



## MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

# DISEASE SURVEILLANCE REPORT

January 2016

### West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in California in 2016 to date.

In 2015 Santa Barbara County had three dead birds and a sample pool of mosquitoes test positive for WNV. Ventura County had even more significant WNV activity with 6 confirmed human cases (two fatal), 26 positive dead birds, and 11 positive sentinel chickens. Throughout California the final figures for 2015 include 737 confirmed human cases of WNV (45 fatal) from 31 counties. A total of 1,349 WNV positive dead birds were collected in 37 counties along with 3,329 WNV positive mosquito pools from 29 counties. Also, 449 WNV positive sentinel chickens in 96 flocks were reported from 22 counties. Additionally, 38 mosquito pools and 8 sentinel chickens from 2 flocks from the Coachella Valley, Riverside County tested positive for St. Louis Encephalitis (SLE). SLE is a native virus similar and closely related to WNV.

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).

### Zika Virus Update

Zika Virus has been in the news recently for being **suspected** of causing microcephaly (undersized head and brain) in newborn infants in Brazil. It should be noted that local transmission of Zika Virus has **not** occurred anywhere in the United States. The vectors of Zika Virus, Yellow Fever Mosquito (*Aedes aegypti*) and Asian Tiger Mosquito (*Ae. albopictus*), are beginning to become established in California, but have **not** been found in Santa Barbara County as yet (see below).

### West Nile Virus Dead Bird Submissions

The District submitted one dead bird sample in January 2016, a Crow from the City of Lompoc. Laboratory results on the Crow are pending.

In 2015 the District submitted a total of 9 dead bird samples. Three of those samples, submitted in late September and October 2015, tested positive for WNV. All 3 were Crows, two from Santa Ynez and one from the Goleta Valley.

The CDPH West Nile Virus Dead Bird Hotline closed down for the winter season on October 15, 2015. However, citizens can still report dead birds at [www.westnile.ca.gov](http://www.westnile.ca.gov). In light of the late season positive birds, the District has made arrangements with CDPH to continue testing approved dead birds through the winter season. The Hotline will resume full operations in spring 2016.

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 laboratory on the U.C. Davis campus where the samples will be analyzed for West Nile Virus.

### Sentinel Chicken Flocks

District personnel are sampling the chicken flocks at Carpinteria, Goleta, Solvang, and Mission Hills once per month during the winter season. In 2015 all samples tested negative for WNV and other mosquito-borne encephalitis viruses. All samples submitted in 2016 to date have also been negative.

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 viruses.

### Live Mosquito-Borne Virus Surveillance

The District did not conduct any mosquito trapping surveys in January 2016. The District submitted 227 sample pools for laboratory analysis in 2015. This is a very representative amount for the fourth year of a severe drought, though far less than the District's record of 529 pools submitted in 2011. Only one pool tested positive for WNV in 2015; a pool of 50 Encephalitis Mosquitoes (*Culex tarsalis*) collected at Lake Los Carneros, Goleta on April 1-2. Live mosquito-borne virus surveillance will resume in spring 2016.

This surveillance technique utilizes battery-powered traps that use dry ice as a source of carbon dioxide 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 U.C. Davis Center for Vector-Borne Diseases at Davis, California where they are analyzed for the presence of live mosquito-borne viruses including WNV.

**NON-NATIVE DISEASE VECTORING MOSQUITO SPECIES**

  <b>ASIAN TIGER MOSQUITO (<i>Aedes albopictus</i>)</b>	 <b>Actual Size</b>	  <b>YELLOW FEVER MOSQUITO (<i>Aedes aegypti</i>)</b>
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The Yellow Fever Mosquito (*Aedes aegypti*) and the Asian Tiger Mosquito (*Aedes albopictus*) are the vectors of not only Zika Virus, but also of Dengue and Chikungunya viruses. *Ae. aegypti*, as its common name indicates, can also vector Yellow Fever. Following a 2011 discovery of an infestation in Los Angeles County, *Ae. albopictus* has now been found in 29 cities in 5 California counties. Since 2013, *Ae. aegypti* has been found in 52 cities in 12 California counties. Both species have been found in Kern and Los Angeles counties. They are **daytime biters** and readily breed in any kind of container that holds water for 10 days or more. *Ae. aegypti* will even breed in standing water indoors (i.e. flower vases). The District plans to step up surveillance for these mosquitoes in 2016.