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## Arbovirus Surveillance Final Report MMWR Week Nov 4th-Nov 10th, 2018

### Week 45 Summary

- 83 mosquito pools\* have been tested in NTRL from week 45
  - Year-to-date NTRL has tested a total of 5017 mosquito pools
- 5 mosquito pool tested positive for WNV this week:  
Colleyville (1) Crowley (2) North Richland Hills (1) Southlake (1)
- There have been 0 human cases of CHIK, Dengue, SLE, or Zika in 2018.
  - There have been 18 human cases of West Nile disease
- Average number of mosquitoes/trap include:
  - *Culex quinquefasciatus*: 39.8
  - *Aedes aegypti*: 1.5
  - *Aedes albopictus*: 0.1

NTRL= North Texas Regional Lab WNV= West Nile virus; CHIKV= Chikungunya virus; DENV= Dengue virus; SLEV St. Louis encephalitis virus  
\* May encompass counties outside of Tarrant County \*\* Non-NTRL results \*\*\*Mosquito species may change based on seasonality

### Tarrant County Region WNV Positive Year to Date Summary

There have been a total of 278 positives in 2018.

Arlington (47) Bedford (10) Benbrook (2) Burleson \*(5) Colleyville (32) Crowley (3) Euless (11) Everman (1) Fort Worth\*(48) Grand Prairie (2) Grapevine (13) Haltom City (5) Haslet (1) Hurst (7) Keller (6) Kennedale (2) Lake Worth (1) Mansfield (7) North Richland Hills (31) Pantego (8) Richland Hills (11) Southlake (12) Unincorporated (11) Watauga (2)

\* May encompass counties outside of Tarrant County

**Table 1. MLE<sup>(1)</sup> and VI<sup>(2)</sup> for County Quadrants, Week 44 and 45**

	County Quadrant	# gravid traps	Ave F <i>Culex</i> spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 44	Northeast	57	59.4	4.0	2.63 (0.86-6.34)	0.156
	Northwest	37	92.6	3.0	2.70 (0.72-7.34)	0.250
	Southeast	31	51.2	0.0	0.00 (0.00-4.02)	0.000
	Southwest	28	32.3	0.0	0.00 (0.00-5.45)	0.250
Week 45	Northeast	37	40.6	3.0	3.56 (0.95-9.61)	0.144
	Northwest	12	112.0	0.0	0.00 (0.00-6.32)	0.000
	Southeast	26	33.0	0.0	0.00 (0.00-6.35)	0.145
	Southwest	16	21.4	2.0	6.76 (1.29-22.26)	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 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 42-45

Week	Oct 15- Oct 21	Oct 22- Oct 28	Oct 29- Nov 4	Nov 5- Nov 11	YTD
MMWR Week	42	43	44	45	
Total number of gravid traps set in Tarrant Region	43	160	167	91	5380
Average number of <i>Culex quinquefasciatus</i> per gravid trap	103.4	52.8	59.1	39.4	48.5
Number of mosquito pools tested <sup>1</sup>	37	156	155	83	5017
Number of positive mosquito pools (NTRL; non-NTRL) <sup>1</sup>	0;0	10;0	8;0	5;0	276;2
Confirmed WNV human cases (WNF; WNND) <sup>2</sup>	0;1	0;0	0;0	0;0	6;12
WNV infection rate per 1,000 <i>Culex quinquefasciatus</i> <sup>3</sup>	0.00	2.15	1.69	2.29	
Weekly vector index <sup>4</sup>	0.000	0.117	0.102	0.091	
Total BG Sentinel traps set in Tarrant Region	10	27	30	15	1139
Average number of female <i>Aedes aegypti</i> per BG trap	2.8	5.7	1.6	1.5	4.8
Average number of female <i>Aedes albopictus</i> per BG trap	0.2	0.0	0.1	0.1	1.3

<sup>1</sup> Based on mosquito collection date NTRL = North Texas Regional Laboratory, non-NTRL includes Tarrant County only

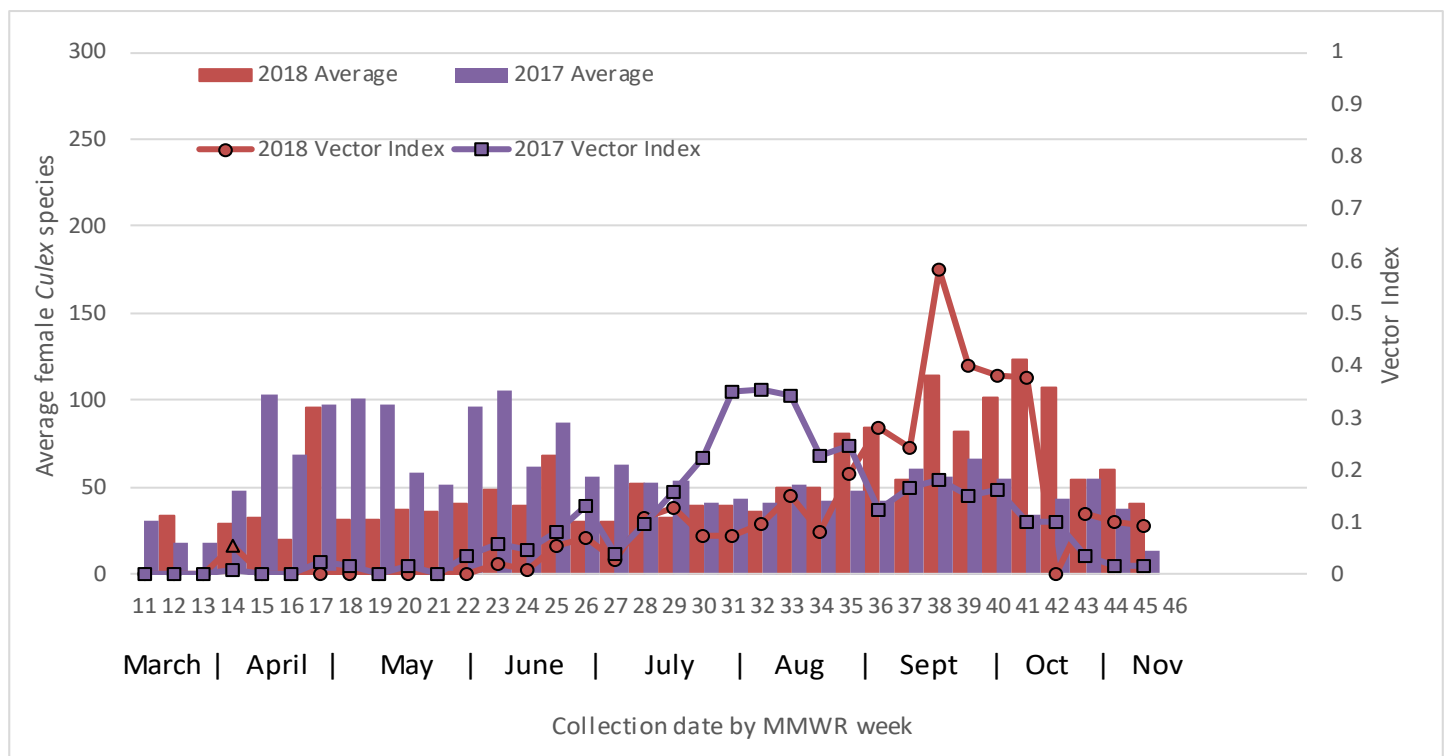
<sup>2</sup> Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease

<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

<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 may not include positive pools from Non-NTRL laboratories; Data subject to change due to on-going case investigations, mosquito collection, and testing

**Figure 1. Average Number of Female Culex Species Per Trap and Vector Index by**

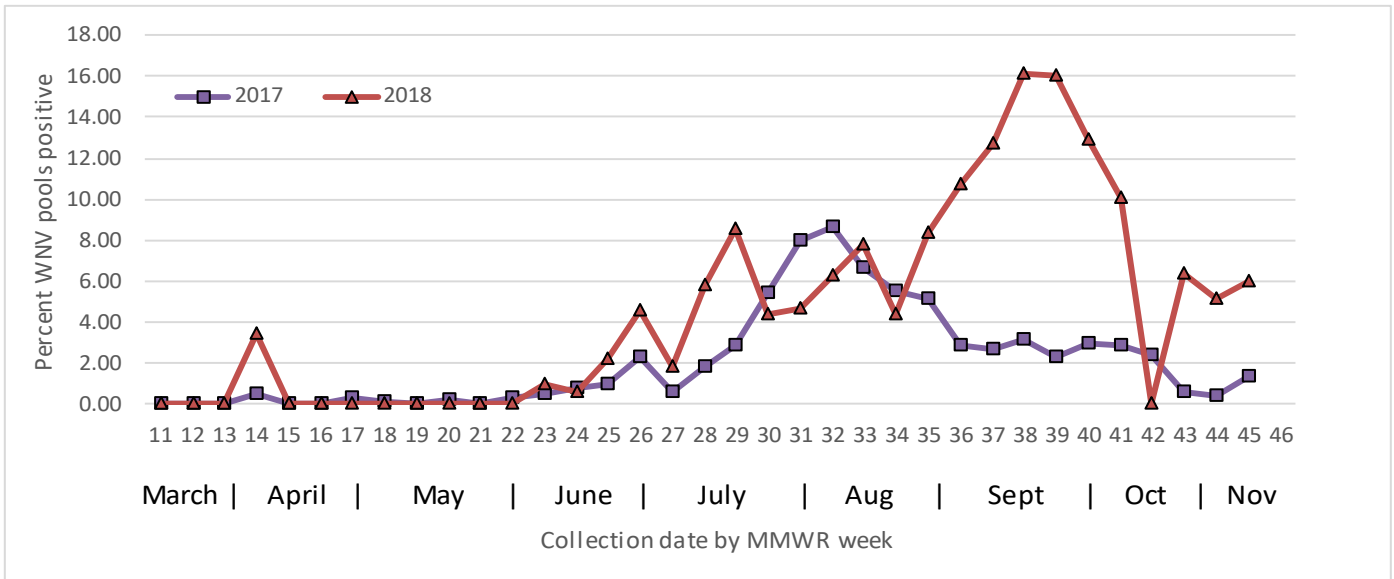


Data Source: Tarrant County Public Health



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**Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2017-2018**



Data Source: Tarrant County Public Health

**Table 3. North Texas Arbovirus Season Activity as Reported by Texas DSHS on November 13th, 2018**

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	23	2 WNF;	1 WNND	0	1	0	0	0	0	0	1	
Dallas	200	2 WNF;	11 WNND	0	2	0	1	0	0	0	0	
Denton	21	0 WNF;	1 WNND	0	0	0	0	0	0	0	0	
Johnson	5	0 WNF;	0 WNND	0	0	0	0	0	0	0	0	
Non-Tarrant North Texas	249	4	13	0	3	0	1	0	0	0	1	
<b>All Texas Counties</b>	<b>1009</b>	<b>28</b>	<b>81</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</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:**

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](#)

Environmental Protection Agency:

- [Insect Repellent Information](#)

Center for Disease Control and Prevention:

- [Zika Travel Information](#)