MOSQUITO and VECTOR MANAGEMENT DISTRICT of SANTA BARBARA COUNTY

DISEASE SURVEILLANCE REPORT

October 2020

Live Mosquito-Borne Virus Surveillance

In October, the District shifted surveillance focus to two neighborhoods with confirmed presence of the non-native *Aedes aegypti*. One of the mosquito samples (*Culex quinquefasciatus*) caught in one area tested positive for West Nile virus.

Location	Date	Number of Mosquitoes	Type of Trap	# of Traps	Mosquitoes per Trap Night	Pools Submitted	WSW Virus Test Result
Santa Barbara County							
Lake Los Carneros	9/29-10/2	37	Gravid	3	4.1	3	Negative
Lake Los Carneros	9/29-10/2	0	BGS2	1	0	0	
Crescent Drive	10/1-10/2	3*	CO_2	3	1	0	
Carpinteria Cemetary	9/16-10/6	2	BGS2	1	0.2	0	
Crescent Drive	10/6-10/7	9	CO_2	8	1.1	0	
Crescent Drive	10/2-10/7	4	BGS2	7	0.1	0	
Crescent Drive	10/5-10/9	66	Gravid	3	5.5	3	Positive
Sterrett Ave	10/7-10/14	7*	BGS2	3	0.33	0	
Santa Monica Creek	10/14-10/15	37	CO_2	2	18.5	0	
Santa Monica Creek	10/14-10/16	16	Gravid	1	8	2	Negative
Crescent Drive	10/7-10/16	5*	BGS2	2	0.27	0	
Connie Way	10/8-10/23	0	BGS2	1	0	0	
Lake Los Carneros	10/19-10/23	38	Gravid	3	3.2	2	Negative
Center Ave.	10/1-10/23	2*	BGS2	1	0.09	0	
Aurora Ave.	10/13-10/23	3	BGS2	1	0.3	0	
Calvary Cemetary	10/6-10/23	4	BGS2	1	0.2	0	
Sterrett Ave.	10/14-10/28	7*	BGS2	1	2	0	
UCSB/SB Airport bluffs	10/27-10/28	22	CO_2	12	1.8	2	Negative
Calle Cita	10/9-10/28	0	BGS2	1	0	0	
Chino Street	10/23-10/29	4*	BG AGO	2	0.67	0	
Crescent Drive	10/29-10/30	9	CO_2	6	1.5	1	Negative
Center Ave.	10/29-10/30	35	CO_2	3	11.7	2	Negative
Crescent Drive	10/27-10/31	67	Gravid	2	8.4	9	Negative
Center Ave.	10/27-10/31	14	Gravid	1	3.5	3	Negative

***Aedes aegypti* present** WSW=WNV, SLEV, AND WEE

West Nile Virus Activity
A mosquito pool caught in a gravid trap in the Crescent Drive area tested positive for West Nile virus; the sample consisted of 47 female *Culex quinquefasciatus*. This is Santa Barbara County's first positive result for West Nile virus since 2017. Fifteen (15) pools from the area tested negative the following week. WNV pamphlets were distributed in the neighborhood. Following the District's press release, nine dead birds were reported by members of the public. Two crows were accepted for testing, and results are pending.

This October, the number of reported cases of human infection with WNV in 2020 in California has increased from 91 to 155. There have been seven fatalities in California this year.

In California, 75 birds tested positive for WNV, bringing the 2020 total to 336. A total of 2,617 positive mosquito pools were reported from 28 counties this year; this time last year, there were 3,269 positive pools from 25 counties.

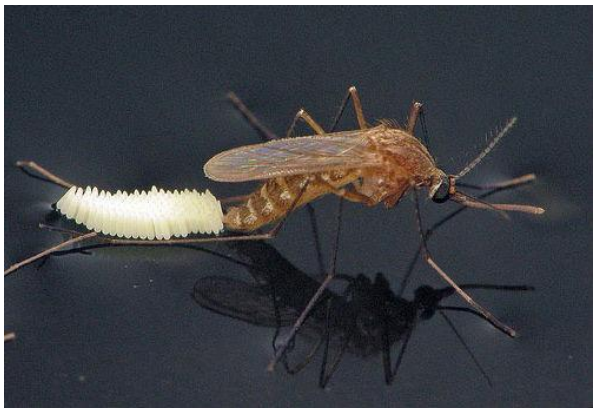
St. Louis Encephalitis Virus Activity
Three human SLEV infections have been reported this year from Fresno, Madera, and San Joaquin Counties. In 2020, 509 positive mosquito pools have been reported from nine counties.

Zika Virus and Invasive *Aedes* Mosquito Update
A resident of the West Side neighborhood in the City of Santa Barbara turned in a mosquito that was identified as *Aedes aegypti*. Technicians distributed pamphlets and set traps in that area as well as the area of the first detection in unincorporated SB County (Hope Avenue area). The District has documented 27 *Aedes aegypti* mosquitoes from eight addresses.

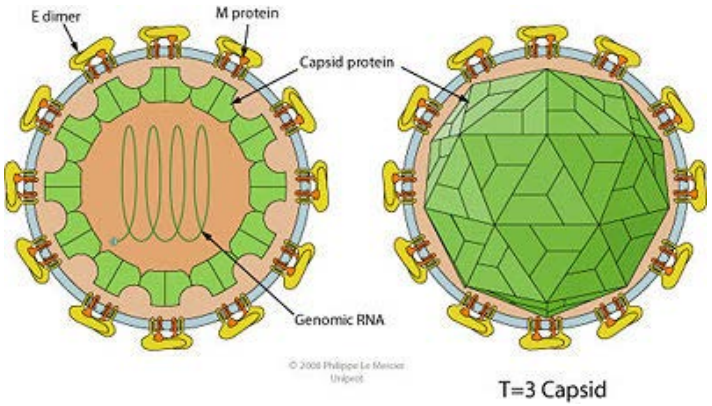
There were no Zika virus infections reported in California in October. Invasive *Aedes* are present in the following 22 counties: Los Angeles, Orange, San Diego, Riverside, San Bernardino, Butte, Imperial, Kern, Kings, Fresno, Madera, Merced, San Joaquin, Placer, Sacramento**, Santa Barbara**, Shasta, Sutter, Stanislaus, Tulare, Ventura, and Yolo.

Western Equine Encephalitis
There was no reportable WEE activity in California in October.

Sentinel Chicken Flocks
The District currently maintains four sentinel chicken flocks in Santa Barbara County located at the Goleta Sanitary District, Mission Hills Community Services District, the Solvang City Wastewater Treatment Plant, and the U.S. Forest Service Fire Station in Carpinteria. Blood samples were collected from these chickens during the weeks of October 12 and October 26, and all tested negative for the presence of WNV, SLEV, and WEE. In California in 2020, 138 sentinel chickens from 16 California counties have tested positive for WNV.



Culex quinquefasciatus, Southern house mosquito



West Nile virus (WNV)

West Nile Virus
Vectored by *Culex quinquefasciatus*

West Nile virus was discovered in Uganda in 1937 and arrived in New York in 1999. It first reached California in 2003, and by the end of 2004, it had been detected in every California county. Since 2003 in California, there have been over 7,000 human cases, and more than 300 have been fatal. Only about 20 percent of infected humans show symptoms; these include fever, headache, body ache, and swollen lymph nodes. Severe infections can result in encephalitis, meningitis and comas.

Like Zika, dengue, yellow fever, and hepatitis C, WNV is in the family Flaviviridae. Flaviviruses consist of an RNA genome, surrounded by a protein capsid, inside a lipid envelope, covered with two types of surface proteins. (Coronaviruses are in a different virus family [Coronaviridae]; mosquitoes are not known to vector COVID)

WNV usually circulates between mosquitoes in the genus *Culex* and birds, especially crows and other corvids (blue jays, ravens and magpies). Sometimes infected mosquitoes can vector the virus to other animals, including humans and horses; these animals are “dead end hosts” and can only transmit the virus to others via “fluids,” i.e. blood transfusions or breastfeeding.

In October 2020, a pool of *Culex quinquefasciatus* (AKA the Southern house mosquito) tested positive for West Nile virus in Santa Barbara County. This medium-sized, brown mosquito distinctly **lacks** patterns of scales on its legs and wings. It tends to bite birds and humans at dusk and at night. Eggs and larvae are commonly found in urban runoff, drains, and containers with decomposing plant material.