

# Tarrant County Public Health

## Weekly Arbovirus Surveillance Report: MMWR Week Oct 29-Nov 4, 2023



### Week 44 Summary

- 53 mosquito pools\* have been tested in NTRL from week 44
  - Year-to-date NTRL has tested a total of 4858 mosquito pools
- 0 mosquito pools tested positive for WNV this week:
  
- There have been 0 imported human cases of SLE or Zika in 2023. There has been 5 cases of Dengue Fever.
  - There have been 13 human cases of West Nile disease.
- Average number of mosquitoes/trap include:
  - *Culex* spp: 17.3
  - *Aedes aegypti*: 2.5
  - *Aedes albopictus*: 0.4

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 243 positives in 2023

Arlington (58) Bedford (7) Benbrook (1) Burleson \*(11) Colleyville (10) Crowley (1) Euless (16) Fort Worth\* (52) Grapevine (16) Haltom City (4) Hurst (9) Keller (7) Mansfield\* (8) North Richland Hills (5) Pantego (1) River Oaks (4) Southlake (10) Unincorporated\*\* (21) 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 43 and 44**

	County Quadrant	# Gravid traps	Ave F <i>Culex</i> spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 43	Northeast	52	60.8	2.0	1.32 (0.24-4.33)	0.080
	Northwest	25	33.4	0.0	0.00 (0.00-5.98)	0.000
	Southeast	40	123.6	2.0	1.60 (0.29-7.05)	0.207
	Southwest	21	77.2	0.0	0.00 (0.00-4.35)	0.000
Week 44	Northeast	29	17.7	0.0	0.00 (0.00-7.53)	0.000
	Northwest	0	0.0	0.0	0.00 (0.00-0.00)	0.000
	Southeast	19	29.2	0.0	0.00 (0.00-10.51)	0.000
	Southwest	5	5.6	0.0	0.00 (0.00-90.19)	0.000

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 41-44

Week	Oct 8- Oct 14	Oct 15- Oct 21	Oct 22- Oct 28	Oct 29- Nov 4	YTD
MMWR Week	41	42	43	44	
Total number of gravid traps set in Tarrant Region	165	161	138	53	4607
Average number of <i>Culex</i> spp per gravid trap	71.5	59.1	77.1	17.3	147.3
Number of mosquito pools tested <sup>1</sup> (NTRL; non-NTRL)	170;13	172;5	146;8	53;0	4858;662
Number of positive mosquito pools (NTRL; non-NTRL) <sup>1</sup>	9;0	9;0	5;0	0;0	243;0
Confirmed WNV human cases (WNF; WNND) <sup>2</sup>	0;0	0;0	0;1	0;0	1;12
WNV infection rate per 1,000 <i>Culex</i> spp <sup>3</sup>	1.23	1.84	0.97	0.00	
Weekly vector index <sup>4</sup>	0.101	0.129	0.073	0.000	
Total BG Sentinel traps set in Tarrant Region	22	25	17	13	675
Average number of female <i>Aedes aegypti</i> per BG trap	14.3	9.8	18.0	2.5	4.4
Average number of female <i>Aedes albopictus</i> per BG trap	3.5	4.4	2.1	0.4	2.8

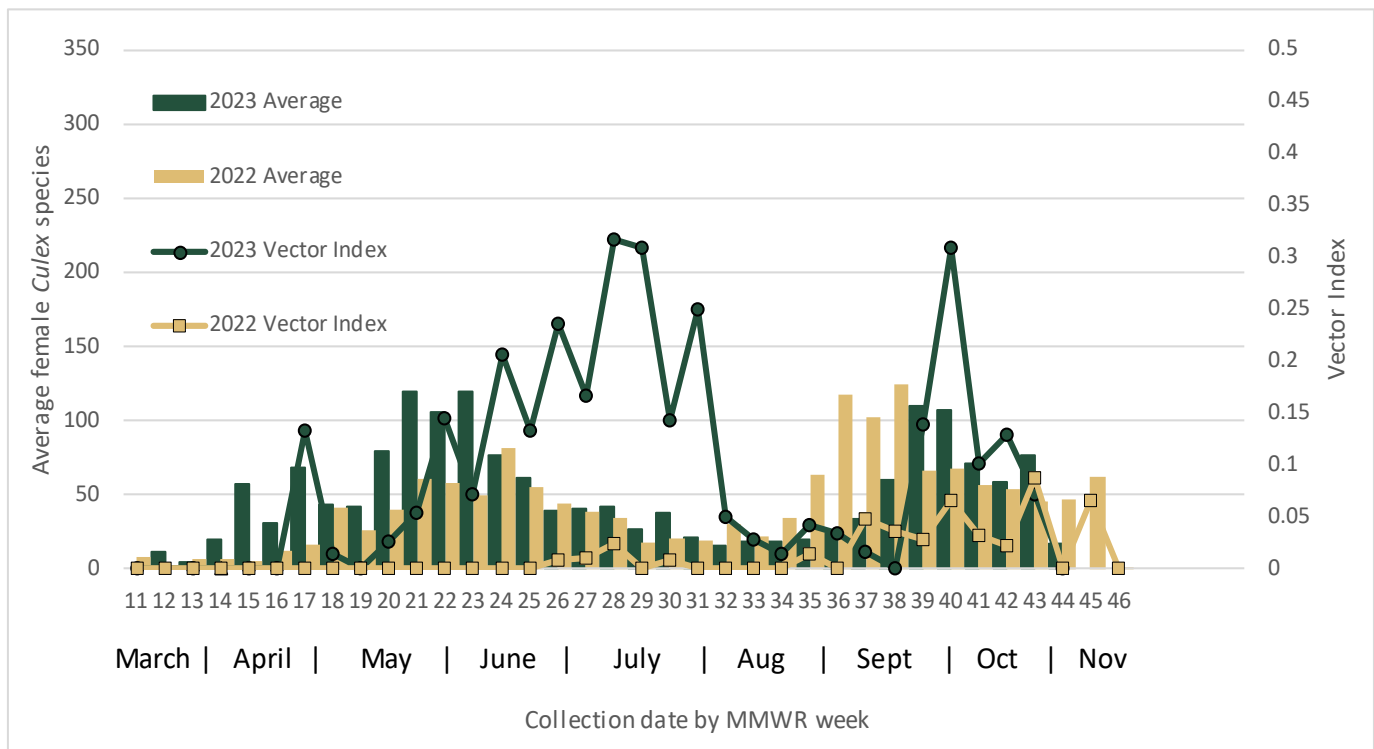
<sup>1</sup> Based on mosquito collection date; NTRL = North Texas Regional Laboratory

<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

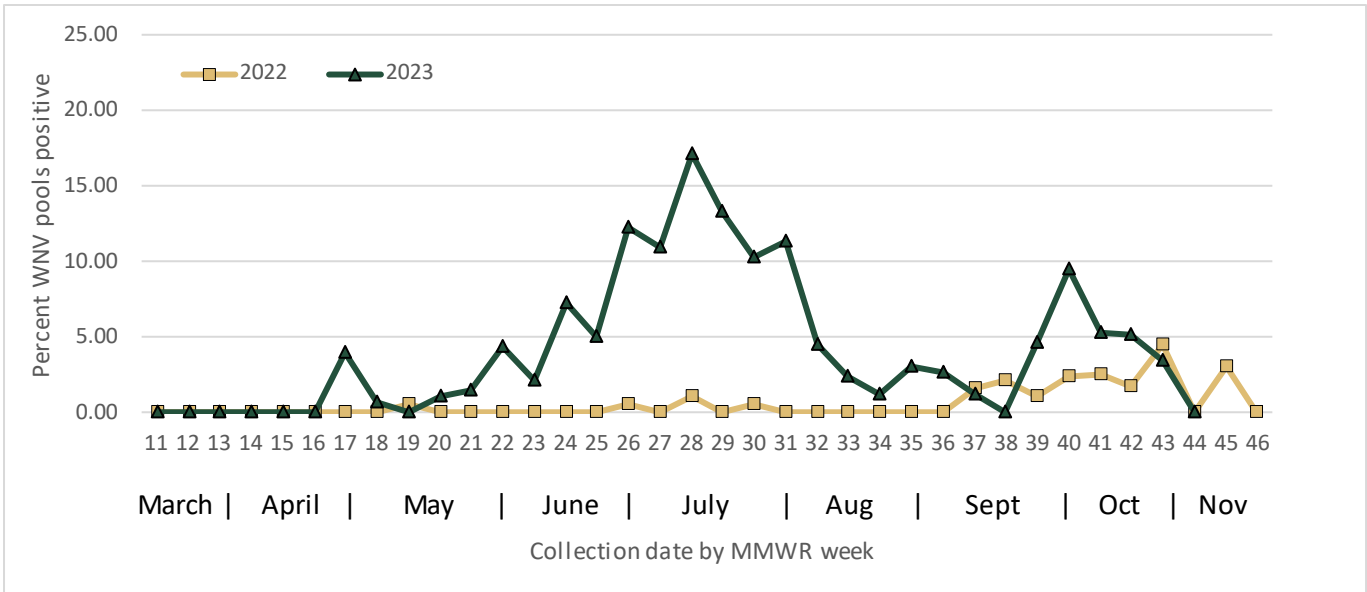
<sup>3</sup> Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, Version 4.0: a Microsoft® Office Excel® Add-In to compute prevalence estimates from pooled samples. Centers for Disease Control and Prevention, Fort Collins, CO, U.S.A., 2009 *Culex* spp includes 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 November 7, 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	15	1 WNF;	0 WNND	0	0	0	4	0	0	0	0	0
Dallas	213	6 WNF;	14 WNND	0	0	0	5	0	0	0	0	0
Denton	17	0 WNF;	3 WNND	0	0	0	2	0	0	0	0	0
Johnson	10	0 WNF;	0 WNND	0	0	0	0	0	0	0	0	0
<b>Non-Tarrant North Texas</b>	<b>255</b>	<b>7</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>All Texas Counties</b>	<b>898</b>	<b>21</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>13</b>	<b>0</b>	<b>0</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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