

# Dallas County Health and Human Services Arbovirus Surveillance Report



Week 34 ending August 27, 2022

- In week 34, no mosquito traps tested positive for WNV. To date for 2022, a total of fourteen mosquito traps have tested positive for WNV.
- One human WNV case has been reported to date for 2022, including 1 death.
- Six travel related Dengue cases have been reported.
- No Zika cases have been reported year to date in 2022 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   | 7/16   | 7/23  | 7/30  | 8/6    | 8/13   | 8/20   | 8/27* | YTD      |
|---|--------|-------|-------|--------|--------|--------|-------|----------|
| MMWR Week   | 28     | 29    | 30    | 31     | 32     | 33     | 34*   |          |
| Total Traps Placed in Dallas County <sup>a</sup>                      | 250    | 236   | 199   | 251    | 258    | 33     | 34    | 4,391    |
| Number of Positive Mosquito Traps (PHL; IL) <sup>c</sup>              | 0;1    | 1;0   | 1;1   | 0;0    | 3;0    | 225    | 161   | 9;5      |
| Number of Pools Tested (PHL; IL) <sup>b,c</sup>                       | 203;12 | 183;8 | 165;8 | 216;10 | 197;10 | 0;0    | 0;0   | 3317;180 |
| Number of Trap Results Currently Pending                              | 0      | 0     | 0     | 0      | 0      | 186;13 | 154;0 |          |
| Average Number of <i>Cx. quinquefasciatus</i> per Trap <sup>d</sup>   | 23.2   | 11.8  | 15.4  | 19.1   | 17.9   | 0.0    | 0.0   | 21.9     |
| Total Number of <i>Cx. quinquefasciatus</i> Trapped and Tested        | 4,595  | 2,544 | 2,717 | 3,888  | 3,664  | 19     | 28    | 70,480   |
| Number of Positive Mosquito Pools (PHL; IL) <sup>c</sup>              | 0;1    | 1;0   | 1;1   | 0;0    | 3;0    | 0;0    | 0;0   | 9;5      |
| WNV Infection Rate per 1,000 <i>Cx. quinquefasciatus</i> <sup>e</sup> | 0.29   | 0.49  | 0.76  | 0.00   | 0.83   | 0.00   | 0.00  |          |
| Weekly Vector Index (VI) <sup>f</sup>                                 | 0.01   | 0.01  | 0.01  | 0.00   | 0.01   | 0.00   | 0.00  |          |
| Presumptive WNV Viremic Blood Donors                                  | 0      | 0     | 0     | 0      | 0      | 0      | 0     | 0        |
| WNV Human Cases (WNND; WNF) <sup>g</sup>                              | 0;0    | 0;0   | 0;0   | 0;0    | 0;0    | 0;0    | 0;0   | 1;0      |

**Table 2.** Mosquito Laboratory and Human Case Surveillance Data for chikungunya, dengue and Zika virus, Dallas County

| Week Ending  | 7/16 | 7/23 | 7/30 | 8/6 | 8/13 | 8/20 | 8/27* | YTD |
|--|------|------|------|-----|------|------|-------|-----|
| MMWR Week  | 28   | 29   | 30   | 31  | 32   | 33   | 34*   |     |
| Total Biogents Sentinel-Traps Placed in Dallas County <sup>h</sup> | 4    | 4    | 4    | 4   | 4    | 4    | 0     | 80  |
| Average Number of <i>Aedes</i> per Trap <sup>i</sup>               | 0.3  | 0.0  | 0.0  | 0.0 | 0.0  | 0.3  | 0.0   | 0.4 |
| Chikungunya Human Cases (Confirmed & Probable) <sup>j</sup>        | 0    | 0    | 0    | 0   | 0    | 0    | 0     | 0   |
| Dengue Human Cases (Confirmed & Probable) <sup>k</sup>             | 0    | 0    | 0    | 0   | 1    | 0    | 2     | 6   |
| Zika Human Cases (Confirmed & Probable) <sup>l</sup>               | 0    | 0    | 0    | 0   | 0    | 0    | 0     | 0   |
| Pregnant Women with Possible Zika Infection <sup>m</sup>           | 0    | 0    | 0    | 0   | 0    | 0    | 0     | 0   |

\*Data for most recent 2 weeks are preliminary, and reflect results reported as of 4:30 p.m. August 26, 2022

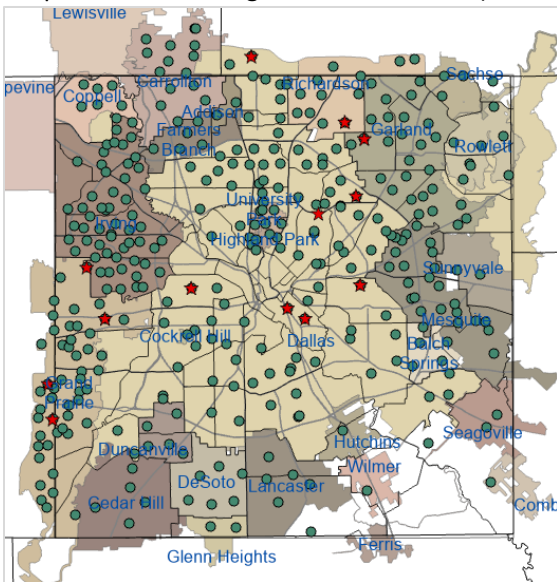
- All traps deployed in municipalities submitting data to DCHHS since January 1, 2022. Includes traps without mosquitoes, malfunctioning traps and traps with pending results
- Excludes traps without female *Culex quinquefasciatus* identified. Maximum of 50 female *Culex quinquefasciatus* per pool; more than 1 pool may be tested per trap
- PHL = Public health laboratory (DSHS, DCHHS) testing performed by viral culture or CDC RT-PCR protocol; IL = Testing from independent labs by alternate methods
- Average abundance of female *Culex quinquefasciatus* mosquitoes per trap night/week (excludes non-working traps)
- WNV infection rates calculated using a Maximum Likelihood Estimation (MLE). *Biggerstaff BJ. PooledInfRate, version 4.0; Microsoft Excel Add-In; CDC 2007*
- The Vector Index (VI) reflects the MLE adjusted for *Culex quinquefasciatus* abundance.  $VI = \sum_{i=species} \bar{N}i\hat{P}i$ , where  $\bar{N}$  is the average number of *Culex quinquefasciatus* mosquitoes collected per trap night and  $\hat{P}$  is the estimated infection rate
- Human cases by week of report to health department. WNND = West Nile Neuroinvasive Disease; WNF = West Nile Fever
- All Biogents (BG) Sentinel traps deployed in municipalities submitting data to DCHHS since Week 15.
- Average abundance of *Aedes albopictus* and *Aedes aegypti* mosquitoes per night/trap in BG-Traps (excludes non-working traps)
- Human CHIKV cases by week of report to health department (AT = Autochthonous case; I = imported)
- Human Dengue cases by week of report to the health department
- Confirmed and probable human Zika cases by week of specimen collection date
- Possible Zika Virus Infection Among Pregnant Women — United States and Territories, May 2016, <http://www.cdc.gov/mmwr/volumes/65/wr/mm6520e1.html>

**Table 3.** WNV Positive Gravid Mosquito Traps and Human WNV Cases by City, Dallas County, 2022

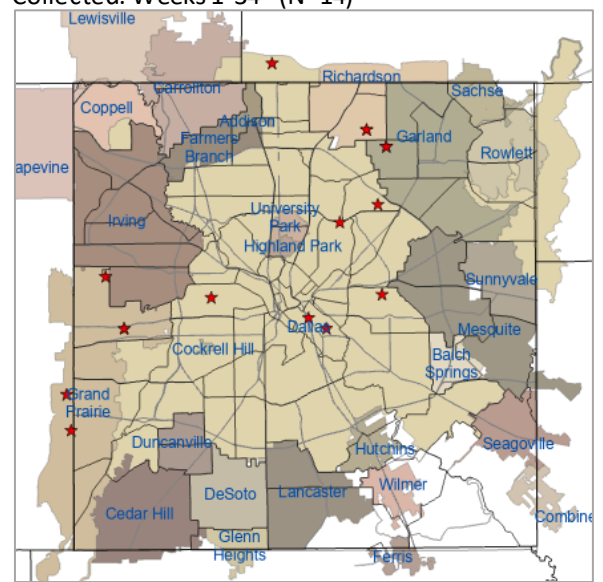
| Week Ending           |              | 7/16         | 7/23         | 7/30         | 8/6          | 8/13         | 8/20         | 8/27*        | YTD       |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------|
| MMWR Week             |              | 28           | 29           | 30           | 31           | 32           | 33           | 34*          |           |
|                       | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps | # WNV+ Traps |           |
| Addison               | 0            | 3            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Balch Springs         | 0            | 3-6          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Carrollton            | 0            | 7            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Cedar Hill            | 0            | 5-10         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Cockrell Hill         | 0            | 1-2          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Coppell               | 0            | 6            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Dallas                | 1            | 1-65         | 0            | 1            | 1            | 0            | 1            | 0            | 7         |
| DeSoto                | 0            | 6-12         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Duncanville           | 0            | 5-10         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Farmers Branch        | 0            | 5            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Garland               | 0            | 2-27         | 0            | 0            | 0            | 0            | 1            | 0            | 1         |
| Glenn Heights         | 0            | 2-4          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Grand Prairie         | 0            | 24-25        | 1            | 0            | 1            | 0            | 0            | 0            | 5         |
| Highland Park         | 0            | 2-4          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Hutchins              | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Irving                | 0            | 19-38        | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Lancaster             | 0            | 1-10         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Mesquite              | 0            | 8-36         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Richardson            | 0            | 12-24        | 0            | 0            | 0            | 0            | 1            | 0            | 1         |
| Rowlett               | 0            | 1-14         | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Sachse                | 0            | 3-6          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Seagoville            | 0            | 2            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Sunnyvale             | 0            | 2-4          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Unincorporated County | 0            | 1-5          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| University Park       | 0            | 4-8          | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| Wilmer                | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0         |
| <b>Total</b>          | <b>1</b>     | <b>1</b>     | <b>1</b>     | <b>1</b>     | <b>2</b>     | <b>0</b>     | <b>3</b>     | <b>0</b>     | <b>14</b> |

\*Data for most recent 2 weeks are preliminary, and reflect results reported as of 4:30 p.m. August 26, 2022. \*Range of numbers of traps placed weekly, in weeks 1 – 34.

**Figure 1:** All WNV Negative and Positive Mosquito Traps Collected During 2022: Weeks 1-34\* (=4,391)



**Figure 2:** Cumulative WNV Positive Mosquito Traps Collected: Weeks 1-34\* (N=14)



Positive Traps

Negative Traps

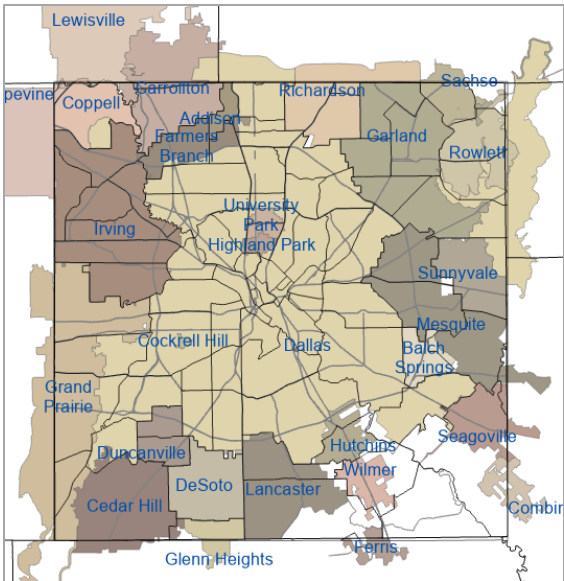
Pending Traps

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\*Data for most recent 2 weeks are preliminary.

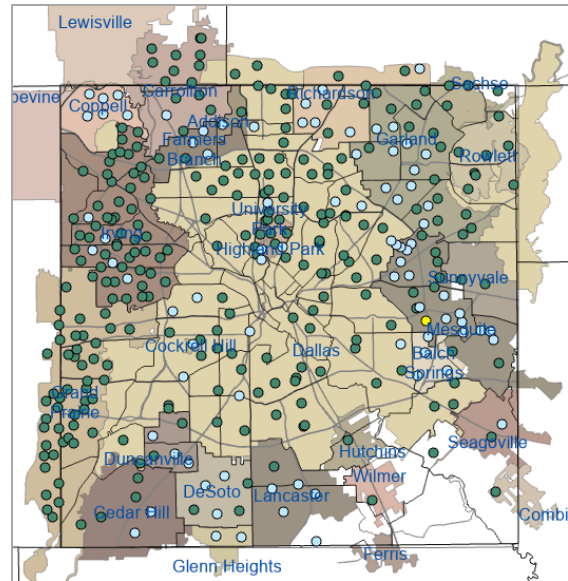
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**Figure 3: WNV Positive Mosquito Traps Collected During 2022: Weeks 33 and 34\* (N=0)**



★ Positive Traps

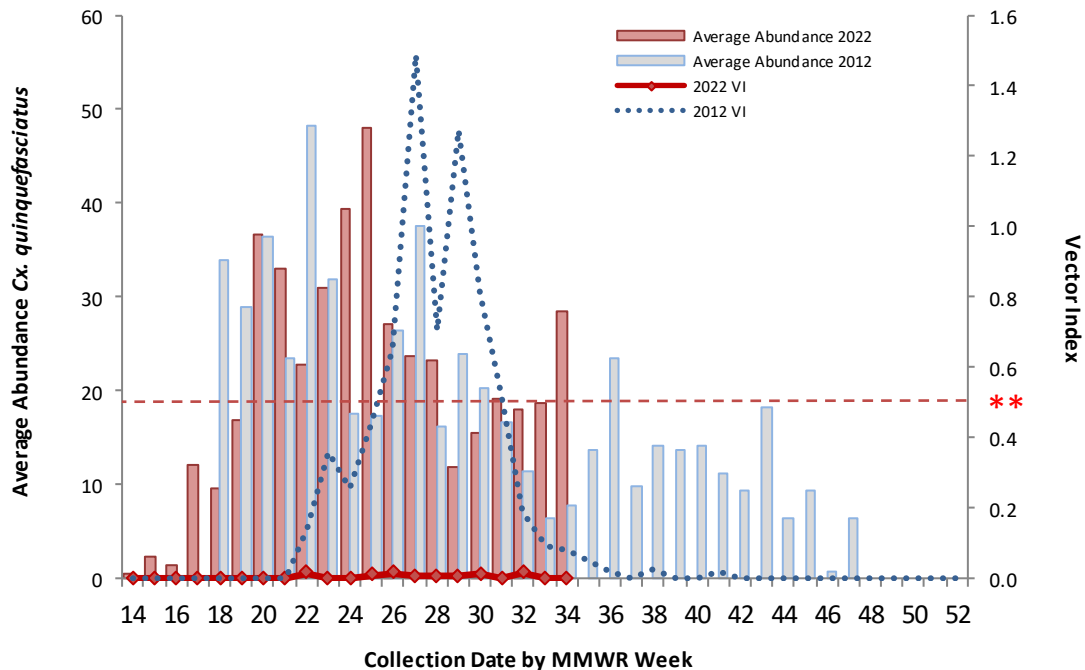
**Figure 4: Trap Counts of Female *Cx. quinquefasciatus* from 2022 Season: Weeks 1-34\***



● < 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 2022 Season (through Week 34\*)**



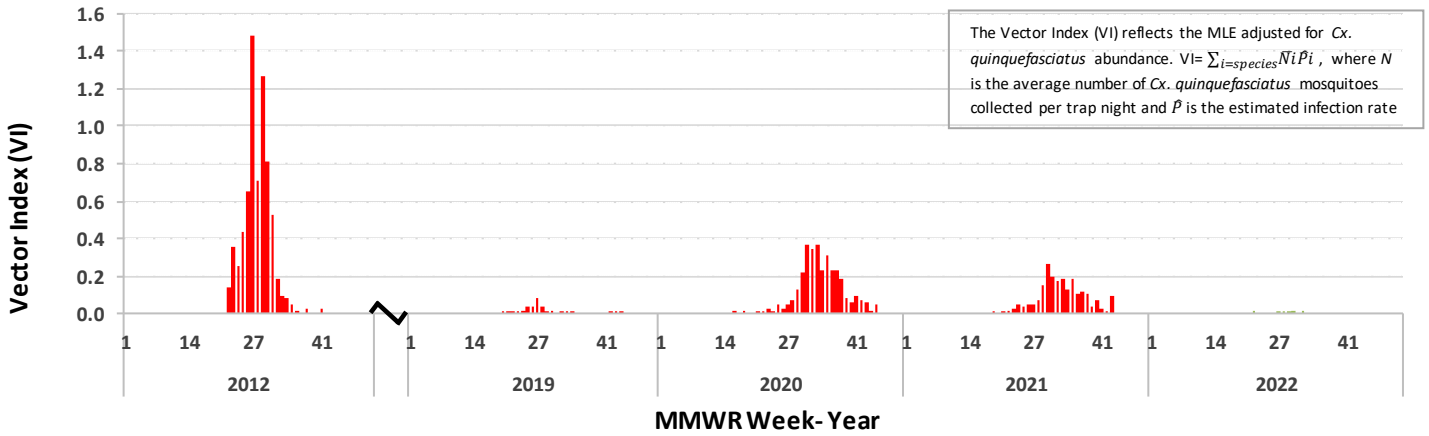
\*\* Vector Index of 0.50 is the historical threshold associated with larger local epidemics of WNV illnesses in humans.  
*Note: Most recent 1-2 weeks data are preliminary and subject to change following receipt of data still pending.*

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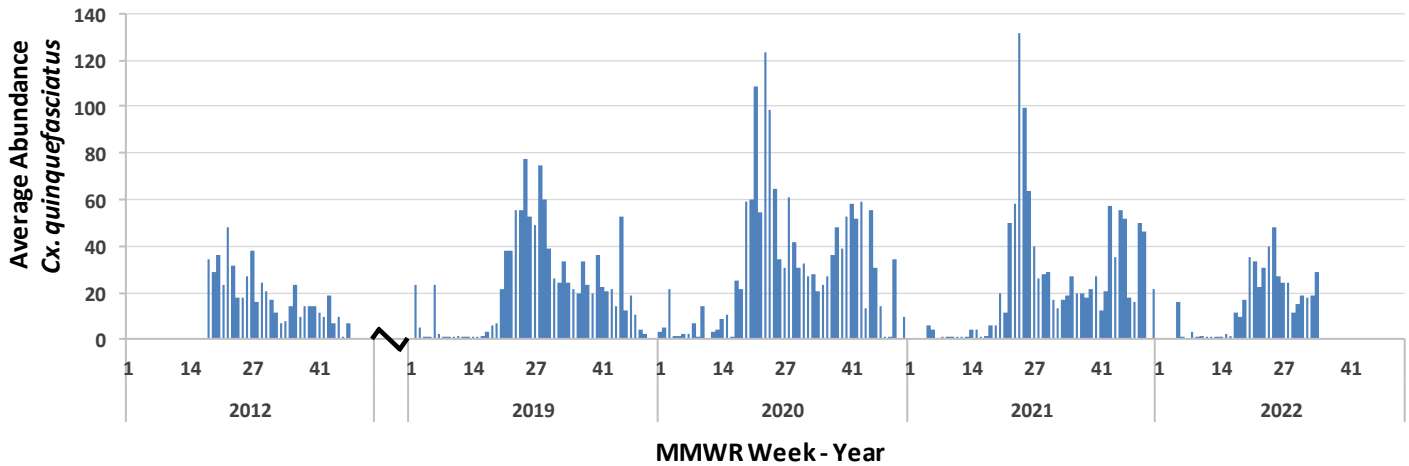
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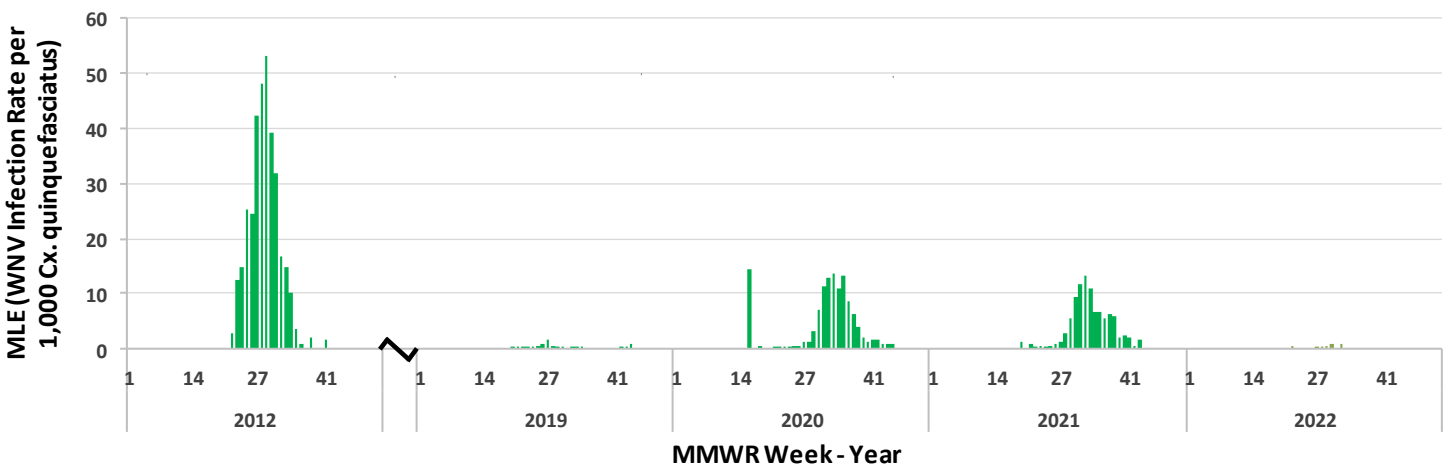
**Figure 6: WNV Vector Index by Week: 2012 - 2022 Seasons**



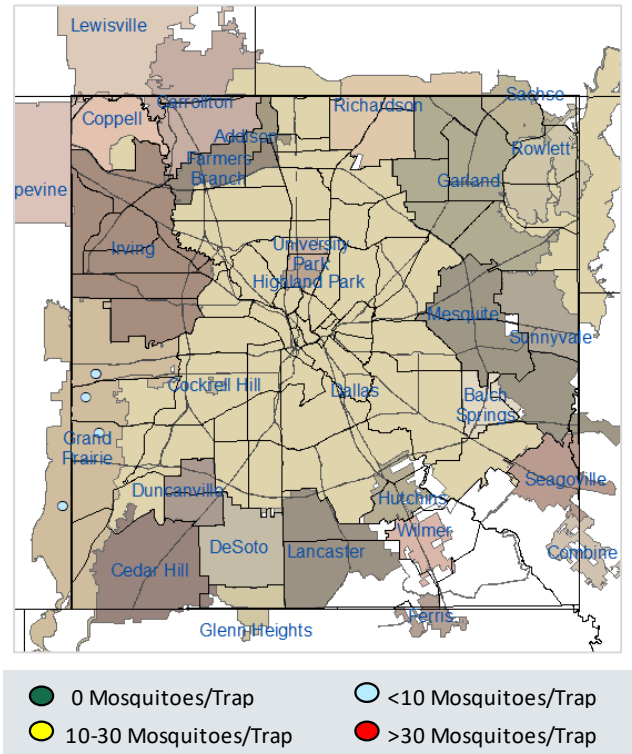
**Figure 7: Average Numbers of Female *Cx. quinquefasciatus* per Trap-night by Week: 2012 - 2021 Seasons**



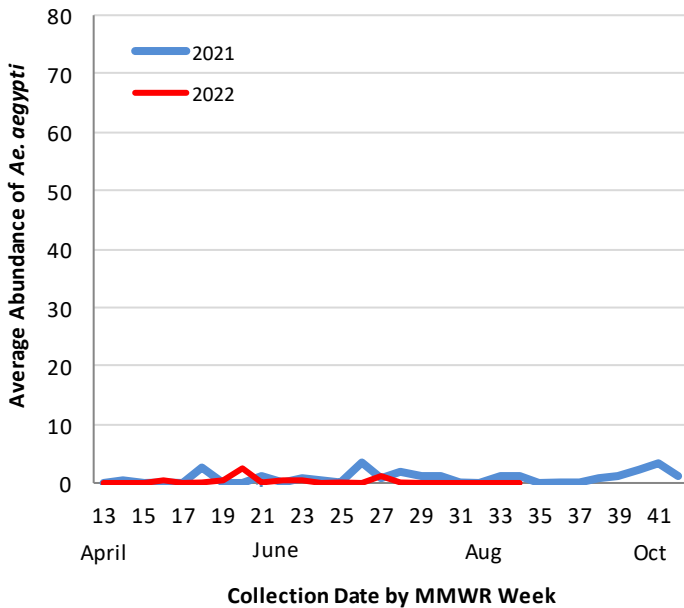
**Figure 8: MLE (WNV Infection Rate per 1,000 *Cx. quinquefasciatus*) by Week: 2012 - 2021 Seasons**



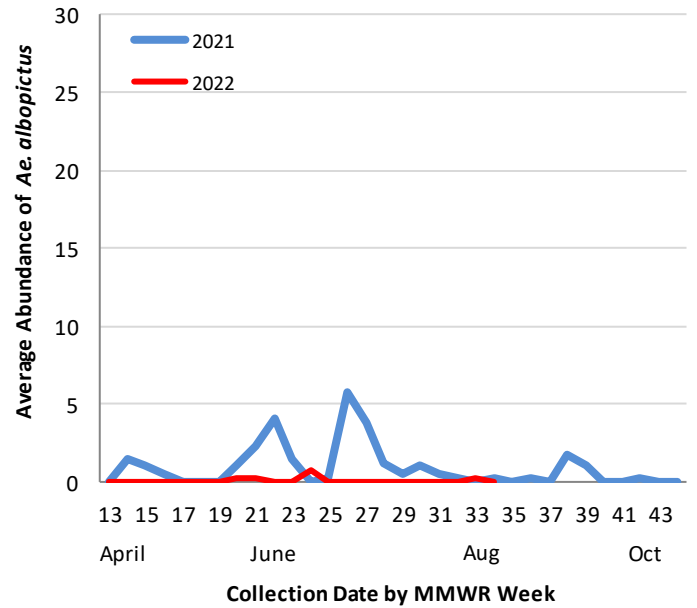
**Figure 9:** BG-Sentinel Trap Counts of Female *Aedes aegypti* and *Aedes albopictus* during 2022: Weeks 14 through 34<sup>†</sup>



**Figure 10:** Average Numbers of *Ae. aegypti* per Trap-night: 2021 and 2022 Seasons<sup>\*,†</sup>



**Figure 11:** Average Numbers of *Ae. albopictus* per Trap-night: 2021 and 2022 Seasons<sup>\*,†</sup>



<sup>\*</sup>Data for most recent 2 weeks are preliminary

<sup>†</sup>Routine *Aedes* BG-Sentinel trapping was conducted during week 15-43 in 2021

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## *Acknowledgements:*

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

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

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

### **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**  
Arbovirus Case Investigation and Clinical Inquiries Team

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