Tarrant County Public Health

Weekly Arbovirus Surveillance Report: MMWR Week Jul 2-Jul 8, 2023

Week 27 Summary

- 146   mosquito pools* have been tested in NTRL from week   27
  - Year-to-date NTRL has tested a total of   2172 mosquito pools
- 16 mosquito pools tested positive for WNV this week:

  Arlington (3) Burleson* (1) Euless (2) Fort Worth* (1) Grapevine (1) Hurst (2) North Richland Hills (2) River Oaks (1) Unincorporated (3)

- There have been 0 imported human cases of SLE or Zika in 2023. There have been 0 cases of Dengue Fever.
  - There have been   0   human cases of West Nile disease.
- Average number of mosquitoes/trap include:
  - *Culex* spp*:*   40.8
  - *Aedes aegypti:*   2.3
  - *Aedes albopictus:*   8.7

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 83 positives in 2023

Arlington (21) Burleson *(4) Colleyville (7) Euless (5) Fort Worth* (14) Grapevine (6) Haltom City (1) Hurst (4) Keller (1) Mansfield* (1) North Richland Hills (2) River Oaks (2) Unincorporated (13) 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 26 and 27

	County Quadrant	# Gravid traps	Ave F *Culex* spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 25	Northeast	63	82.4	3.0	1.59 (0.42-2.14)	0.071
	Northwest	28	62.2	0.0	0.00 (0.00-1.99)	0.000
	Southeast	45	150.8	3.0	2.39 (0.63-3.27)	0.246
	Southwest	26	44.9	2.0	2.11 (0.38-3.48)	0.131
Week 26	Northeast	73	47.4	8.0	6.26 (2.99-5.88)	0.161
	Northwest	30	43.4	2.0	2.21 (0.40-3.60)	0.120
	Southeast	39	62.5	6.0	6.47 (2.65-6.86)	0.333
	Southwest	28	25.7	3.0	3.92 (1.04-5.35)	0.170

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. PooledInfRate, Version 4.0: a Microsoft® Office Excel© Add-In to compute prevalence estimates

Cumulative Data for the Tarrant County Region, Weeks 24-27

Week	Jun 11-Jun 17	Jun 18-Jun 24	Jun 25-Jul 1	Jul 2-Jul 8	YTD
MMWR Week	24	25	26	27	
Total number of gravid traps set in Tarrant Region	168	162	170	136	1999
Average number of *Culex* spp per gravid trap	76.5	60.8	39.3	40.8	151.8
Number of mosquito pools tested[1] (NTRL; non-NTRL)	178;20	160;19	171;15	146;0	2172;188
Number of positive mosquito pools (NTRL; non-NTRL)[1]	13;0	8;0	21;0	16;0	83;0
Confirmed WNV human cases (WNF; WNND)[2]	0;0	0;0	0;0	0;0	0;0
WNV infection rate per 1,000 *Culex spp*[3]	2.69	1.62	4.97	4.41	
Weekly vector index[4]	0.206	0.098	0.195	0.180	
Total BG Sentinel traps set in Tarrant Region	29	22	24	15	304
Average number of female *Aedes aegytpi* per BG trap	8.2	14.7	4.9	2.3	3.0
Average number of female *Aedes albopictus* per BG trap	5.4	6.6	3.9	8.7	3.3

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
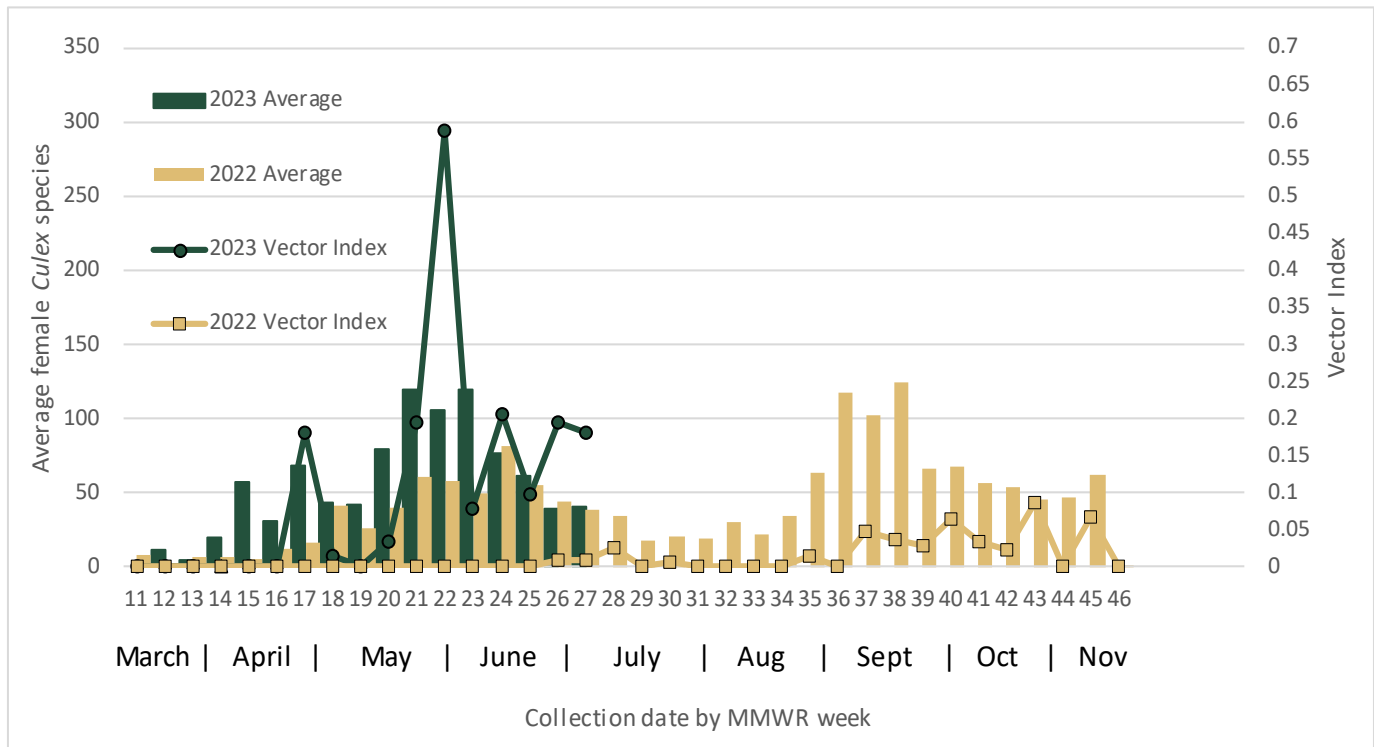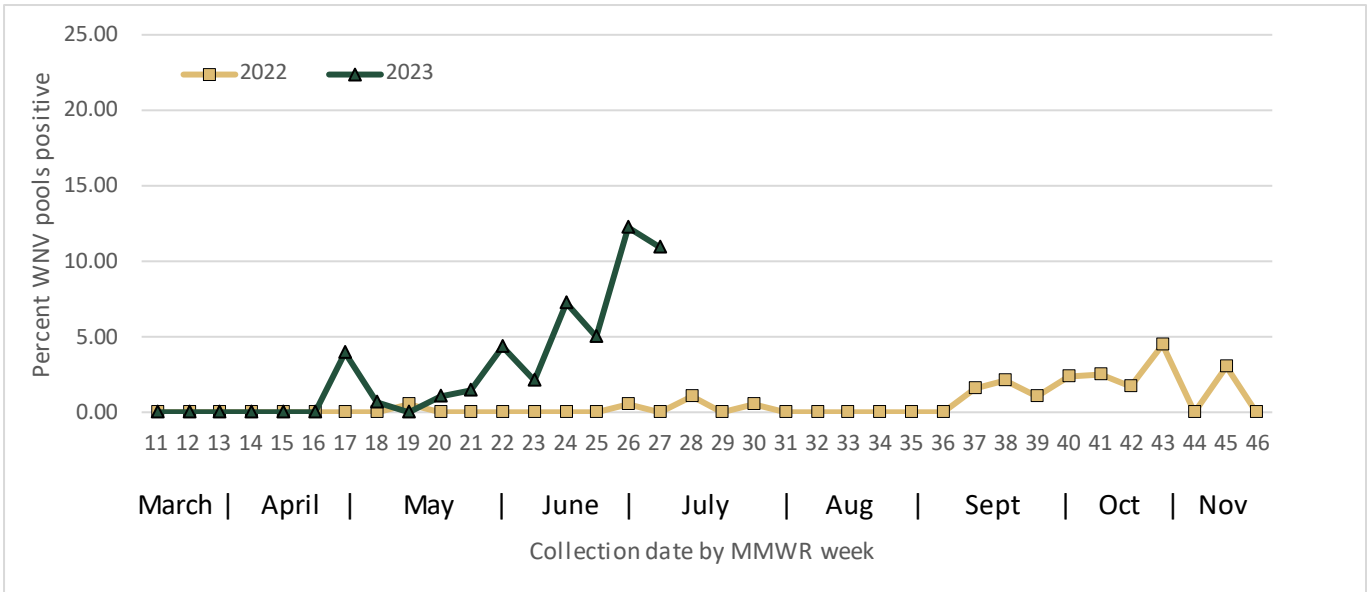

Data Source: Tarrant County Public Health

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 July 11, 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	2	0 WNF;	0 WNND		0	0	0	0	0	0	0	0
Dallas	48	0 WNF;	0 WNND		0	0	0	1	0	0	0	0
Denton	2	0 WNF;	0 WNND		0	0	0	0	0	0	0	0
Johnson	4	0 WNF;	0 WNND		0	0	0	0	0	0	0	0
Non-Tarrant North Texas	56	0		0	0	0	0	1	1	0	0	0
All Texas Counties	171	0	0	0	0	0	0	0	1	1	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:

Department of State Health Services:
- Arbovirus Activity Reports
- Texas Zika

Tarrant County educational videos and documents:
- Eliminating Mosquito Breeding Sites
- Barrier Treatments for Mosquitoes
- Mosquitoes Love Water
- Mosquito Prevention Tool Kit

Tarrant County web pages:
- Be Mosquito Free
- Zika
- Vector Control
- WNV Interactive Mapping Tool

Environmental Protection Agency:
- Insect Repellent Information

Center for Disease Control and Prevention:
- Zika Travel Information