



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

August 2016

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2016 to date. 78 confirmed human cases (2 fatal) of WNV have been reported from 17 California counties. 1,081 WNV positive dead birds have been reported from 32 California counties. A total of 2,780 WNV positive mosquito pools have been reported from 30 counties along with 213 WNV positive sentinel chickens from 55 flocks in 15 counties. Ventura County has reported one human case and 20 WNV positive dead birds, mostly from Simi Valley. San Luis Obispo County reported one human case of WNV, but that appears to have been contracted elsewhere.

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.

Saint Louis Encephalitis Virus Activity

A total of 110 mosquito pools in 5 California counties and 2 sentinel chickens in one flock in one county have tested positive for St. Louis Encephalitis (SLE). SLE is a native mosquito-borne virus that can cause symptoms that are very similar to WNV. Both viruses are in the family Flaviviridae.

Zika Virus and Invasive *Aedes* Mosquito Update

The Santa Barbara County Public Health Department has confirmed that two women (one pregnant) who recently visited Central America and Mexico respectively are the County's first travel related cases of Zika infection. Ventura County has also reported their first travel related case of Zika (not pregnant). There have been other imported cases of Zika virus into California, but no local mosquito transmitted cases. In south Florida, local mosquito transmitted cases of Zika infections continue to increase. Invasive *Aedes* spp. mosquitoes have now been found in at least 84 cities and communities in 12 California counties. Significant activity has been reported for all three invasive *Aedes* species in most areas with known infestations.

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 District conducted 16 mosquito trapping surveys in August 2016. The surveys include the use of both carbon dioxide baited Encephalitis Virus Surveillance (EVS) traps and the human scented BG-Sentinel traps. The results of the surveys are shown in the table below. The District has submitted 165 sample mosquito pools in 2016 to date. All pools tested have been negative for WNV and other mosquito-borne viruses.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS^	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
5000 block of Shoreline Dr., Goleta Valley	7/28-8/3/16	0	1 BG	0	0	N.A.
Orcutt Creek @ Broadway, Orcutt	8/1-2/16	155	5 EVS/2 BG	22.1	5	Negative
Orcutt Creek @ Highway 135, Orcutt	8/1-2/16	27	4 EVS	6.8	0	N.A.
Orcutt Creek @ Bradley Rd., Orcutt	8/1-2/16	19	4 EVS/1 BG	3.8	0	N.A.
Lake Los Carneros, Goleta City	8/3-4/16	17	12 EVS	1.4	0	N.A.
El Estero Wastewater Plant, Santa Barbara	8/9-10/16	86	12 EVS/2 BG	6.1	2	Negative
Sage Hill Cmpgrnd., upper Santa Ynez Valley	8/15-16/16	31	4 EVS	7.8	1	Negative
Santa Ynez River @ Fjord Dr., Solvang	8/15-16/16	148	4 EVS/ 1 BG	29.6	3	Negative

Riverview Park, Buellton	8/15-16/16	9	4 EVS/ 1 BG	1.8	0	N.A.
Alamo Pintado Creek, Los Olivos	8/15-16/16	8	3 EVS/1 BG	2.0	0	N.A.
5200 block of Shoreline Dr., Goleta Valley	8/5-18/16	0	1 BG	0	0	N.A.
Lake Marie Subdivision, Orcutt	8/17-18/16	413	7 EVS/2 BG	45.9	8	Negative
Leroy Park, Guadalupe	8/17-18/16	7	5 EVS	1.4	0	N.A.
Jalama Beach County Park	8/22-23/16	~6,633	10 EVS	~663.3	19	Negative
UCSB/Santa Barbara Airport Bluffs	8/24-25/16	58	12 EVS	4.8	2	Pending
Isla Vista Community	8/29-31/16	3	2 BG	0.8	0	N.A.

* 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


District personnel are taking samples from all five sentinel chicken flocks every two weeks. All samples submitted in 2016 to date have been negative for WNV and other mosquito-borne 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 retrieved one dead bird in August 2016, a Crow from the City of Santa Barbara. Unfortunately the Crow was so heavily infested with ants that it could not be sampled. All dead bird samples submitted by the District in 2016 to date 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. 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.




TULE MOSQUITO (*Culex erythrorhax*)

This mosquito species is very abundant within the District and is common at Lake Los Carneros, the Andree Clark Bird Refuge, the Goleta Slough, Jalama Beach, and many other wetland habitats. Adult females are known vectors of West Nile Virus. Immature stages develop in wetland habitats with very dense freshwater vegetation, particularly tule vegetation, hence the name “Tule mosquito.”

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Adult Female



Actual Size