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Arbovirus Surveillance Report MMWR Week Aug 2-Aug 8, 2020

Week 32 Summary

- 176 mosquito pools* have been tested in DC/DSHS from week 32
 - Year-to-date DC/DSHS has tested a total of 2568 mosquito pools
- 64 mosquito pools tested positive for WNV this week:
 - Arlington (9) Bedford (1) Colleyville (5) Crowley (1) Euless (4) Fort Worth* (10) Grapevine (3) Grand Prairie* (1) Haltom City (1) Hurst (4) Keller (2) Mansfield (1) North Richland Hills (6) Pantego (3) Richland Hills (2) River Oaks (1) Southlake (3) Unincorporated (5) Westover Hills (1) White Settlement (1)
- There have been 0 human cases of SLE, Zika, CHIK or Dengue in 2020.
 - There have been 2 human cases of West Nile disease. 1 case resulted in death
- Average number of mosquitoes/trap include:
 - *Culex* spp: 34.5
 - *Aedes aegypti*: 4.8
 - *Aedes albopictus*: 3.2

DC/DSHS= Dallas County Laboratory Response Network and Department of State Health Services Arbovirus Lab
WNV= West Nile virus; CHIKV= chikungunya virus; DENV= dengue virus; SLEV St. Louis encephalitis virus * May encompass counties outside of Tarrant County

Tarrant County Region WNV Positive Year to Date Summary

There have been a total of 302 positive in 2020.

Arlington (49) Bedford (4) Benbrook (2) Burleson *(1) Colleyville (20) Crowley (2) Euless (13) Fort Worth**(70) Grand Prairie* (8) Grapevine (15) Haltom City (4) Haslet (1) Hurst (24) Keller (12) Mansfield (1) North Richland Hills (27) Pantego (10) Richland Hills (2) River Oaks (3) Southlake (8) Unincorporated (19) Watauga (1) Westover Hills (1) White Settlement (5)

May encompass counties outside of Tarrant County

Table 1. MLE⁽¹⁾ and VI⁽²⁾ for County Quadrants, Week 31 and 32

	County Quadrant	# gravid traps	Ave F <i>Culex</i> spp	Positive pools	MLE (Lower-Upper Limit)	VI
Week 31	Northeast	72	56.3	37.0	32.73 (23.51-45.58)	1.216
	Northwest	33	20.0	9.0	9.72 (4.86-17.91)	0.570
	Southeast	40	41.9	16.0	24.01 (14.15-39.69)	1.605
	Southwest	30	18.6	8.0	11.60 (5.44-22.48)	0.463
Week 32	Northeast	78	39.8	37.0	31.97 (22.90-44.38)	1.132
	Northwest	36	25.2	6.0	7.51 (3.11-15.76)	0.335
	Southeast	44	14.4	15.0	25.26 (14.87-41.57)	0.725
	Southwest	30	17.7	5.0	7.82 (2.97-17.40)	0.394

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 29-32

Week	Jul 12-Jul 18	Jul 19-Jul 25	Jul 26-Aug 1	Aug 2-Aug 8	YTD
MMWR Week	29	30	31	32	
Total number of gravid traps set in Tarrant Region	202	220	215	227	3175
Average number of <i>Culex</i> spp per gravid trap	41.8	36.8	38.9	34.1	43.7
Number of mosquito pools tested ¹ (DC/DSHS; non-DC/DSHS)	169;17	183;14	178;17	176;18	2568;407
Number of positive mosquito pools (DC/DSHS; non-DC/DSHS) ¹	35;0	50;1	71;1	63;1	291;8
Confirmed WNV human cases (WNF; WNND) ²	0;0	0;0	0;1	0;0	0;2
WNV infection rate per 1,000 <i>Culex</i> spp ³	8.82	12.78	20.63	19.87	
Weekly vector index ⁴	0.380	0.509	0.806	0.686	
Total BG Sentinel traps set in Tarrant Region	31	34	32	22	440
Average number of female <i>Aedes aegypti</i> per BG trap	6.4	6.4	7.0	4.8	1.8
Average number of female <i>Aedes albopictus</i> per BG trap	5.3	2.6	1.9	3.2	1.8

¹ Based on mosquito collection date; DC/DSHS = Dallas County Laboratory Response Network and Department of State Health Services Arboviral Lab

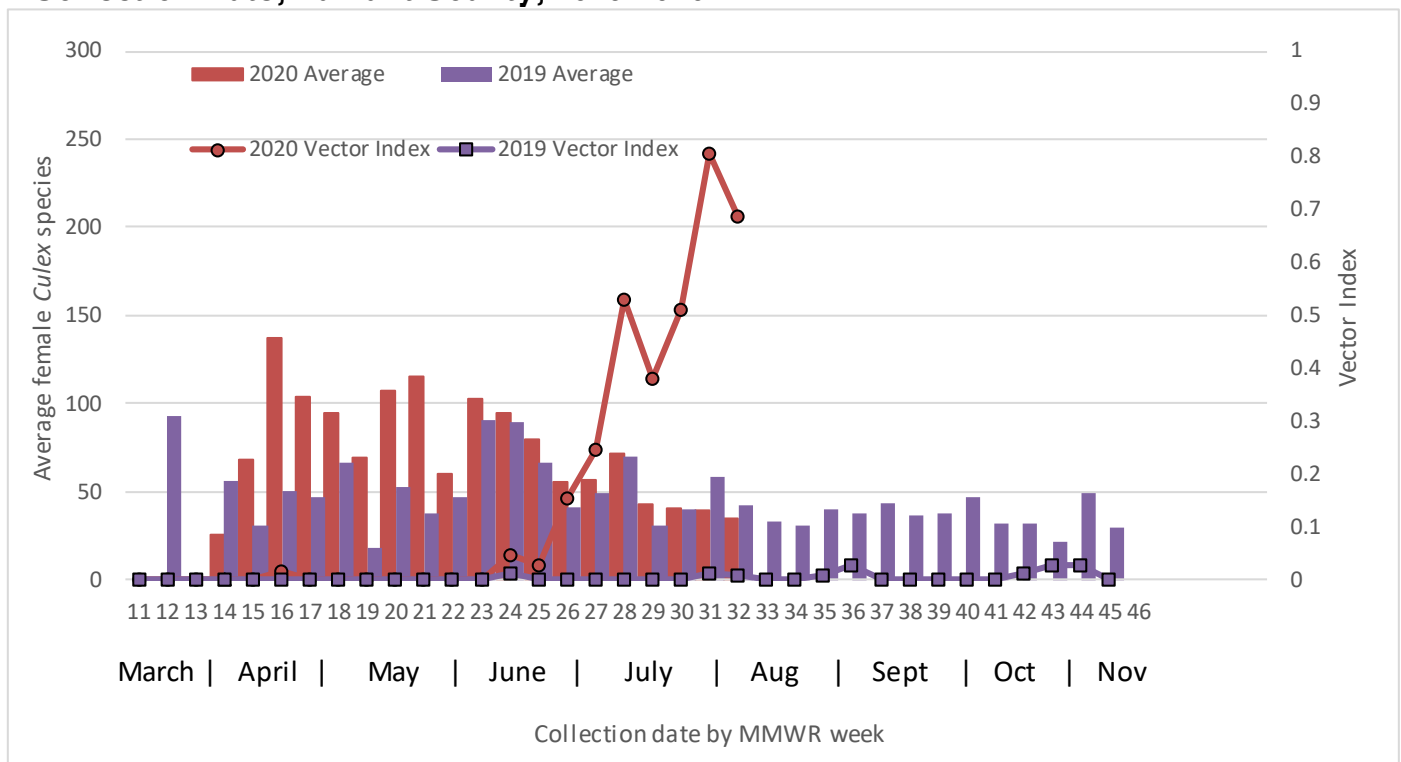
² Based on onset of illness date for cases reported to Tarrant County Public Health; WNF=West Nile Fever; WNND = West Nile Neuroinvasive Disease

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*

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

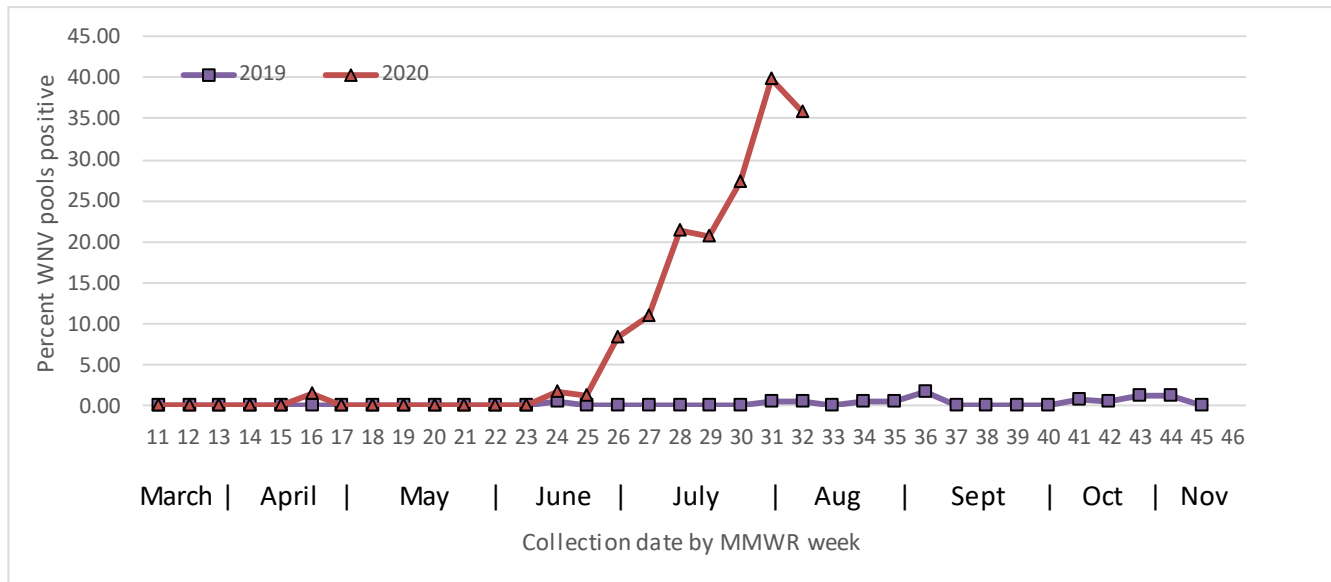
Figure 1. Average Number of Female *Culex* Species Per Trap and Vector Index by Collection Date, Tarrant County, 2019-2020





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Figure 2. Percentage of Mosquito Pools Positive for WNV by Collection Date, Tarrant County, 2019-2020



Data Source: Tarrant County Public Health

Table 3. North Texas Arbovirus Activity as Reported by Texas DSHS on August 11, 2020

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	9	0 WNF;	0 WNND	0	0	0	1	0	0	0	0
Dallas	167	0 WNF;	0 WNND	0	0	0	0	0	0	0	0
Denton	25	0 WNF;	0 WNND	0	0	0	0	0	0	0	0
Johnson	1	0 WNF;	0 WNND	0	0	0	0	0	0	0	0
Non-Tarrant North Texas	202	0	0	0	0	0	1	0	0	0	0
All Texas Counties	549	3	0	0	2	0	7	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 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: