treatments for Mosquitoes</a></li> <li><a href="#">Mosquitoes Love Water</a></li> <li><a href="#">Mosquito Prevention Tool Kit</a></li> </ul> | Tarrant County web pages: <ul style="list-style-type: none"> <li><a href="#">Be Mosquito Free</a></li> <li><a href="#">Zika</a></li> <li><a href="#">Vector Control</a></li> <li><a href="#">WNV Interactive Mapping Tool</a></li> </ul> Environmental Protection Agency: <ul style="list-style-type: none"> <li><a href="#">Insect Repellent Information</a></li> </ul> Center for Disease Control and Prevention: <ul style="list-style-type: none"> <li><a href="#">Zika Travel Information</a></li> </ul> |
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