

Dallas County Health and Human Services Arbovirus Surveillance Report



Week 27 ending July 9, 2016

- In week 26, 69 mosquito traps tested positive for WNV.
- In week 27 to date, 38[†] mosquito traps have tested positive for WNV in zip codes: 75043, 75044, 75050, 75080, 75089, 75104, 75115, 75137, 75141, 75149, 75150, 75181, 75205, 75212, 75218, 75225, 75228, 75229, 75238, 75248, 75253.
- The abundance of *Culex quinquefasciatus* is declining; *Aedes albopictus* and *Aedes aegypti* continue to circulate in the area.
- One human WNV case has been reported for 2016. Twelve travel-associated confirmed cases of Zika infection have been identified in Dallas. An additional 11 pregnant women with laboratory criteria for possible Zika infection have been reported to CDC for US Zika Pregnancy Registry surveillance, 3 of whom had symptoms.^m

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

Week Ending	5/28	6/4	6/11	6/18	6/25	7/2	7/9	YTD
MMWR Week	21	22	23	24	25	26*	27*	
Total Traps Placed in Dallas County ^a	251	205	249	238	236	255	176	2,631
Number of Positive Mosquito Traps (PHL; IL) ^c	0; 0	0; 0	7; 0	21; 0	43; 5	59; 10	35 [†] ; 3	166; 19
Number of Pools Tested (PHL; IL) ^{b,c}	233; 46	169; 21	267; 26	277; 28	260; 38	217; 25	150; 6	2,417; 265
Number of Trap Results Currently Pending	2	0	6	1	2	41	34	
Average Number of <i>Cx. quinquefasciatus</i> per Trap ^d	53.5	31.1	75.6	115.9	76.2	52.0	37.0	40.8
Total Number of <i>Cx. quinquefasciatus</i> Trapped and Tested	8,870	4,825	10,162	11,446	10,382	8,508	4,760	79,746
Number of Positive Mosquito Pools (PHL; IL) ^c	0; 0	0; 0	7; 0	25; 0	47; 5	71; 10	35; 3	186; 19
WNV Infection Rate per 1,000 <i>Cx. quinquefasciatus</i> ^e	0	0	0.70	2.29	5.59	11.89	9.21	
Weekly Vector Index (VI) ^f	0	0	0.05	0.27	0.43	0.62	0.34	
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	1; 0	1; 0

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

Week Ending	5/28	6/4	6/11	6/18	6/25	7/2	7/9	YTD
MMWR Week	21	22	23	24	25	26*	27*	
Total Biogents Sentinel-Traps Placed in Dallas County ^h	28	30	47	46	38	44	23	375
Average Number of <i>Aedes</i> per Trap ⁱ	1.8	4.6	7.6	9.3	9.0	7.5	8.3	5.7
Chikungunya Human Cases (Confirmed & Probable) ^j	0	0	0	0	0	0	0	1
Dengue Human Cases (Confirmed & Probable) ^k	0	0	0	0	0	0	0	1
Zika Human Cases (Confirmed Only) ^l	0	0	1	2	1	1	1	12
Pregnant Women with Possible Zika Infection ^m	1	0	1	2	0	0	1	11

[†]One mosquito trap containing only *Aedes albopictus* was positive for WNV, and is not included in VI calculations.

*Data for most recent 2 weeks are preliminary, and reflect results reported as of 10:30 a.m. July 11, 2016.

a. All traps deployed in municipalities submitting data to DCHHS since Week 13. 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. $VI = \sum_{i=species} NiPi$, where N is the average number of *Culex quinquefasciatus* mosquitoes collected per trap night and 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 15. Includes traps without mosquitoes, malfunctioning traps

i. Average abundance of *Aedes albopictus* and *Aedes 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 human Zika cases by week of report to health department (Excludes any pregnant cases)

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 by City, Dallas County*

Week Ending	5/21	5/28	6/4	6/11	6/18	6/25	7/2	7/9	YTD
MMWR Week	20	21	22	23	24	25	26*	27*	
Addison	0	0	0	0	0	1	2	0	3
Balch Springs	0	0	0	1	2	1	2	0	6
Carrollton	0	0	0	1	3	6	5	0	15
Cedar Hill	0	0	0	0	0	1	0	1	2
Cockrell Hill	0	0	0	0	1	0	0	0	1
Coppell	0	0	0	0	0	4	4	0	8
Dallas	0	0	0	3	5	8	14	10	40
DeSoto	0	0	0	0	1	0	1	3	5
Duncanville	0	0	0	0	0	1	1	1	3
Farmers Branch	0	0	0	0	0	0	3	0	3
Garland	0	0	0	1	0	1	1	5	8
Grand Prairie	0	0	0	0	0	4	8	2	15
Highland Park	0	0	0	0	0	0	1	1	2
Hutchins	0	0	0	0	0	0	0	1	1
Irving	0	0	0	0	6	8	6	0	21
Lancaster	0	0	0	0	0	1	0	0	1
Mesquite	0	0	0	1	2	9	12	11	35
Richardson	0	0	0	0	0	1	3	1	5
Rowlett	0	0	0	0	0	2	2	1	5
Sachse	0	0	0	0	0	0	1	0	1
Seagoville	0	0	0	0	0	0	1	0	1
Sunnyvale	0	0	0	0	0	0	1	0	1
University Park	0	0	0	0	1	0	1	1	3
Total	0	0	0	7	21	48	69	38	185

*Data for most recent 2 weeks are preliminary, and reflect results reported as of 10:30 a.m. July 11, 2015. Denominator numbers of traps placed are not included.

Figure 1: All WNV Negative and Positive Mosquito Traps Collected During 2016: Weeks 13-27* (N=2,631)

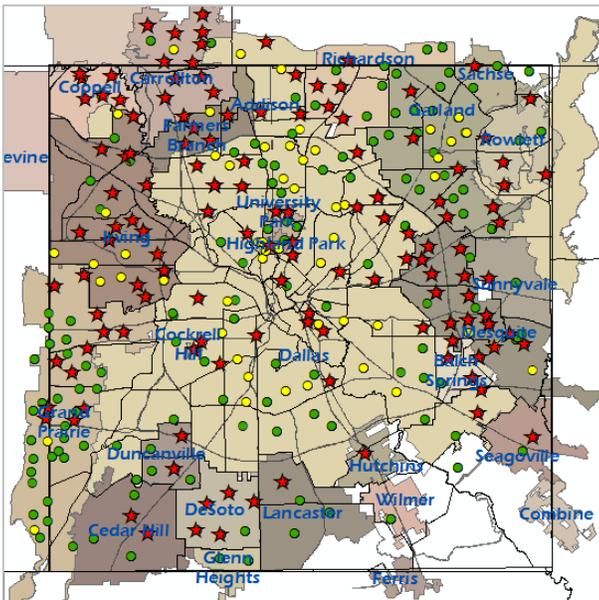
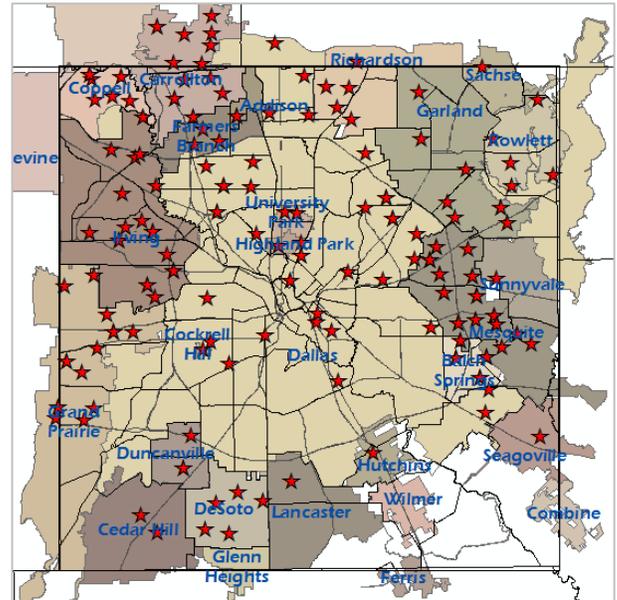


Figure 2: Cumulative WNV Positive Mosquito Traps Collected: Weeks 13-27* (N=185)



★ Positive Traps ● Negative Traps ● Pending Traps

*Data for most recent 2 weeks are preliminary

PHONE

EMAIL

WEB

Figure 3: WNV Positive Mosquito Traps Collected During 2016: Weeks 26 and 27* (N=107)

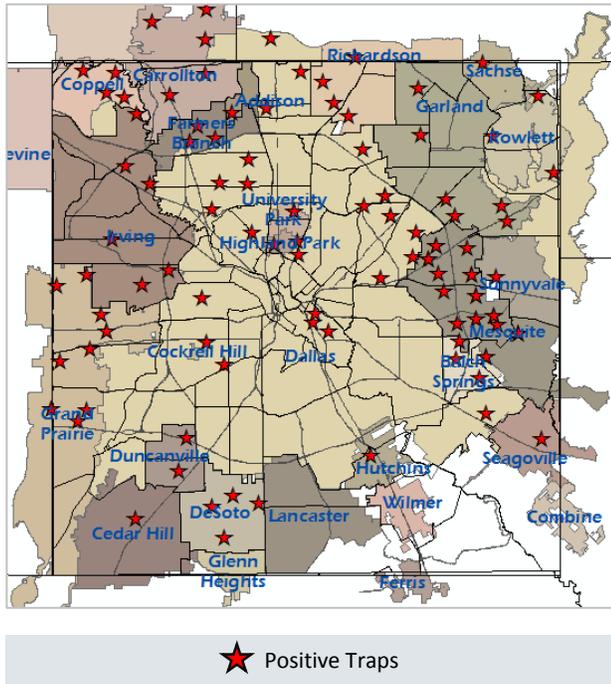


Figure 4: Trap Counts of Female *Cx. quinquefasciatus* from 2016 Season: Weeks 13-27*

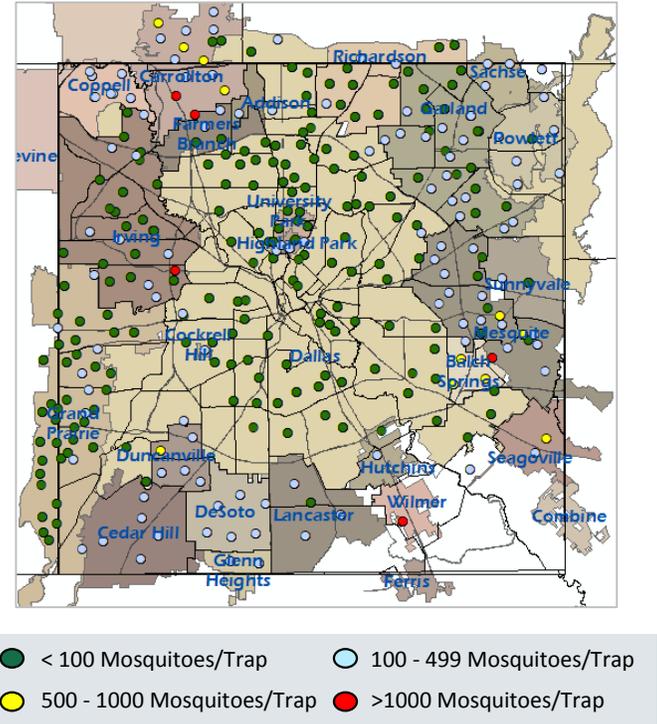
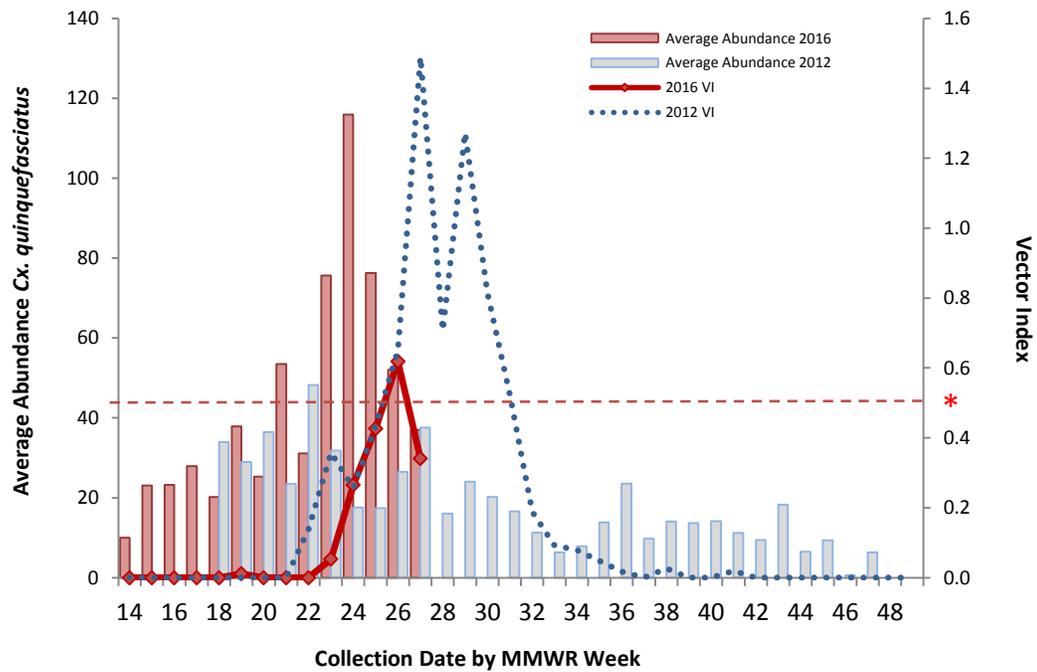


Figure 5: Average Numbers of Female *Cx. quinquefasciatus* per Trap-night and WNV Vector Index by Week: 2012 Season and 2016 Season (through Week 27*)



*Figure 1 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.

*Data for most recent 2 weeks are preliminary

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Figure 6: WNV Vector Index by Week: 2012 - 2016 Seasons

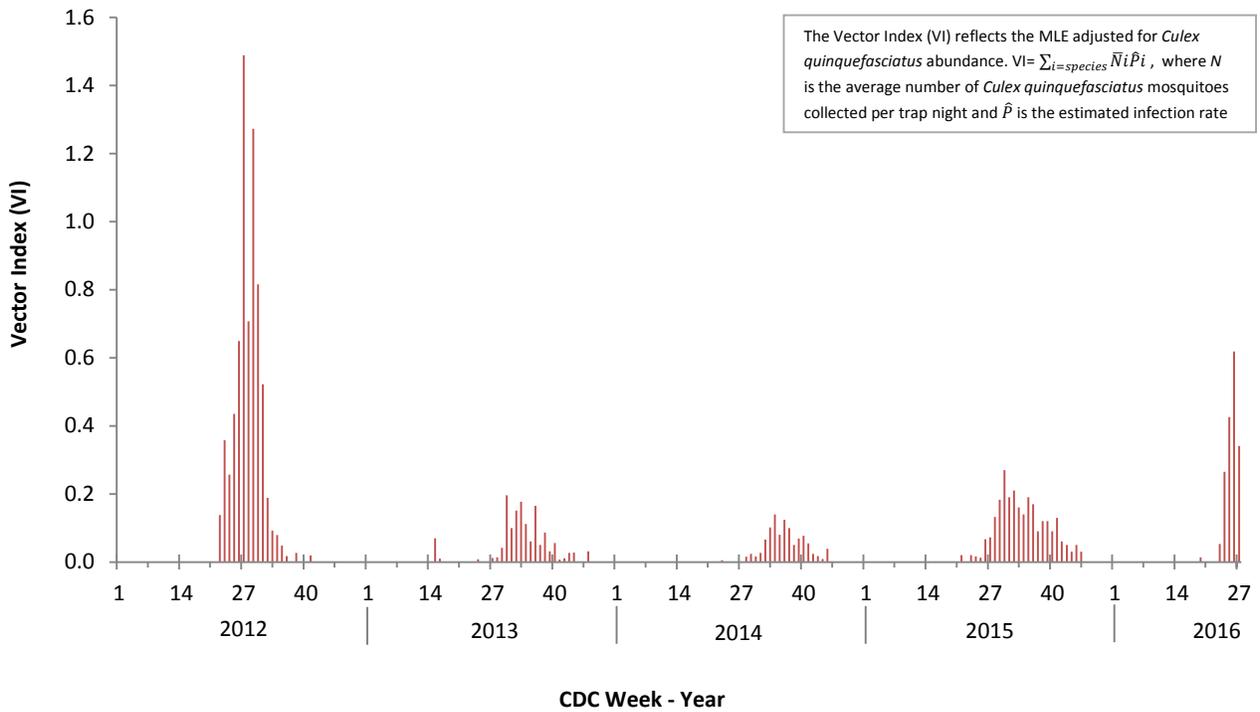


Figure 7: Average Numbers of Female *Cx. quinquefasciatus* per Trap-night by Week: 2012 – 2016 Seasons

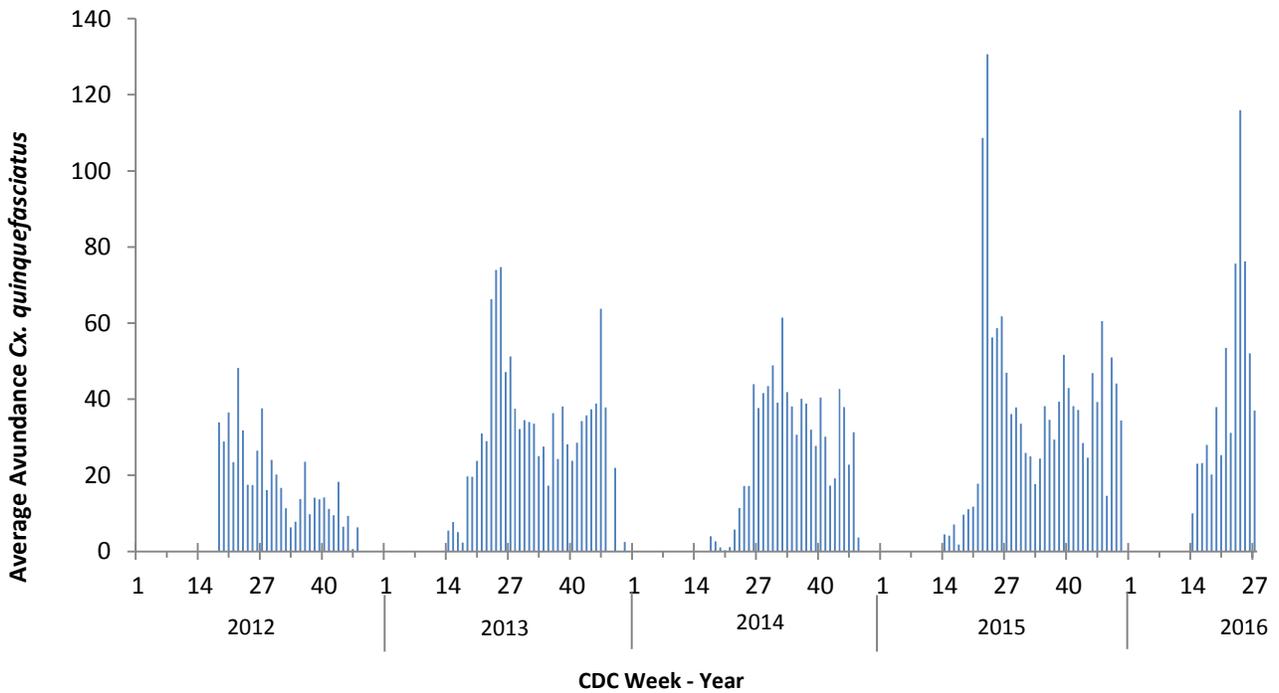


Figure 8: MLE (WNV Infection Rate per 1,000 *Cx. quinquefasciatus*) by Week: 2012 - 2016 Seasons

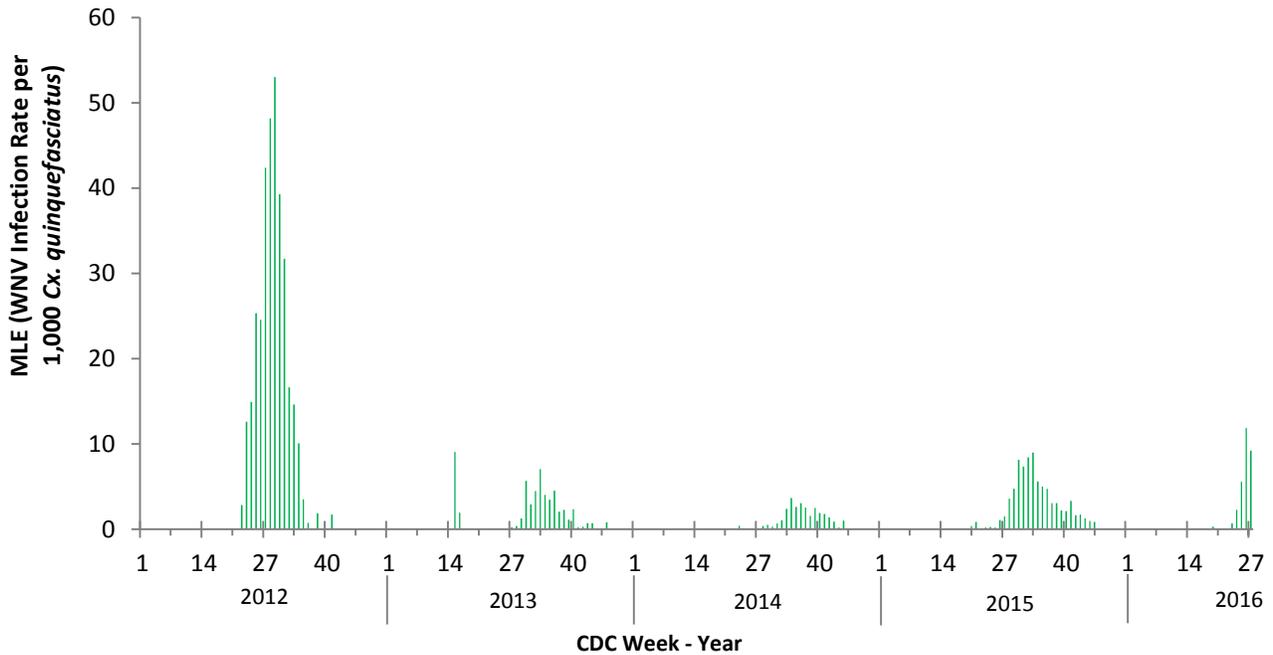
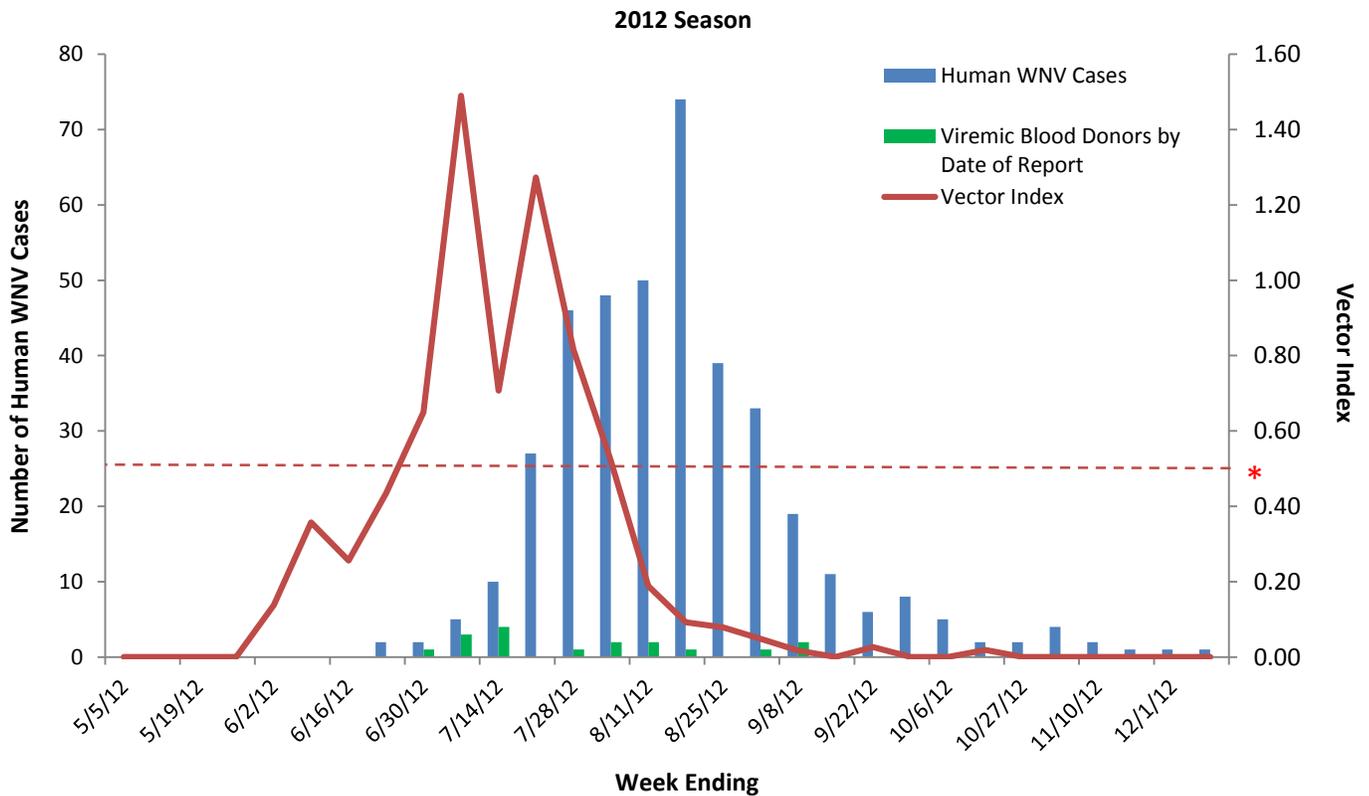


Figure 9: WNV Vector Index, Viremic Blood Donors, and Human WNV Cases by Week of Report:



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Figure 10: BG-Sentinel Trap Counts of Female *Aedes aegypti* and *Aedes albopictus* During 2016: Weeks 15 through

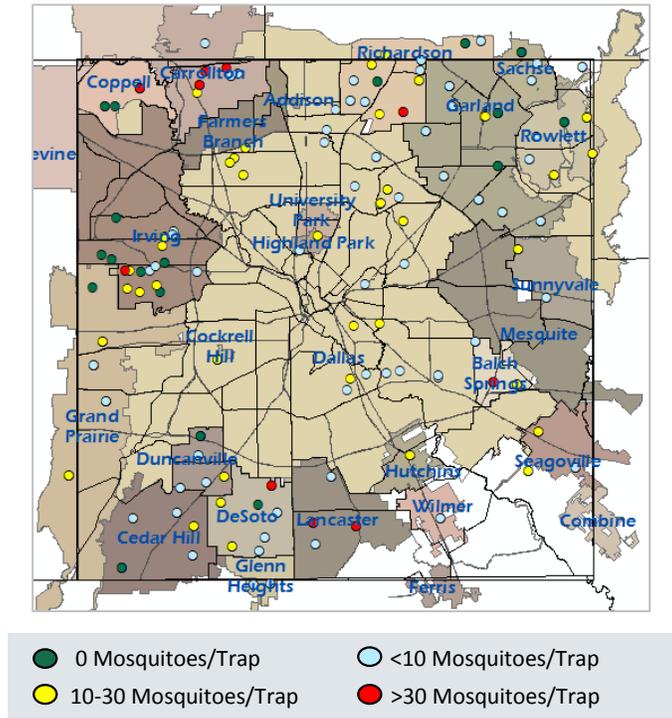


Figure 11: Average Numbers of *Aedes aegypti* per Trap-night: 2015 and 2016 Seasons

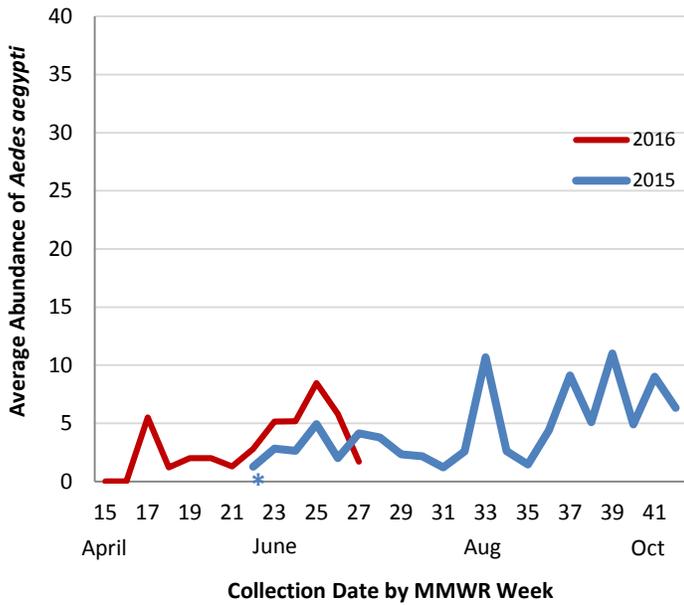
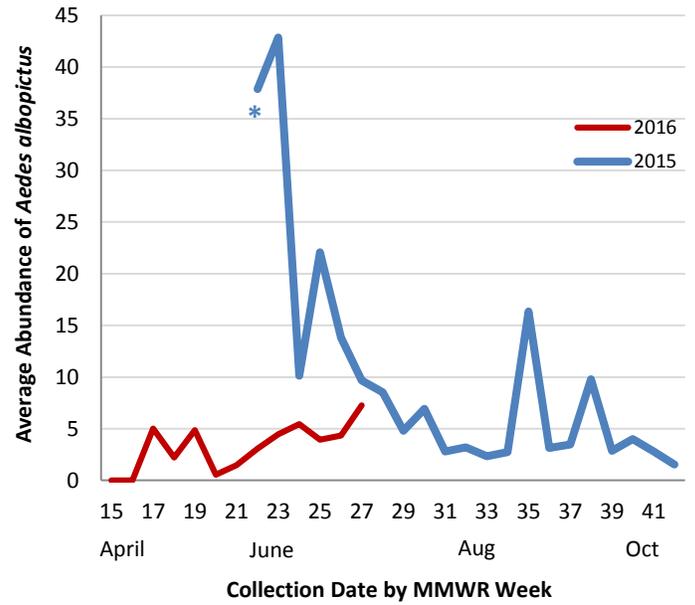


Figure 12: Average Numbers of *Aedes albopictus* per Trap-night: 2015 and 2016 Seasons



**Aedes* BG-Sentinel trapping began Week 22 in 2015

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