



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

November 2016

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2016 to date. 396 confirmed human cases (18 fatal) of WNV have been reported from 29 California counties. 1,346 WNV positive dead birds have been reported from 33 California counties. A total of 3,496 WNV positive mosquito pools have been reported from 31 counties along with 342 WNV positive sentinel chickens from 81 flocks in 19 counties. Ventura County has reported two human cases and 34 WNV positive dead birds, mostly from Simi Valley. San Luis Obispo County has reported one asymptomatic blood donor human case of WNV.

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

Three human cases of St. Louis Encephalitis (SLE) have been confirmed in Sacramento, Fresno, and Kern counties. 180 mosquito pools in 8 California counties and 4 sentinel chickens in 3 flocks in 2 counties have tested positive for SLE. The majority of the mosquito pools have been in Kern and Riverside counties. SLE is a native mosquito-borne virus that can cause symptoms that are very similar to WNV.

Zika Virus and Invasive *Aedes* Mosquito Update

The Santa Barbara County Public Health Department has reported seven travel related cases of Zika infection in Santa Barbara County to date. There have been over 300 imported cases of Zika virus into California, but no local mosquito transmitted cases. Local mosquito transmitted cases of Zika infections have been reported in southern Florida and southern Texas. Invasive *Aedes* spp. mosquitoes have now been found in at least 129 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 five mosquito trapping surveys in November 2016 using only human scented BG-Sentinel traps. The results of the surveys are shown in the table below. The District submitted 227 sample mosquito pools in 2016, well short of the District's record of 529 in 2011. All pools tested in 2016 were negative for WNV and other mosquito-borne viruses. Surveillance using the carbon dioxide baited EVS traps will resume in spring 2017.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS [^]	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
South Coast						
IVRPD Lath House, Isla Vista	10/21-11/1/16	0	1 BG	0	0	N.A.
La Cumbre Country Club, Hope Ranch	11/1-10/16	0	1 BG	0	0	N.A.
UCSB Stables, UCSB West Campus	11/4-10/16	0	1 BG	0	0	N.A.
UCSB Organic Garden	11/10-17/16	0	1 BG	0	0	N.A.
1800 block of Grand Ave., Santa Barbara City	11/22-29/16	0	1 BG	0	0	N.A.
1700 block of Grand Ave., Santa Barbara City	11/22-30/16	0	1 BG	0	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

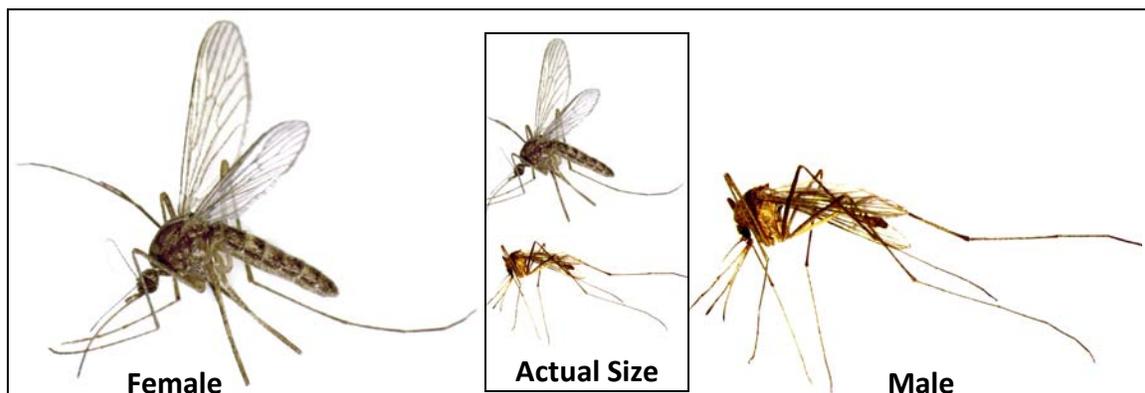
District personnel have switched to taking samples from the sentinel chicken flocks once per month for the winter season instead of every two weeks. The sentinel flock at the U.S. Forest Service Ranger Station on Paradise Road has been deactivated until spring. The Paradise Road chickens were adopted by Forest Service personnel. 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 did not submit any dead birds in November 2016. All dead bird samples submitted by the District in 2016 to date have been negative for WNV. The West Nile Virus Dead Bird Hotline closed for the winter season on October 14, 2016. The public can still report dead birds online at www.westnile.ca.gov. The District has made arrangements with CDPH to continue testing approved dead birds through the winter. The hotline will resume operations in spring 2017.

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.



WINTER MOSQUITO (*Culiseta inornata*)

Probably California's largest mosquito species, the Winter mosquito is active from late-September until mid-May as its name would suggest. Adult females are mostly inactive (aestivate) during the warm summer months while males die off. Immature stages live in freshwater and brackish water wetlands as well as urban mosquito breeding sources. Adult females have been documented to be infected with a California Encephalitis group virus, but its effect on humans is not well studied. Winter mosquitoes are generally not considered to be a vector of human disease.