



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

March 2017

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2017 to date. Throughout California, three WNV positive dead birds have been reported; one each in Orange, San Diego, and San Mateo Counties.

Statistics for California WNV activity can be found online at www.westnile.ca.gov. National statistics for WNV can be found at the National Centers for Disease Control and Prevention website at www.cdc.gov.

Zika Virus and Invasive *Aedes* Mosquito Update

The Santa Barbara County Public Health Department has reported a total of nine travel related cases of Zika infection in Santa Barbara County, including two in February 2017. There have been 529 imported cases of Zika virus into California as of March 31, 2017, but no local mosquito transmitted cases. However, a locally acquired case of Zika has recently been reported in Ensenada, Baja California, Mexico. Local mosquito transmitted cases of Zika infections have also been reported in southern Florida and southern Texas. Invasive Yellow fever mosquitoes (*Aedes aegypti*) and Asian tiger mosquitoes (*Aedes albopictus*) have now been found in at least 129 cities and communities in 12 California counties. A third species, the Australian backyard mosquito (*Aedes notoscriptus*) appears to be getting established in parts of Los Angeles County. Some California vector control districts already report finding live invasive *Aedes* larval activity in 2017. *Ae. aegypti* and *Ae. albopictus* can transmit Dengue, Chikungunya, and Yellow fever viruses as well as Zika virus. *Ae. notoscriptus* is an excellent vector of Dog heartworm.

Zika virus information can be found at <http://www.cdph.ca.gov/HealthInfo/discond/Pages/Zika.aspx> and at <http://www.cdc.gov/zika/>.

Live Mosquito-Borne Virus Surveillance

The 2017 live mosquito trapping season is underway. Overall numbers of mosquitoes have been low, most likely because of colder than normal January and February weather. As would be expected after this winter's heavy rains, the univoltine (one generation per year) Floodwater mosquitoes (*Aedes washinoi*) and California salt marsh mosquitoes (*Aedes squamiger*) have been well represented in the trapping samples. When winter rains flood seasonal wetlands, the larvae of these species hatch out from eggs laid the previous spring. Also significant numbers of Cool-weather mosquitoes (*Culiseta incidens*) and Cold-weather mosquitoes (*Culiseta particeps*) have been collected. None of these native species are significant vectors of human disease. BG-Sentinel traps are beginning to be deployed as well to survey for invasive *Aedes* mosquito species that are known vectors of Zika virus and other diseases. Trapping in March 2017 was somewhat curtailed due to rain and high winds. Trapping in San Luis Obispo County will begin in April 2017 and continue through at least May 2017.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS^	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
South Coast						
UCSB/Santa Barbara Airport Bluffs	3/2-3/17	103	11 EVS/1 BG	8.6	2	Pending
El Estero Wastewater Plant, Santa Barbara	3/7-8/17	30	11 EVS/3 BG	2.1	2	Pending

North County						
E. end of Burton Mesa Rd., Mission Hills	3/14-15/17	4	2 EVS/1 BG	1.3	0	N.A.
Club House Rd., Vandenberg Village	3/14-15/17	29	3 EVS	9.7	1	Pending
S. Ynez River @ Floradale Ave., Lompoc City	3/14-15/17	19	4 EVS	4.8	0	N.A.
Bailey Wetland, Lompoc City	3/14-15/17	16	4 EVS	4.0	0	N.A.
Orcutt Creek @ Broadway, Orcutt	3/16-17/17	72	5 EVS/3 BG	9.0	2	Pending
Orcutt Creek @ Highway 135, Orcutt	3/16-17/17	11	4 EVS	2.8	0	N.A.
Orcutt Creek @ Bradley Rd., Orcutt	3/16-17/17	8	3 EVS	2.7	0	N.A.
San Luis Obispo County						
<i>Trapping to begin in April 2017</i>						

* Mosquitoes Per Trap Night = Number of Mosquitoes ÷ (Number of Traps x Number of Nights)

^ EVS = CO2 trap BG = BG-Sentinel invasive *Aedes* mosquito trap

This surveillance technique utilizes battery-powered Encephalitis Virus Surveillance (EVS) traps that use dry ice as a source of carbon dioxide along with human scented BG-Sentinel traps to attract adult female mosquitoes that are actively seeking a blood meal. The live female mosquitoes are taken into the District's laboratory where they are anesthetized with triethylamine under the fume hood. They are then separated by species using a stereo zoom microscope and placed into "pools." The pools (1 pool = up to 50 adult female mosquitoes of a single species collected at one place at one time) are stored in the District's ultra-low temperature freezer at -70°C until they can be submitted to the Davis Arbovirus Research and Training (DART) laboratory on the U.C. Davis campus where they are analyzed for the presence of live mosquito-borne viruses including WNV.

Sentinel Chicken Flocks

The last samples of the 2016 sentinel chicken season were obtained by District personnel the week of February 27-March 3, 2017. All samples were negative for WNV and other mosquito-borne encephalitis viruses.

For the 2017 season, the District is shifting the size of chicken flocks from 10 birds down to 7, as many other districts have done. The District has obtained 21 new chickens to restart the flock at the U.S. Forest Service Ranger Station on Paradise Road and to replace the two year old chickens at the Carpinteria and Solvang wastewater treatment plants. The new chickens were picked up at the Demler Egg Ranch in San Jacinto, California on March 30, 2017. The chickens at the Goleta Sanitary District and the Mission Hills Community Services District will serve for another year. The 2017 sentinel chicken sampling season will begin in April 2017.

Samples of blood are collected from each chicken on strips of filter paper and dried overnight. They are then submitted to the California Department of Public Health Vector-Borne Disease Laboratory at Richmond, California where they are analyzed for antibodies to WNV and other mosquito-borne encephalitis viruses.

West Nile Virus Dead Bird Submissions

The West Nile Virus Dead Bird Hotline is now back in full operation. The District did not submit any dead birds in March 2017, but did retrieve and submit a sample from a Crow found dead in Orcutt on April 3, 2017. Laboratory results for the Crow are pending.

Citizens can report dead birds to the California Department of Public Health's toll free West Nile Virus Dead Bird Hotline (1-877-968-2473 or 1-877-WNV-BIRD) or online at www.westnile.ca.gov. Local agencies will pick up the dead birds and collect samples via oral swabs that are transferred to RNase cards. The RNase cards are dried outdoors for at least two hours then mailed to the Davis Arbovirus Research and Training (DART) laboratory on the U.C. Davis campus where the samples are analyzed for West Nile Virus.



**Actual
Size**



FUNGUS GNATS (Diptera: Mycetophilidae)

In recent weeks these small true flies have been quite abundant. Winter rains have probably created perfect breeding conditions that resulted in a spike in their population. The District often receives complaints from citizens that mistake them for mosquitoes. Fungus gnats lack the mosquitoes' proboscis and have conspicuous spines on their legs. They are often seen running on window panes (mosquitoes can barely walk). Lacking a proboscis, they are unable to bite and cannot transmit disease. The name "Fungus gnat" comes from the fact that the larvae feed on fungi, often in leaf litter.