Dallas County Health and Human Services
Arbovirus Surveillance Report

Week 28 ending July 13, 2019

- In week 27, eight mosquito traps tested positive for WNV. In week 28 to date, four mosquito traps tested positive for WNV in zip codes: 75038, 75149, 75181, and 75217.
- No human WNV cases have been reported to date for 2019.
- In 2019, 3 travel-associated Dengue cases have been identified in Dallas County.
- *Aedes albopictus* and *Aedes aegypti* are currently circulating in the area.

Table 1. Mosquito Laboratory and Human Case Surveillance Data for WNV, Dallas County

Week Ending	06/01	06/08	06/15	06/22	06/29	07/06	07/13	YTD
MMWR Week	22	23	24	25	26	27*	28*	
Total Traps Placed in Dallas County [a]	229	249	253	256	255	177	237	3,402
Number of Positive Mosquito Traps (PHL; IL) [c]	1; 0	1; 0	2; 0	4; 0	5; 1	7; 1	4; 0	27†; 2
Number of Pools Tested (PHL; IL) [b,c]	181; 12	225; 17	237; 17	258; 20	241; 17	157; 29	236; 20	2,377; 209
Number of Trap Results Currently Pending	0	0	0	0	0	0	2	
Average Number of *Cx. quinquefasciatus* per Trap [d]	37.9	55.0	55.1	77.1	52.5	48.7	74.6	19.8
Total Number of *Cx. quinquefasciatus* Trapped and Tested	5,282	7,356	7,662	9,220	8,064	4,745	8,962	63,293
Number of Positive Mosquito Pools (PHL; IL) [c]	1; 0	1; 0	2; 0	4; 0	5; 1	7; 1	4; 0	27†; 2
WNV Infection Rate per 1,000 *Cx. quinquefasciatus* [e]	0.19	0.14	0.26	0.44	0.75	1.74	0.45	
Weekly Vector Index (VI) [f]	0.01	0.01	0.01	0.03	0.04	0.08	0.03	
Presumptive WNV Viremic Blood Donors	0	0	0	0	0	0	0	0
WNV Human Cases (WNND; WNF) [g]	0; 0	0; 0	0; 0	0; 0	0; 0	0; 0	0; 0	0; 0

Table 2. Mosquito Laboratory and Human Case Surveillance Data for Chikungunya, Dengue and Zika Virus, Dallas County

Week Ending	06/01	06/08	06/15	06/22	06/29	07/06	07/13	YTD
MMWR Week	22	23	24	25	26	27*	28*	
Total Biogents Sentinel-Traps Placed in Dallas County [h]	20	28	22	27	28	29	19	280
Average Number of *Aedes per* Trap [i]	25.7	13.7	20.5	22.8	20.7	33.1	11.4	17.0
Chikungunya Human Cases (Confirmed & Probable) [j]	0	0	0	0	0	0	0	0
Dengue Human Cases (Confirmed & Probable) [k]	0	0	0	0	0	0	0	3
Zika Human Cases (Confirmed & Probable) [l]	0	0	0	0	0	0	0	0
Pregnant Women with Possible Zika Infection [m]	0	0	0	0	0	0	0	0

†One mosquito trap with a pool containing only *Culex restuans* was positive for WNV in week 18, and is not included in VI calculations.

***Data for most recent 2 weeks are preliminary, and reflect results reported as of 12:30 p.m. July 15, 2019.**

a. **All traps deployed in municipalities submitting data to DCHHS since January 1, 2019. Includes traps without mosquitoes, malfunctioning traps and traps with pending results**
b. **Excludes traps without female *Culex quinquefasciatus* identified. Maximum of 50 female *Culex quinquefasciatus* per pool; more than 1 pool may be tested per trap**
c. **PHL = Public health laboratory (DSHS, DCHHS) testing performed by viral culture or CDC RT-PCR protocol; IL = Testing from independent labs by alternate methods**
d. **Average abundance of female *Culex quinquefasciatus* mosquitoes per trap night/week (excludes non-working traps)**
e. **WNV Infection rates calculated using a Maximum Likelihood Estimation (MLE). *Biggerstaff BJ. PooledInfRate, version 4.0; Microsoft Excel Add-In; CDC 2007***
f. **The Vector Index (VI) reflects the MLE adjusted for *Culex quinquefasciatus* abundance. VI= $\sum_{i=species} \bar{N}i\hat{P}i$, where *N* is the average number of *Culex quinquefasciatus* mosquitoes collected per trap night and $\hat{P}$ is the estimated infection rate**
g. **Human cases by week of report to health department. WNND = West Nile Neuroinvasive Disease; WNF = West Nile Fever**
h. **All Biogents (BG) Sentinel traps deployed in municipalities submitting data to DCHHS since Week 13.**
i. **Average abundance of *Aedes albopictus* and A*edes aegypti* mosquitoes per night/trap in BG-Traps (excludes non-working traps)**
j. **Human CHKV cases by week of report to health department (AT : Autochthonous case; I : imported)**
k. **Human Dengue cases by week of report to the health department**
l. **Confirmed and probable human Zika cases by week of specimen collection date**
m. **Possible Zika Virus Infection Among Pregnant Women — United States and Territories, May 2016, http://www.cdc.gov/mmwr/volumes/65/wr/mm6520e1.htm/**

Table 3. WNV Positive Gravid Mosquito Traps and Human WNV Cases by City, Dallas County, 2019

Week Ending			06/01	06/08	06/15	06/22	06/29	07/06	07/13	YTD
MMWR Week			22	23	24	25	26	27*	28*	
	# Human Cases	Range Total # of Traps/Week[1]	# WNV+ Traps	# WNV+ Traps	# WNV+ Traps	# WNV+ Traps	# WNV+ Traps	# WNV+ Traps	# WNV+ Traps	
Addison	0	2	0	0	0	1	0	0	0	2
Balch Springs	0	1 – 3	0	0	0	0	0	0	0	0
Carrollton	0	7	0	0	0	0	0	0	0	1
Cedar Hill	0	5	0	0	0	0	0	0	0	0
Cockrell Hill	0	1	0	0	0	0	0	0	0	0
Coppell	0	5 – 6	0	0	0	0	1	0	0	1
Dallas	0	13 – 70	0	0	0	0	0	1	1	2
DeSoto	0	2 – 6	0	0	0	0	0	0	0	0
Duncanville	0	1 – 5	0	0	0	0	0	0	0	0
Farmers Branch	0	5	0	0	0	0	0	0	0	0
Garland	0	3 – 27	0	0	0	0	2	1	0	3
Glenn Heights	0	2	0	1	0	0	0	0	0	1
Grand Prairie	0	6 – 29	0	0	0	0	1	1	0	2
Highland Park	0	2 – 6	0	0	0	1	0	0	0	1
Hutchins	0	1 – 2	0	0	0	0	0	0	0	0
Irving	0	7 – 19	0	0	0	0	0	1	1	2
Lancaster	0	4	0	0	0	0	0	0	0	0
Mesquite	0	1 – 24	0	0	1	1	1	1	2	6
Richardson	0	12	0	0	0	1	0	1	0	2
Rowlett	0	1 – 6	0	0	0	0	0	0	0	0
Sachse	0	1 – 3	0	0	0	0	0	0	0	0
Seagoville	0	2	1	0	0	0	0	1	0	2
Sunnyvale	0	2	0	0	0	0	0	0	0	0
Unincorporated County	0	1 – 5	0	0	1	0	0	1	0	2
University Park	0	3 – 4	0	0	0	0	1	0	0	1
Wilmer	0	1	0	0	0	0	0	0	0	0
Total	0		1	1	2	4	6	8	4	29[†]

†One mosquito trap with a pool containing only *Culex restuans* was positive for WNV in week 18, and is not included in VI calculations.

*Data for most recent 2 weeks are preliminary, and reflect results reported as of 12:30 p.m. July 15, 2019. [1]Range of numbers of traps placed weekly, in weeks 1 - 28.

Figure 1: All WNV Negative and Positive Mosquito Traps Collected During 2019: Weeks 1-28 (N=3,402)

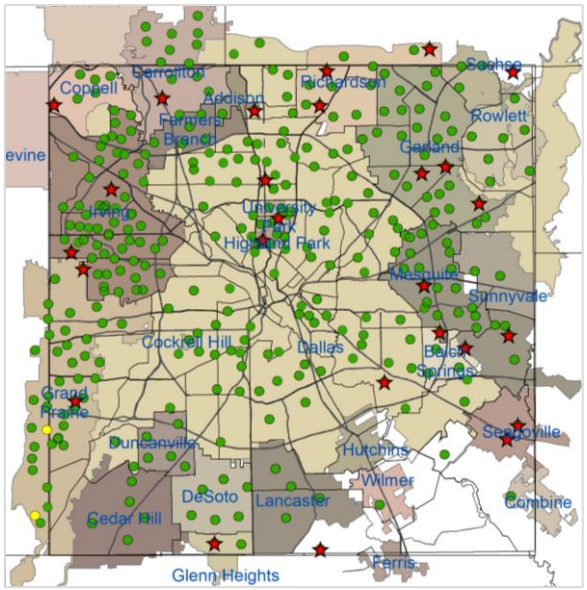
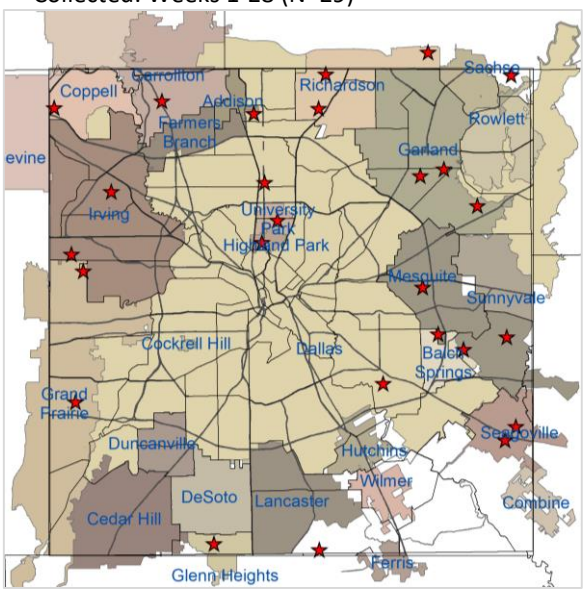


Figure 2: Cumulative WNV Positive Mosquito Traps Collected: Weeks 1-28 (N=29)

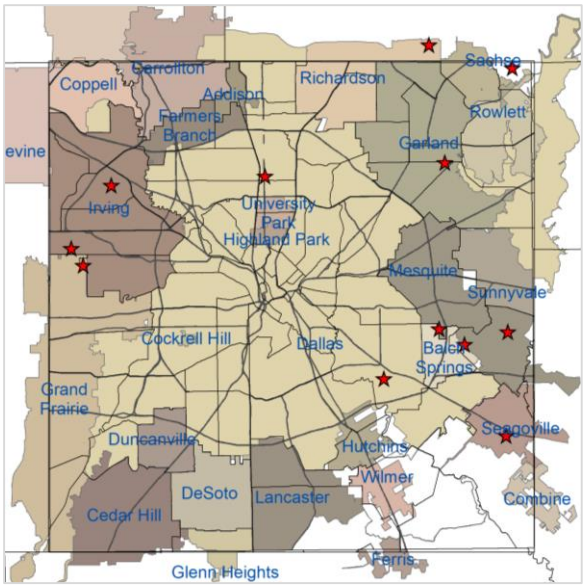


Positive Traps Negative Traps Pending Traps

*Data for most recent 2 weeks are preliminary.

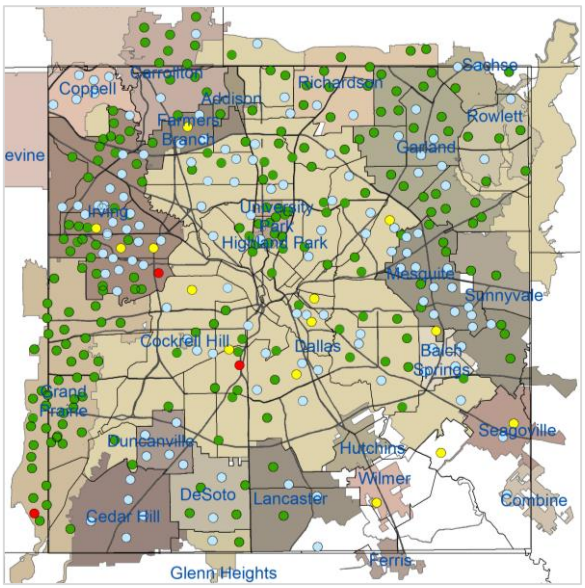
†One mosquito trap with a pool containing only *Culex restuans* was positive for WNV in week 18.

Figure 3: WNV Positive Mosquito Traps Collected During 2019: Weeks 27 and 28* (N=12)



Positive Traps

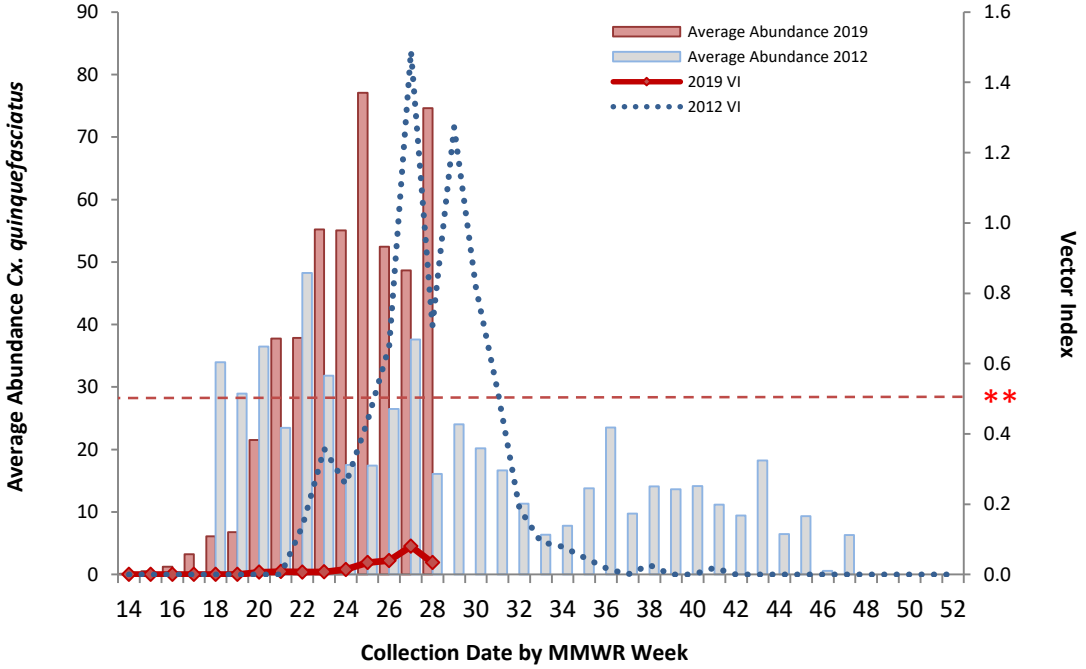
Figure 4: Trap Counts of Female *Cx. quinquefasciatus* from 2019 Season: Weeks 1-28*



< 100 Mosquitoes/Trap
100 - 499 Mosquitoes/Trap
500 - 1000 Mosquitoes/Trap
>1000 Mosquitoes/Trap

*Figure 4 only shows traps for which results were available; malfunctioning traps were excluded. Almost all traps are at fixed sites.
Note: *Most recent 1-2 weeks data are preliminary and subject to change following receipt of data still pending.*

Figure 5: Average Numbers of Female *Cx. quinquefasciatus* per Trap-night and WNV Vector Index by Week: 2012 Season and 2019 Season (through Week 28*)



** Vector Index of 0.50 is the historical threshold associated with larger local epidemics of WNV illnesses in humans.
Note: *Most recent 1-2 weeks data are preliminary and subject to change following receipt of data still pending.*

Figure 6: WNV Vector Index by Week: 2012 - 2019 Seasons

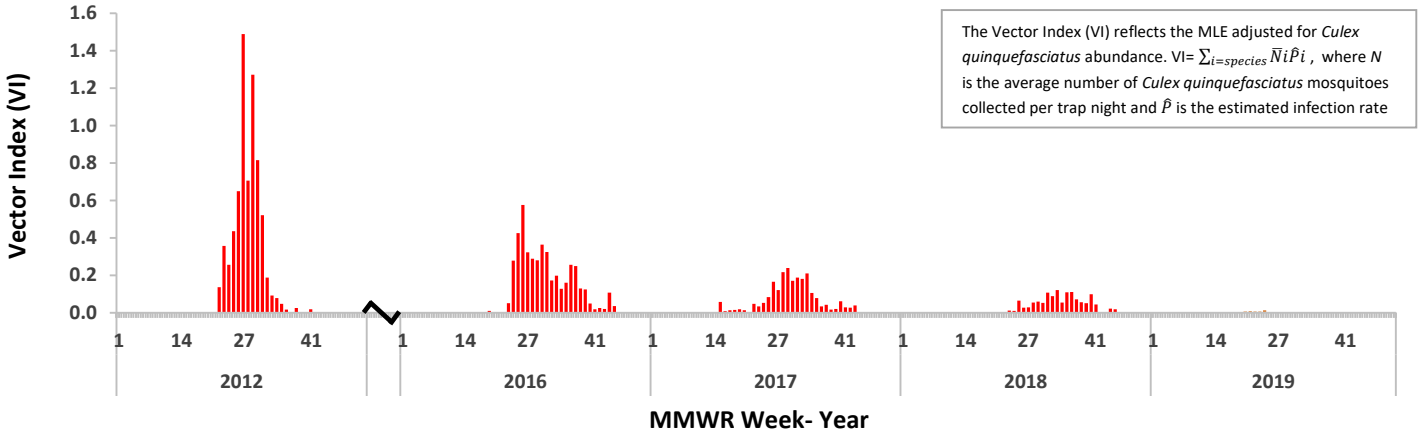


Figure 7: Average Numbers of Female *Cx. quinquefasciatus* per Trap-night by Week: 2012 - 2019 Seasons

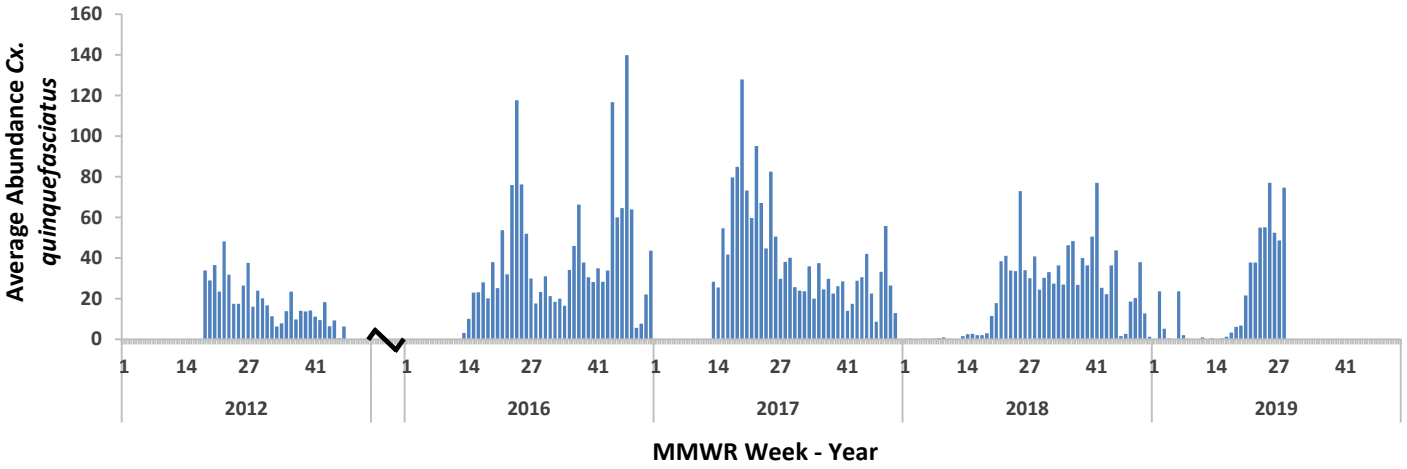


Figure 8: MLE (WNV Infection Rate per 1,000 *Cx. quinquefasciatus*) by Week: 2012 - 2019 Seasons

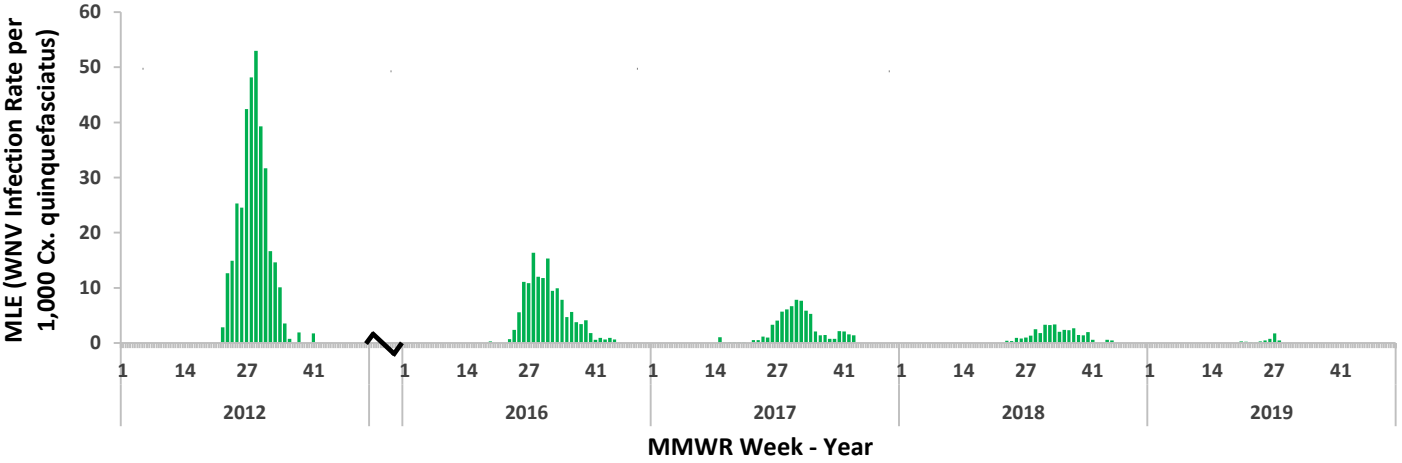


Figure 9: BG-Sentinel Trap Counts of Female *Aedes aegypti* and *Aedes albopictus* during 2019: Weeks 14 through 28[†]

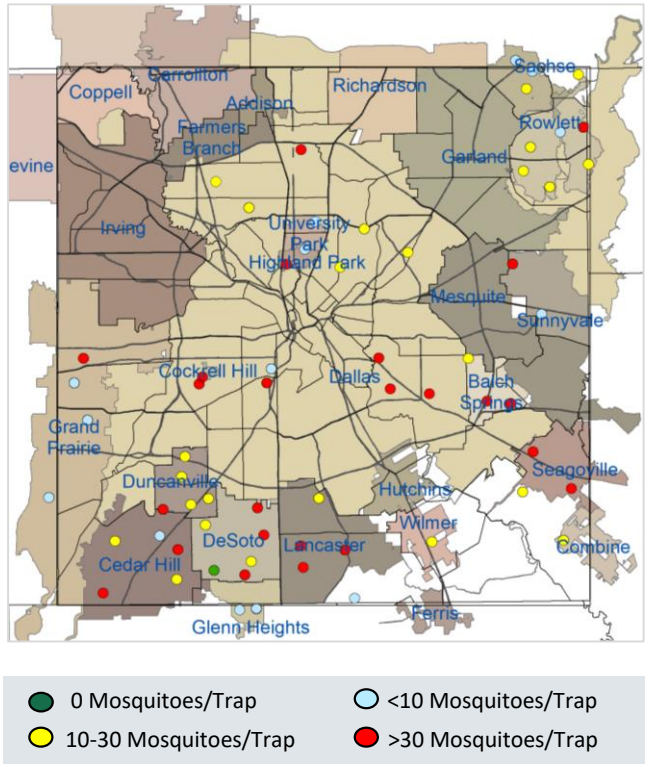


Figure 10: Average Numbers of *Aedes aegypti* per Trap-night: 2018 and 2019 Seasons*,[†]

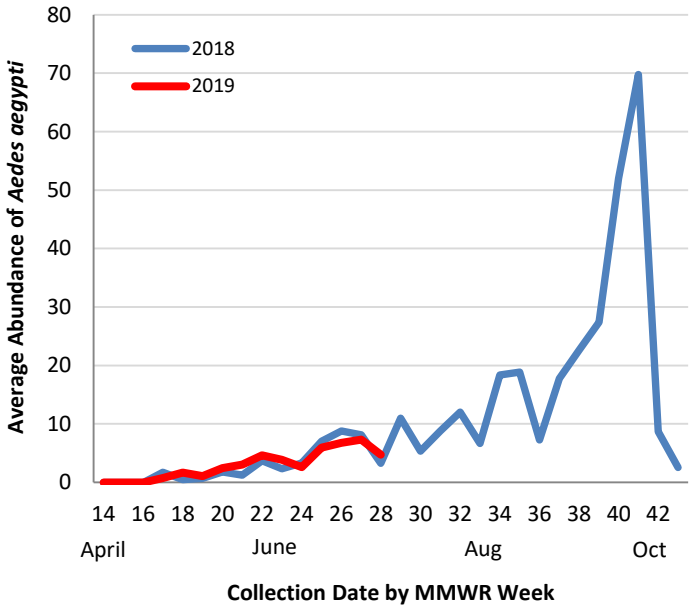
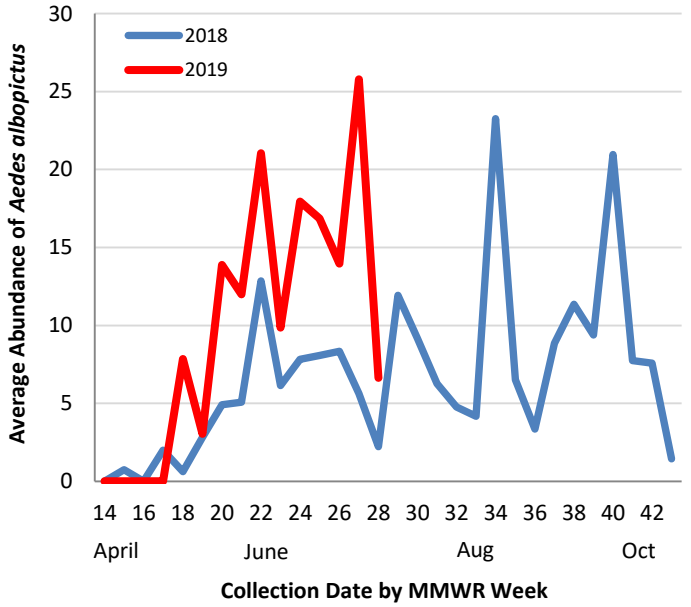


Figure 11: Average Numbers of *Aedes albopictus* per Trap-night: 2018 and 2019 Seasons*,[†]



*Data for most recent 2 weeks are preliminary

[†]Routine *Aedes* BG-Sentinel trapping was conducted during week 14 - 43 in 2018

Acknowledgements:

We are grateful for the partnership of the following contributors to our county-wide Arboviral Surveillance Report:

Mosquito Trapping and Data from Environmental Health Services Divisions of the Following Cities:

Addison
Balch Springs
Carrollton
Cedar Hill
Cockrell Hill
Coppell
Dallas
DeSoto
Duncanville
Farmers Branch
Garland
Glenn Heights
Grand Prairie
Highland Park
Hutchins
Irving
Lancaster
Mesquite
Richardson
Rowlett
Sachse
Seagoville
Sunnyvale
University Park
Wilmer

Mosquito Trapping and Data From:

DCHHS Environmental Health Services: Vector Control Division
Municipal Mosquito
Vector Disease Control International

Mosquito Speciation and Laboratory Testing:

DCHHS Environmental Health Services: Mosquito Lab
DCHHS LRN Laboratory
DSHS Laboratory Services, Arbovirus-Entomology Team
Municipal Mosquito

Human Case Reports and Investigations:

Area Acute Care Hospitals and Healthcare Providers
Dallas County Medical Examiner's Office
City of Dallas Vital Statistics Unit
Carter Blood Care
American Red Cross
DCHHS Acute Communicable Disease Epidemiology Division
Zika Pregnancy Registry Team
Arboviral Case Investigation and Clinical Inquiries Team

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