



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

May 2017

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2017 to date. Throughout California, 8 WNV positive dead birds have been reported from 5 counties along with 12 WNV positive mosquito pools from 5 counties. One human case, the year's first, has been confirmed in Kings County. These numbers are down significantly from the same time in 2016.

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.

Zika Virus and Invasive *Aedes* Mosquito Update

The Santa Barbara County Public Health Department has reported a total of nine travel related cases of Zika infection in Santa Barbara County to date. A 10th Zika case is currently being investigated. No invasive *Aedes* sp. mosquitoes have been found in Santa Barbara County to date. There have been 543 imported cases of Zika virus into 36 California counties as of May 23, 2017, but no local mosquito transmitted cases. However, at least one locally acquired case of Zika has recently been reported in Ensenada, Baja California, Mexico. Local mosquito transmitted cases of Zika infections have also been reported in southern Florida and southern Texas. Invasive Yellow fever mosquitoes (*Aedes aegypti*) and Asian tiger mosquitoes (*Aedes albopictus*) have now been found in 131 cities and communities in 12 California counties. A third species, the Australian backyard mosquito (*Aedes notoscriptus*) appears to be getting established in parts of Los Angeles County. Some California vector control districts already report finding live invasive *Aedes* larval activity in 2017. *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

Springtime winds calmed down to the point that normal mosquito trapping was able to be performed in May 2017. Trapping was able to resume in San Luis Obispo County after a winter-long hiatus. As the table below shows, trapping surveys at Lake Los Carneros in Goleta, the UCSB/ Santa Barbara Airport bluffs, Sage Hill Campground on Paradise Rd., Club House Rd. at Vandenberg Village, and Chumash Park in Pismo Beach collected significant numbers of mosquitoes. May is a transition month when the greatest variety of mosquito species are active. Winter and spring species such as the univoltine (one generation per year) Floodwater mosquitoes (*Aedes washinoi*) and California salt marsh mosquitoes (*Aedes squamiger*) along with multivoltine (multiple generations per year) Winter mosquitoes (*Culiseta inornata*) are still very active. *Culex* species (multivoltine) are most active in summer and become more numerous in May.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS^	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
South Coast						
El Estero Wastewater Plant, Santa Barbara	4/24-5/1/17	2	1 BG	0.3	0	N.A.
Lake Los Carneros, Goleta City	5/1-2/17	434	11 EVS	39.5	7	Negative
Andree Clark Bird Refuge, Santa Barbara City	5/9-10/17	12	12 EVS	1.0	1	Negative

Isla Vista Recreation and Parks District	5/9-16/17	5	1 BG	0.7	0	N.A.
UCSB/Santa Barbara Airport Bluffs	5/11-12/17	370	12 EVS	30.8	9	Negative
Isla Vista Recreation and Parks District	5/16-26/17	2	1 BG	0.2	0	N.A.
Hollister Ave. x San Antonio Rd., Goleta Valley	5/24-25/17	5	3 EVS	1.7	0	N.A.
Hollister Ave. x San Antonio Rd., Goleta Valley	5/24-26/17	2	2 BG	0.5	0	N.A.
North County						
Sage Hill Campground, Santa Ynez Valley	5/15-16/17	122	4 EVS	30.5	3	Pending
Santa Ynez River @ Fjord Dr., Solvang	5/15-16/17	71	4 EVS/1 BG	14.2	2	Pending
Riverview Park, Buellton	5/15-16/17	18	3 EVS	6.0	0	N.A.
Alamo Pintado Creek, Los Olivos	5/15-16/17	16	3 EVS/1 BG	4.0	0	N.A.
Bailey Wetland, Lompoc City	5/22-23/17	66	4 EVS/1 BG	13.2	3	Pending
S. Ynez River @ Floradale Ave., Lompoc City	5/22-23/17	84	4 EVS	21.0	3	Pending
Club House Rd., Vandenberg Village	5/22-23/17	129	3 EVS	43.0	3	Pending
E. end of Burton Mesa Rd., Mission Hills	5/22-23/17	22	3 EVS/1 BG	5.5	0	N.A.
San Luis Obispo County						
Pismo Beach City Public Works Yard	4/20-5/4/17	0	1 BG	0	0	N.A.
Pismo State Beach Maint. Yard, Oceano	4/20-5/4/17	8	1 BG	0.5	0	N.A.
James Way x Equestrian Way, Arroyo Grande	5/3-4/17	96	4 EVS	24.0	2	Negative
Corbett Creek @ Tally Ho Rd., Arroyo Grande	5/3-4/17	90	4 EVS	22.5	4	Negative
Chumash Park, Pismo Beach City	5/3-4/17	103	3 EVS	34.3	3	Negative
Pismo Creek, Pismo Beach City	5/3-4/17	39	3 EVS	13.0	1	Negative
Sinsheimer Park (tennis courts), SLO City	5/24-25/17	19	4 EVS	4.8	0	N.A.
Sinsheimer Park (near YMCA), SLO City	5/24-25/17	19	2 EVS	9.5	0	N.A.
Damon Garcia Park, San Luis Obispo City	5/24-25/17	45	5 EVS	9.0	1	Pending
Johnson Ave. x Fixlini St., San Luis Obispo City	5/24-25/17	2	1 EVS	2.0	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 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

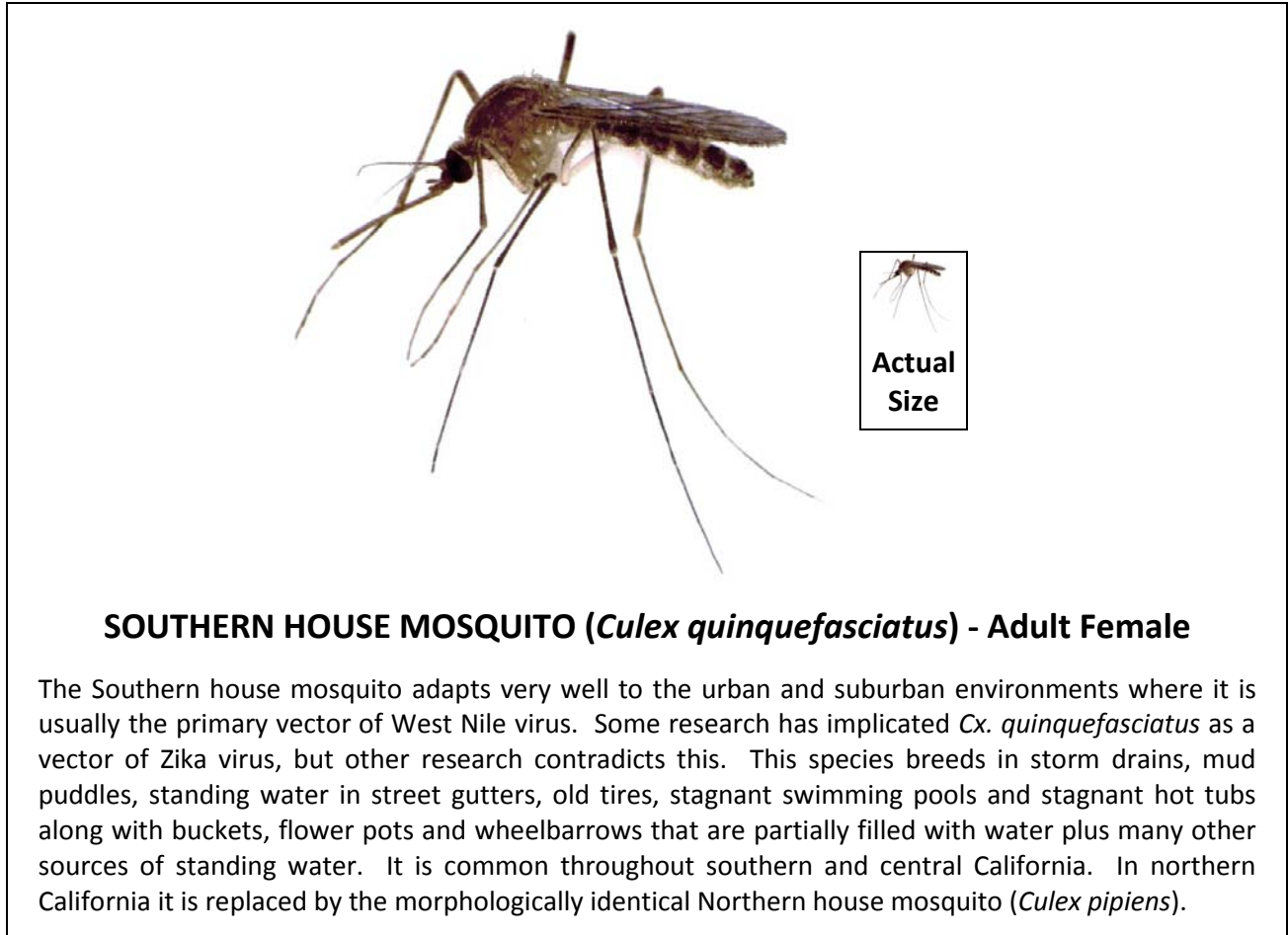
District personnel are obtaining samples from each chicken in the five sentinel flocks every two weeks. All samples submitted in 2017 to date have been negative for WNV and other mosquito-borne encephalitis viruses.

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.

West Nile Virus Dead Bird Submissions

The District retrieved and sampled two dead birds, both Yellow-billed magpies, found in Los Olivos at the same address at the same time. Both Magpies tested 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.



SOUTHERN HOUSE MOSQUITO (*Culex quinquefasciatus*) - Adult Female

The Southern house mosquito adapts very well to the urban and suburban environments where it is usually the primary vector of West Nile virus. Some research has implicated *Cx. quinquefasciatus* as a vector of Zika virus, but other research contradicts this. This species breeds in storm drains, mud puddles, standing water in street gutters, old tires, stagnant swimming pools and stagnant hot tubs along with buckets, flower pots and wheelbarrows that are partially filled with water plus many other sources of standing water. It is common throughout southern and central California. In northern California it is replaced by the morphologically identical Northern house mosquito (*Culex pipiens*).