



## MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

# DISEASE SURVEILLANCE REPORT

June 2017

### **West Nile Virus Activity**

No West Nile virus (WNV) activity has been detected in Santa Barbara County in 2017 to date. There is WNV activity in other areas of California, but activity levels are mostly down from the same time in 2016. Three human cases (none fatal) have been confirmed in Kings, Kern, and Los Angeles counties. Thirty-nine WNV positive dead birds have been reported from 12 counties along with 412 WNV positive mosquito pools from 14 counties. Three human cases have been confirmed in Kings, Kern, and Los Angeles counties. One WNV positive sentinel chicken has been reported from Los Angeles County.

Statistics for California WNV activity can be found online at [www.westnile.ca.gov](http://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](http://www.cdc.gov).

### **St. Louis Encephalitis Virus Activity**

In 2017 to date, four mosquito pools have tested positive for St. Louis encephalitis, two each from Fresno and Kern counties. St. Louis encephalitis is a native mosquito-borne virus that is in the Family Flaviviridae (as is WNV) and has symptoms similar to WNV.

### **Zika Virus and Invasive *Aedes* Mosquito Update**

The Santa Barbara County Public Health Department has reported a total of 10 travel related cases of Zika infection in Santa Barbara County to date, three in calendar year 2017. No invasive *Aedes* sp. mosquitoes have been found in Santa Barbara County to date. There have been 573 imported cases of Zika virus into 36 California counties as of June 30, 2017, but no local mosquito transmitted cases. However, at least one locally acquired case of Zika has 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 131 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. *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 <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Zika.aspx> and at <http://www.cdc.gov/zika/>.

### **Live Mosquito-Borne Virus Surveillance**

The District conducted 17 mosquito trapping surveys in June 2017. Fairly high numbers of mosquitoes were collected at the UCSB/Santa Barbara Airport bluffs, Lake Los Carneros, and the City of Santa Barbara's El Estero Wastewater Plant. However, the greatest number of mosquitoes were collected in San Luis Obispo County's 5 Cities locations. Winter and spring species such as the univoltine (one generation per year) floodwater mosquitoes (*Aedes washinoi*) and multivoltine (multiple generations per year) winter mosquitoes (*Culiseta inornata*) are still very active in San Luis Obispo County, but are mostly finished in southern Santa Barbara County. *Culex* species and malaria mosquitoes (*Anopheles* spp.), all multivoltine, are becoming more numerous with the warmer summer weather. Cool-weather mosquitoes (*Culiseta incidens*) and cold-weather mosquitoes (*Culiseta particeps*) are still very active, particularly in San Luis Obispo County. The District has submitted 127 sample pools of mosquitoes for laboratory analysis in 2017 to date. All have tested negative for WNV and other mosquito-borne encephalitis viruses.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS <sup>^</sup>	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
<b>South Coast</b>						
UCSB/Santa Barbara Airport Bluffs	6/8-9/17	798	12 EVS	66.5	17	Negative
UCSB Main Campus	6/8-14/17	62	2 BG	4.4	0	N.A.
El Estero Wastewater Plant, Santa Barbara	6/13-14/17	236	11 EVS	21.5	6	Negative
El Estero Wastewater Plant, Santa Barbara	6/13-20/17	~100	2 BG	~7.1	0	N.A.
Carpinteria Cemetery, Cravens Ln., Carpinteria	6/13-21/17	0	1 BG	0	0	N.A.
Lake Los Carneros, Goleta City	6/20-21/17	461	10 EVS	46.1	8	Negative
Andree Clark Bird Refuge, Santa Barbara City	6/27-28/17	32	12 EVS	2.7	2	Pending
<b>North County</b>						
Lake Marie subdivision, Orcutt	6/22-23/17	86	8 EVS/2 BG	8.6	2	Negative
Leroy Park, Guadalupe	6/22-23/17	99	6 EVS	16.5	2	Negative
<b>San Luis Obispo County</b>						
Producers' Ditch, San Luis Obispo City	6/6-7/17	167	5 EVS	33.4	4	Negative
Islay Park, San Luis Obispo City	6/6-7/17	66	4 EVS	16.5	1	Negative
Spanish Oaks (Islay Park), San Luis Obispo City	6/6-7/17	63	3 EVS	21.0	1	Negative
Rancho San Luis Mobile Home Park, SLO City	6/6-14/17	0	1 BG	0	0	N.A.
Creekside Mobile Home Comm., SLO City	6/6-14/17	0	1 BG	0	0	N.A.
Chumash Park, Pismo Beach City	6/14-15/17	~397	4 EVS	~99.3	2	Negative
North Beach Campground, Pismo State Beach	6/14-15/17	~749	4 EVS	~187.3	2	Negative
Oceano Dunes Wetland, Pismo State Beach	6/14-15/17	~2,007	4 EVS	~501.8	6	Negative

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

<sup>^</sup> 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, sorted by species, 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. The BG-Sentinel traps are deployed to survey for invasive *Aedes* mosquito species that are known vectors of Zika virus and other diseases.

### Sentinel Chicken Flocks

District personnel are obtaining samples from each chicken in the five sentinel flocks every two weeks. All samples submitted in 2017 to date have been negative for WNV and other mosquito-borne encephalitis viruses.





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 District submitted one dead bird in June 2017, a crow from Santa Ynez. Laboratory results on the crow are pending. All other dead birds submitted for testing in 2017 have been negative for WNV.

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](http://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.

<b>MITES</b>	
Class Arachnida	Order Acari
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><b>Dorsal View</b></p> </div> <div style="text-align: center;">  <p><b>Ventral View</b></p> </div> </div> <div style="margin-top: 20px;"> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; font-size: 8px;">Actual Size</div> <p><b>Tropical Rat Mite (<i>Ornithonyssus bacoti</i>)</b></p> <p><b>Family Macronyssidae</b></p> </div> <div style="text-align: center; margin-top: 20px;">  <p><b>Ventral view of specimen engorged</b></p> </div>	<div style="text-align: center;">  <div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; font-size: 8px;">Actual Size</div> <p><b>A predatory mite species. Probably Family Cunaxidae.</b></p> </div>
<p>Mites are not insects, but are arachnids along with spiders, scorpions, solfugids, etc. They are further classified in the Order Acari along with ticks. Recently the District has received a number of complaints from citizens regarding biting insects or mites. One mobile home in the City of Goleta actually was infested with tropical rat mites (<i>Ornithonyssus bacoti</i>). This blood-feeding species is parasitic on rats and other mammals and often infests human dwellings when rats are present. They will attack humans, especially after a rodent infestation has been removed. District personnel are working with the resident to control the rat problem. The cunaxid mite is not a blood feeder, but is predatory on minute insects, mites, etc. The specimen illustrated here was trapped on a glue board at a City of Santa Barbara residence where the resident has been complaining of “bites” for some time. No vectors have so far been found at that residence.</p>	