



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

April 2018

West Nile Virus Activity

No West Nile virus (WNV) activity has been detected in Santa Barbara County in 2018 to date. There has been a total of four WNV positive dead birds in two California counties: two each in Santa Clara and San Mateo Counties. One WNV positive mosquito pool has been reported in San Bernardino County.

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

No St. Louis encephalitis (SLE) virus activity has been detected in California in 2018 to date. SLE activity has never been confirmed in Santa Barbara County. Most SLE cases occur in hot inland areas.

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. Overall the number of Zika cases were down throughout the Americas in 2017. There have been 645 total imported cases of Zika virus into 37 California counties as of April 6, 2018 (508 in 2015-16, 127 in 2017, 10 in 2018), but no local mosquito transmitted cases. In Mexico in 2017, the highest number of Zika cases occurred in central Mexico as opposed to southern Mexico in 2016. Locally acquired cases of Zika have been reported as far north as Ensenada, Baja California, Mexico. Local mosquito transmitted cases of Zika infections have also been reported in southern Florida and southern Texas.

No invasive *Aedes* sp. mosquitoes have been found in Santa Barbara County to date. Invasive yellow fever mosquitoes (*Aedes aegypti*) and Asian tiger mosquitoes (*Aedes albopictus*) have now been found in 197 cities and communities (39 with both) in 14 California counties. No *Ae aegypti* have been detected in Alameda and San Mateo counties in two years, so those counties are no longer considered to be infested. 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/>.

West Nile Virus Dead Bird Submissions

The District submitted one dead bird in April 2018, a crow from Montecito. This was the District's first dead bird submission of the year and it came on April 16, the same day that the Dead Bird Hotline resumed operation for the 2018 season. The crow was 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 dead birds approved for testing 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.

Live Mosquito-Borne Virus Surveillance

April weather improved to the point that mosquito trapping is mostly back on track. A total of 18 mosquito trapping surveys have been conducted in 2018 to date. The results are shown in the table below. Mosquito numbers overall have been very low in both Santa Barbara and San Luis Obispo counties, probably due to the relatively cool spring weather. The only exceptions are some of the breeding sources in Pismo Beach and Oceano. All sample pools submitted to date 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
South Coast						
UCSB/Santa Barbara Airport Bluffs	3/5-6/18	11	13 EVS	0.8	0	N.A.
El Estero Wastewater Plant, Santa Barbara	3/28-29/18	38	10	3.8	2	Negative
El Estero Wastewater Plant, Santa Barbara	3/29-4/4/18	0	3 BG	0	0	N.A.
Lake Los Carneros, Goleta City	4/11-12/18	27	11 EVS	2.5	2	Negative
Andree Clark Bird Refuge, Santa Barbara	4/24-25/18	5	10 EVS	0.5	0	N.A.
UCSB Environmental Health & Safety Bldg.	4/20-27/18	2	1 BG	0.29	0	N.A.
North County						
Orcutt Creek @ Bradley Rd., Orcutt	4/3-4/18	7	4 EVS	1.8	0	N.A.
Orcutt Creek @ Hwy 135, Orcutt	4/3-4/18	5	4 EVS	1.3	0	N.A.
Orcutt Creek @ Broadway, Orcutt	4/3-4/18	15	4 EVS	3.8	1	Negative
San Luis Obispo County						
Oceano Campground, Pismo State Beach	4/9-10/18	297	4 EVS	74.3	3	Negative
North Beach Campground, Pismo State Beach	4/9-10/18	222	3 EVS	74.0	2	Negative
Chumash Park, Pismo Beach City	4/9-10/18	160	5 EVS	32.0	2	Negative
Pismo Creek, Pismo Beach City	4/9-10/18	4	2 EVS	2.0	0	N.A.
Oceano Campground, Pismo State Beach	4/9-20/18	0	1 BG	0	0	N.A.
Pismo Beach City Public Works Yard	4/9-20/18	0	1 BG	0	0	N.A.
Laguna Lake, San Luis Obispo City	4/25-26/18	4	3 EVS	1.3	0	N.A.
Sinsheimer Park, San Luis Obispo City	4/25-26/18	4	3 EVS	1.3	0	N.A.
Islay Park, San Luis Obispo City	4/25-26/18	34	4 EVS	8.5	0	N.A.
Water Treatment Plant, San Luis Obispo City	4/25-26/18	11	3 EVS	3.7	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, 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 2018 sentinel chicken season is now underway. District personnel are obtaining blood samples from the chickens in all five of the District's flocks every two weeks. The five flock locations remain the same: Carpinteria Sanitary District, Goleta Sanitary District, U.S. Forest Service Ranger Station on Paradise Road, Solvang City Wastewater Treatment Plant, and the Mission Hills Community Services District. All flocks now have seven chickens, down from the 10 that were maintained up until a year ago. The experience of many

California mosquito control agencies has indicated that 6-7 chickens are just as likely to detect virus activity as 10. Fewer chickens also means less time and money expended on the sentinel chicken program. All samples submitted to date have tested 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.

