

Tarrant County Public Health

Weekly Arbovirus Surveillance Report: MMWR Week Oct 1-Oct 7, 2023



Week 40 Summary

- 168 mosquito pools* have been tested in NTRL from week 40
 - Year-to-date NTRL has tested a total of 4317 mosquito pools
- 16 mosquito pools tested positive for WNV this week:
 - Arlington (3) Bedford (1) Burleson* (2) Crowley (1) Fort Worth* (3) Hurst (1) Mansfield (1) Southlake (1) Unincorporated (3)
- 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: 106.5
 - *Aedes aegypti*: 8.3
 - *Aedes albopictus*: 1.8

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 220 positives in 2023

Arlington (55) Bedford (7) Burleson *(8) Colleyville (9) Crowley (1) Euless (15) Fort Worth* (48) Grapevine (15) Haltom City (4) Hurst (9) Keller (4) Mansfield* (6) 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⁽¹⁾ and VI⁽²⁾ for County Quadrants, Weeks 39 and 40

	County Quadrant # Gravid traps	Ave F <i>Culex</i> spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 39	Northeast	72	3.0	1.15 (0.30-3.70)	0.081
	Northwest	29	0.0	0.00 (0.00-3.24)	0.000
	Southeast	41	3.0	2.02 (0.53-5.50)	0.284
	Southwest	20	2.0	2.42 (0.44-7.99)	0.237
Week 40	Northeast	60	4.0	1.77 (0.58-4.26)	0.166
	Northwest	27	2.0	1.88 (0.34-6.23)	0.117
	Southeast	44	5.0	3.47 (1.30-7.72)	0.529
	Southwest	28	4.0	3.37 (1.10-9.38)	0.361

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 37-40

Week	Sep 10- Sep 16	Sep 17- Sep 23	Sep 24- Sep 30	Oct 1-Oct 7	YTD
MMWR Week	37	38	39	40	
Total number of gravid traps set in Tarrant Region	154	159	162	159	4090
Average number of <i>Culex</i> spp per gravid trap	33.7	59.5	109.1	106.5	146.4
Number of mosquito pools tested ¹ (NTRL; non-NTRL)	161;8	169;7	170;16	168;16	4317;318
Number of positive mosquito pools (NTRL; non-NTRL) ¹	2;0	0;0	8;0	16;0	220;0
Confirmed WNV human cases (WNF; WNND) ²	0;0	0;0	0;0	0;0	1;8
WNV infection rate per 1,000 <i>Culex</i> spp ³	0.49	0.00	1.34	2.55	
Weekly vector index ⁴	0.016	0.000	0.139	0.310	
Total BG Sentinel traps set in Tarrant Region	20	23	17	20	598
Average number of female <i>Aedes aegypti</i> per BG trap	4.2	5.2	11.2	8.3	3.5
Average number of female <i>Aedes albopictus</i> per BG trap	1.0	1.4	1.3	1.8	2.8

¹ Based on mosquito collection date; NTRL = North Texas Regional Laboratory

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

³ 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.

⁴ 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

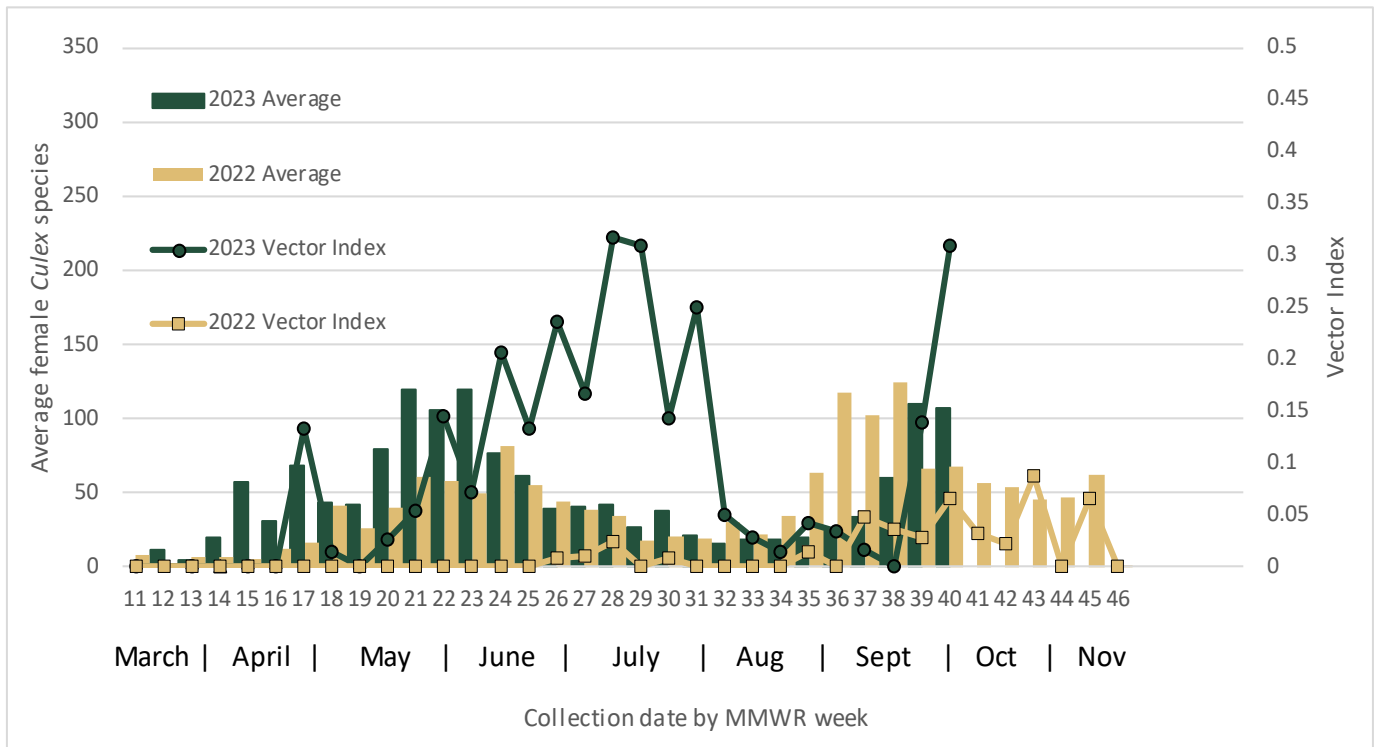
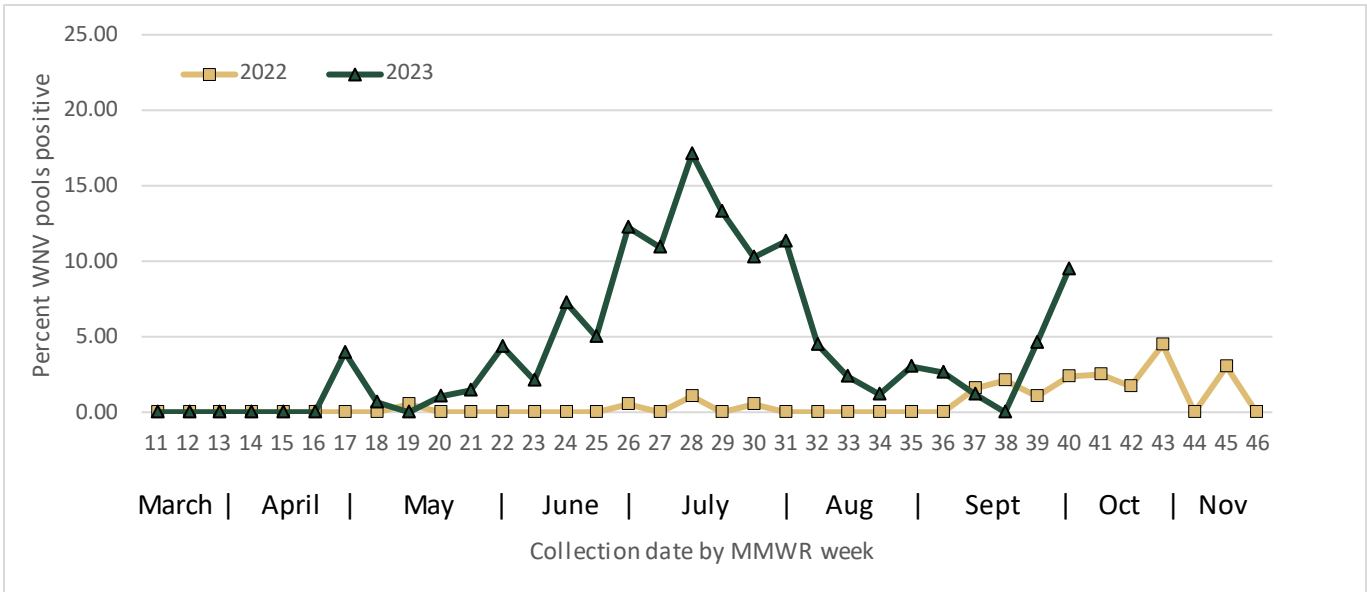


Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2022-2023



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on October 10, 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	10	1 WNF; 0 WNND	0	0	0	3	0	0	0	0	0
Dallas	203	3 WNF; 14 WNND	0	0	0	4	0	0	0	0	0
Denton	17	0 WNF; 2 WNND	0	0	0	0	0	0	0	0	0
Johnson	7	0 WNF; 0 WNND	0	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	237	4	16	0	0	7	0	0	0	0	0
All Texas Counties	777	11	43	0	2	23	11	0	0	0	0

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