Tarrant County Public Health

Arbovirus Final Surveillance Report
MMWR Week Sep 5-Sep 11, 2021

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Week 36 Summary

- 176 mosquito pools* have been tested in NTRL from week 36
  - Year-to-date NTRL has tested a total of 3467 mosquito pools
- 34 mosquito pools tested positive for WNV this week:

  Arlington (3) Bedford (1) Benbrook (1) Burleson* (3) Colleyville (3) Crowley (1) DFW Airport (1) Fort Worth* (7) Grand Prairie* (2) Keller (2) Mansfield (1) North Richland Hills (2) Southlake (4) Unincorporated (3)
- There has been 1 imported human case of Dengue, and 0 cases of SLE or Zika in 2021.
  - There has been 2 human cases of West Nile disease.
- Average number of mosquitoes/trap include:
  - *Culex* spp: 68.4
  - *Aedes aegypti:* 2.6
  - *Aedes albopictus* 5.6

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 300 positive in 2021.

Arlington (15) Bedford (3) Benbrook (2) Burleson *(44) Colleyville (12) Crowley (20) DFW Airport*(5) Euless (6) Fort Worth* (50) Grand Prairie* (32) Grapevine (13) Hurst (6) Keller (12) Lakeside (2) Mansfield* (24) North Richland Hills (22) Pantego (2) Southlake (11) Unincorporated (18) Watauga (1)

* May include data from outside Tarrant County

Table 1. MLE[1] and VI[2] for County Quadrants, Week 35 and 36

	County Quadrant	# gravid traps	Ave F *Culex* spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 35	Northeast	79	47.2	14.0	6.65 (3.81-10.94)	0.313
	Northwest	27	40.8	2.0	2.67 (0.48-8.81)	0.109
	Southeast	50	79.4	6.0	4.85 (2.02-10.03)	0.385
	Southwest	34	45.7	6.0	6.81 (2.82-14.29)	0.311
Week 36	Northeast	73	40.0	15.0	8.67 (5.04-14.13)	0.347
	Northwest	27	74.3	4.0	3.77 (1.24-9.07)	0.280
	Southeast	44	63.1	6.0	4.62 (1.90-9.69)	0.291
	Southwest	32	70.9	3.0	2.83 (0.76-7.69)	0.201

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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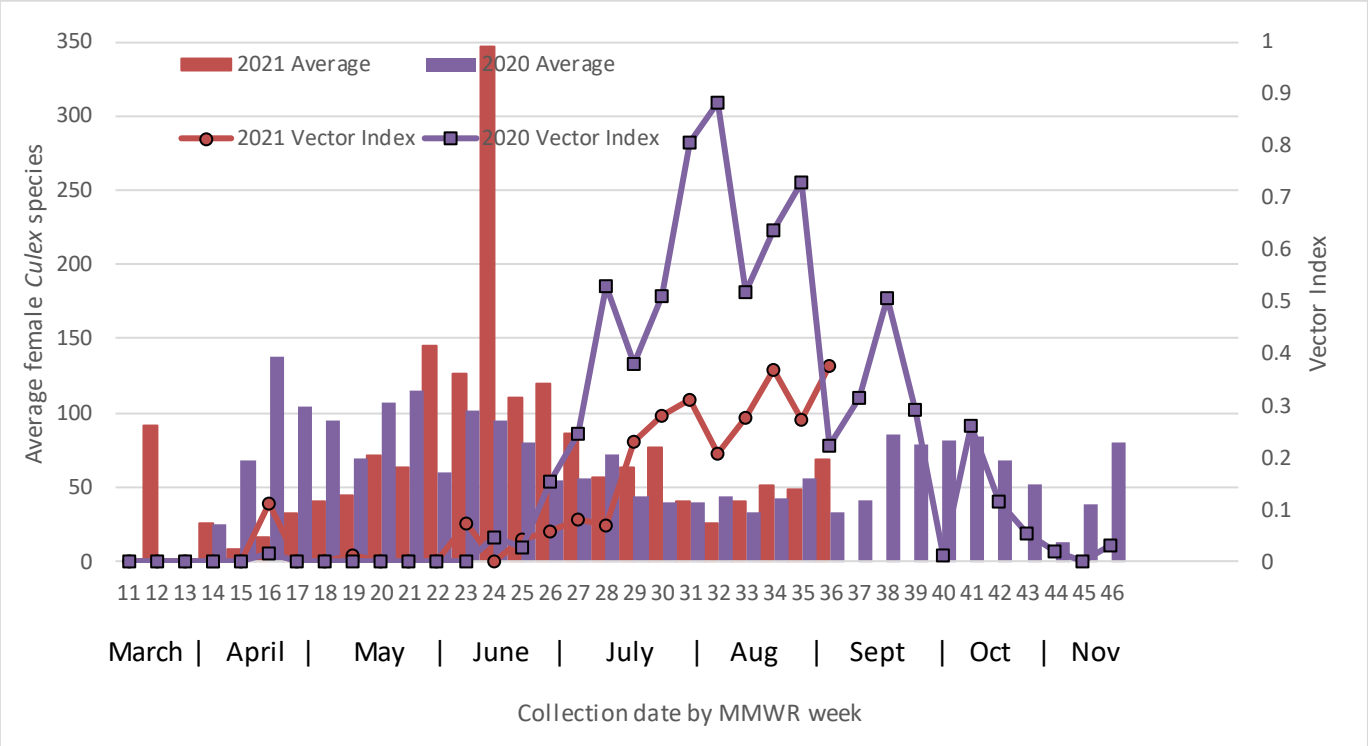
Cumulative Data for the Tarrant County Region, Weeks 33-36

Week	Aug 15-Aug 21	Aug 22-Aug 28	Aug 29-Sep 4	Sep 5-Sep 11	YTD
MMWR Week	33	34	35	36	
Total number of gravid traps set in Tarrant Region	170	185	190	176	3253
Average number of *Culex* spp per gravid trap	39.7	50.9	48.1	68.4	67.0
Number of mosquito pools tested[1] (NTRL; non-NTRL)	179;11	185;17	190;21	176;20	3467;322
Number of positive mosquito pools (NTRL; non-NTRL)[1]	37;1	32;2	31;2	32;2	268;32
Confirmed WNV human cases (WNF; WNND)[2]	0;0	0;0	0;0	0;0	2;0
WNV infection rate per 1,000 *Culex spp*[3]	6.98	7.25	5.70	5.50	
Weekly vector index[4]	0.277	0.369	0.274	0.376	
Total BG Sentinel traps set in Tarrant Region	27	33	39	30	704
Average number of female *Aedes aegytpi* per BG trap	4.1	8.6	11.2	2.6	3.0
Average number of female *Aedes albopictus* per BG trap	9.3	5.0	7.5	5.6	4.9

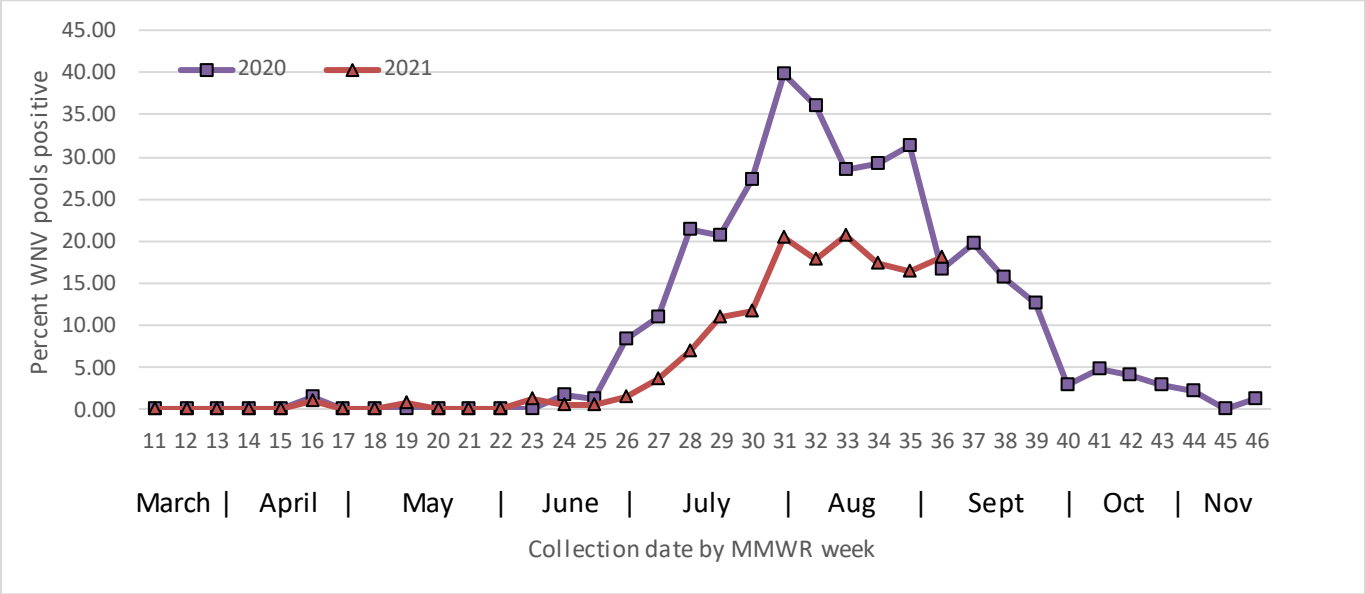
1 Based on mosquito collection date; NTRL = North Texas Regional Laboratory
2 Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease
3 Calculated using a Maximum Likelihood Estimation (MLE). Biggerstaff, Brad J. PooledInfRate, 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, 2020-2021



Data Source: Tarrant County Public Health

Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2020-2021



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on September 14, 2021

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	37	0	WNF;	0	WNND		0	0	0	0	0	0	0	0
Dallas	275	1	WNF;	8	WNND		0	0	0	0	0	0	0	0
Denton	40	0	WNF;	1	WNND		0	0	0	0	0	0	0	0
Johnson	45	0	WNF;	0	WNND		0	0	0	0	0	0	0	0
Non-Tarrant North Texas	397	1		9			0	0	0	0	0	0	0	0
All Texas Counties	1146	1		10			0	0	0	4	31	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