



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

November 2017

West Nile Virus Activity

Four sentinel chickens from the District's flock at the City of Solvang Wastewater Treatment Plant have tested positive for West Nile virus (WNV) as well as a dead bird from the Santa Ynez Valley and a mosquito pool at the UCSB/Santa Barbara Airport bluffs. The sudden outbreak of WNV could be due to a combination of the October heat wave and the influx of migratory birds into the county. There has been WNV activity in other areas of California, but activity levels are mostly down from 2016. To date 489 human cases (26 fatal) have been confirmed in 26 counties. A total of 505 WNV positive dead birds have been reported from 39 counties along with 3,370 WNV positive mosquito pools from 26 counties. Three hundred and five WNV positive sentinel chickens have been reported from 18 counties. Twenty equine (horse) cases of WNV have been reported in 13 counties. Ventura County has reported one human case, three WNV positive mosquito pools and two WNV positive dead birds all from Simi Valley. San Luis Obispo County has reported six WNV positive dead birds.

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.

St. Louis Encephalitis Virus Activity

In 2017 to date, one human case of St. Louis encephalitis (SLE) has been reported from Kern County. Also a total of 179 SLE positive mosquito pools have been reported from 14 California counties along with 9 sentinel chickens in three counties. All of the SLE positives have been found in hot inland regions. St. Louis encephalitis is a native mosquito-borne virus that is in the Family Flaviviridae (as are West Nile, dengue, Zika, and yellow fever viruses) 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 619 total imported cases of Zika virus into 36 California counties as of December 1, 2017 (508 in 2015-16, 111 in 2017), but no local mosquito transmitted cases. In Mexico in 2017, the highest number of Zika cases has been occurring in central Mexico as opposed to southern Mexico in 2016. 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. Overall the number of Zika cases are down throughout the Americas in 2017. Invasive yellow fever mosquitoes (*Aedes aegypti*) and Asian tiger mosquitoes (*Aedes albopictus*) have now been found in 161 cities and communities in 14 California counties, with Kings and Merced counties recently added to the list. A third species, the Australian backyard mosquito (*Aedes notoscriptus*) appears to be getting established in parts of Los Angeles County and a single specimen has been found in Orange 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 2017 mosquito trapping season has ended. The list below shows the final figures for the 2017 trapping season. The District submitted 221 sample pools of mosquitoes for laboratory analysis in 2017. All tested negative for WNV and other mosquito-borne encephalitis viruses except for **a pool of 17 Southern house mosquitoes (*Culex quinquefasciatus*) collected at the UCSB/Santa Barbara Airport bluff tops on October 26, 2017 that tested positive for WNV**. Live mosquito-borne virus surveillance will resume in spring 2018.

2017 Mosquito Trapping Results

- ▣ South Coast
 - 24 EVS trap surveys, 19 BG-Sentinel trap surveys.
 - 6,163 mosquitoes collected.
 - 117 pools submitted (**1 WNV positive pool**).

- ▣ North County
 - 46 EVS trap surveys, 13 BG-Sentinel trap surveys.
 - 2,602 mosquitoes collected
 - 56 pools submitted.

- ▣ San Luis Obispo County
 - 24 EVS trap surveys, 7 BG-Sentinel trap surveys.
 - 9,650 mosquitoes collected
 - 48 pools submitted.

- ▣ **TOTAL**
 - 94 EVS trap surveys, 39 BG-Sentinel trap surveys.
 - 18,415 mosquitoes collected
 - 221 pools submitted (**1 WNV positive pool**).

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

The District is transitioning from sampling the chicken flocks every two weeks to once per month for the winter season. The flock at the U.S. Forest Service Ranger Station on Paradise Road has been inactivated for the winter. The chickens at that flock were adopted by Forest Service personnel. **Four sentinel chickens from the flock at the City of Solvang's Wastewater Treatment Plant tested positive for WNV in late September 2017**. All chickens from the District's other flocks have been negative in 2017 to date.

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 2017. In October 2017 a yellow-billed magpie collected in the Happy Canyon Road area of the eastern Santa Ynez Valley **tested positive for West Nile Virus**. All other dead birds submitted by the District in 2017 to date have been negative for WNV.

The West Nile Virus Dead Bird Hotline closed down for the winter season on October 13, 2017. Citizens will still be able to report dead birds online at www.westnile.ca.gov. The District has made arrangements with the California Department of Public Health to continue retrieving and sampling approved dead birds through the winter. The Hotline will resume full operation in spring 2018.

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.



YELLOW-BILLED MAGPIE
Pica nuttalli

Yellow-billed magpies are very common in the Santa Ynez Valley, but rarely found in coastal areas of Santa Barbara County. Magpies along with other birds in the family Corvidae (crows, ravens, and jays) are the species most sensitive to West Nile virus infection. Dead corvids are often the first indicators of West Nile virus activity. In October 2017 a yellow-billed magpie found dead in the eastern Santa Ynez Valley north of Lake Cachuma tested positive for West Nile virus.