Tarrant County Public Health

Arbovirus Final Surveillance Report
MMWR Week Sep 25-Oct 1, 2022

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Week 39 Summary

- 175 mosquito pools* have been tested in NTRL from week 39
  - Year-to-date NTRL has tested a total of 4188 mosquito pools
- 2 mosquito pools tested positive for WNV this week:

  Arlington (1) Bedford (1)
- There have been 0 imported human cases of SLE or Zika in 2022. There have been 4 cases of Dengue Fever.
  - There has been 1 human case of West Nile disease.
- Average number of mosquitoes/trap include:
  - *Culex* spp: 66.6
  - *Aedes aegypti:* 15.9
  - *Aedes albopictus* 1.9

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 has been a total of 20 positive in 2022.

Arlington (3) Bedford (2) Burleson *(3) Fort Worth* (1) Grand Prairie* (6) North Richland Hills (1) Pantego (1) Richland Hills (1) Unincorporated (1) Watauga (1)

* May include data from outside Tarrant County

Table 1. MLE[1] and VI[2] for County Quadrants, Week 38 and 39

	County Quadrant	# gravid traps	Ave F *Culex* spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 38	Northeast	78	92.5	0.0	0.00 (0.00-0.60)	0.000
	Northwest	30	131.3	0.0	0.00 (0.00-1.51)	0.000
	Southeast	43	133.5	0.0	0.00 (0.00-1.33)	0.000
	Southwest	29	102.6	2.0	1.66 (0.30-2.75)	0.170
Week 39	Northeast	69	55.1	1.0	0.47 (0.03-1.13)	0.026
	Northwest	34	56.0	0.0	0.00 (0.00-1.71)	0.000
	Southeast	41	53.6	1.0	1.12 (0.06-2.72)	0.060
	Southwest	27	59.5	0.0	0.00 (0.00-2.15)	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. 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

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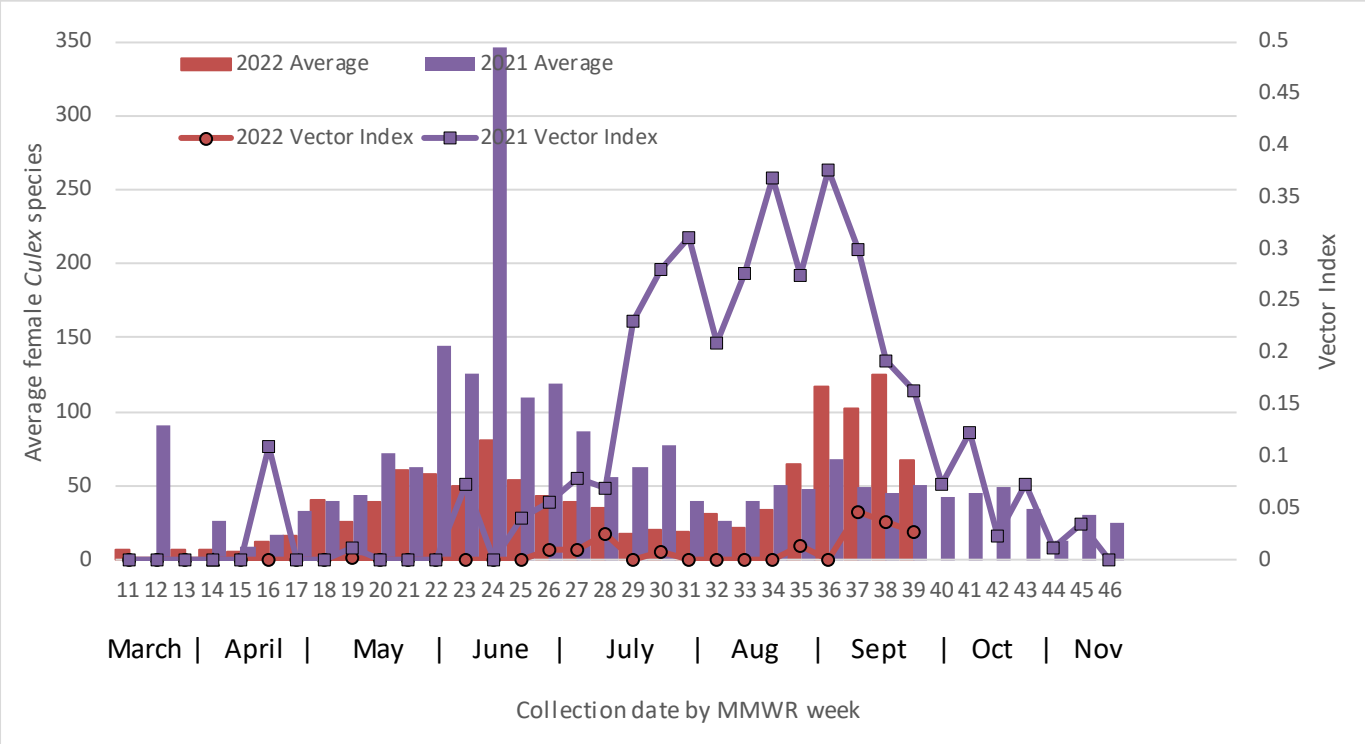
Cumulative Data for the Tarrant County Region, Weeks 36-39

Week	Sep 4-Sep 10	Sep 11-Sep 17	Sep 18-Sep 24	Sep 25-Oct 1	YTD
MMWR Week	36	37	38	39	
Total number of gravid traps set in Tarrant Region	154	171	180	171	3883
Average number of *Culex* spp per gravid trap	117.5	101.9	124.7	66.6	41.1
Number of mosquito pools tested[1] (NTRL; non-NTRL)	161;18	184;20	190;25	175;16	4188;277
Number of positive mosquito pools (NTRL; non-NTRL)[1]	0;0	3;0	4;0	2;0	14;6
Confirmed WNV human cases (WNF; WNND)[2]	0;0	0;0	0;0	0;0	1;0
WNV infection rate per 1,000 *Culex spp*[3]	0.00	0.46	0.29	0.41	
Weekly vector index[4]	0.000	0.047	0.036	0.027	
Total BG Sentinel traps set in Tarrant Region	24	26	30	33	700
Average number of female *Aedes aegytpi* per BG trap	13.2	21.7	18.3	15.9	5.3
Average number of female *Aedes albopictus* per BG trap	2.0	3.6	2.6	1.9	2.2

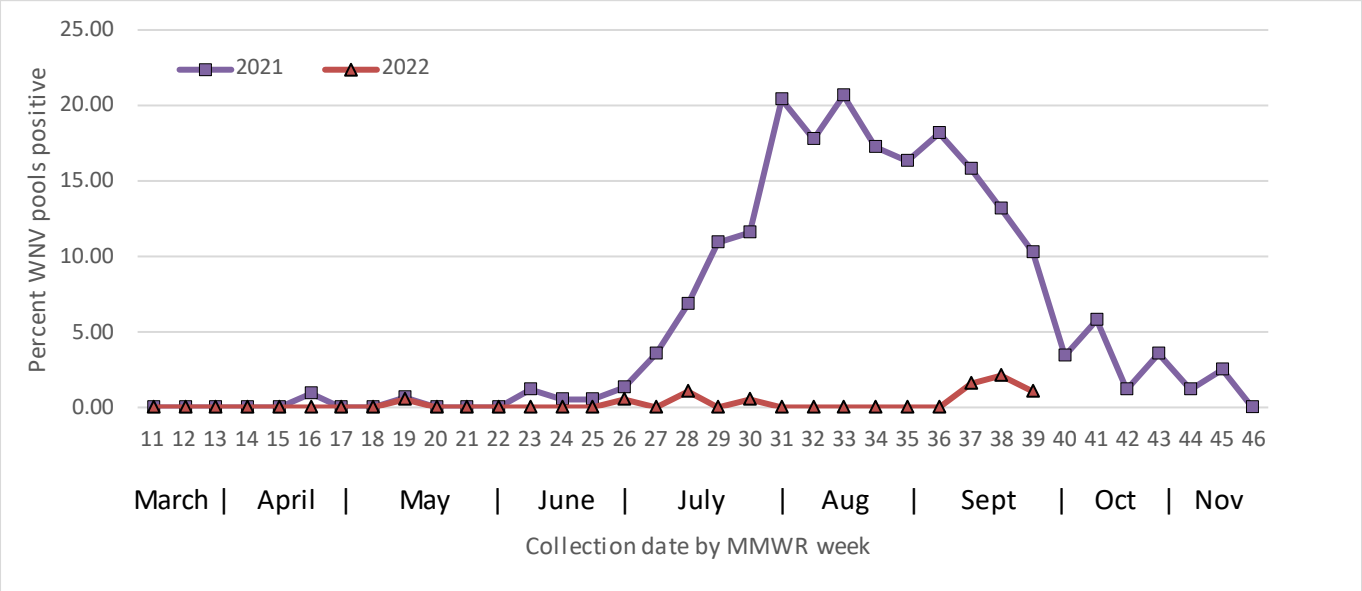
1 Based on mosquito collection date; NTRL = North Texas Regional Laboratory
2 Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease
3 Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, 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, 2021-2022



Data Source: Tarrant County Public Health

Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2021-2022



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on October 4, 2022

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	17	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Dallas	34	0	WNF;	1	WNND	0	0	0	6	0	0	0	0
Denton	10	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Johnson	2	0	WNF;	0	WNND	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	63	0		1		0	0	0	6	0	0	0	0
All Texas Counties	311	2		15		0	0	0	16	2	0	0	0

**All reported CHIKV, DENV, & Zika human cases are travel-related*
WNV– West Nile virus; WNF– West Nile fever; WNND– West Nile nueroinvasive 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