



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

September 2016

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2016 to date. 276 confirmed human cases (9 fatal) of WNV have been reported from 28 California counties. 1,288 WNV positive dead birds have been reported from 33 California counties. A total of 3,360 WNV positive mosquito pools have been reported from 30 counties along with 301 WNV positive sentinel chickens from 74 flocks in 17 counties. Ventura County has reported two human cases and 32 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

California's first human case of St. Louis Encephalitis (SLE) since 1997 has been confirmed in Sacramento County. A total of 170 mosquito pools in 8 California counties and 3 sentinel chickens in two flocks in two counties have tested positive for SLE. SLE is a native mosquito-borne virus that can cause symptoms that are very similar to WNV. Both viruses are in the family Flaviviridae.

Zika Virus and Invasive *Aedes* Mosquito Update

The Santa Barbara County Public Health Department has reported five travel related cases of Zika infection in Santa Barbara County to date. There have been other imported cases of Zika virus into California, but no local mosquito transmitted cases. In south Florida, a local mosquito transmitted case of Dengue virus has been confirmed along with local mosquito transmitted cases of Zika infections. Invasive *Aedes* spp. mosquitoes have now been found in at least 110 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 32 mosquito trapping surveys in September 2016. Trapping has also begun in San Luis Obispo County. The surveys include the use of both carbon dioxide baited Encephalitis Virus Surveillance (EVS) traps and the human scented BG-Sentinel traps. The results of the surveys are shown in the table below. The District has submitted 183 sample mosquito pools in 2016 to date. All pools tested have been negative for WNV and other mosquito-borne viruses. Laboratory results for more pools are pending.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS [^]	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
W. Cabrillo Blvd., Santa Barbara City	8/31-9/1/16	0	2 EVS	0	0	N.A.
San Pascual St., Santa Barbara City	8/31-9/1/16	3	2 EVS	1.5	0	N.A.
Maria Ygancio Creek, N. S.Marcos Rd, Goleta	8/31-9/1/16	3	4 EVS	0.8	0	N.A.
100 block of N. San Marcos Rd., Goleta Valley	8/31-9/7/16	0	1 BG	0	0	N.A.

4900 block of Via Parva, Goleta Valley	8/31-9/7/16	1	1 BG	0.1	0	N.A.
600 block of Coronel Pl., Santa Barbara City	8/31-9/7/16	0	1 BG	0	0	N.A.
1400 block of Alvin Ave., Santa Maria City	8/31-9/7/16	1	1 BG	0.1	0	N.A.
1000 block of Hal Ave., Santa Maria City	8/31-9/7/16	0	1 BG	0	0	N.A.
Laguna Lake Park, San Luis Obispo	9/6-7/16	9	3 EVS	3.0	0	N.A.
SLO Water Treatment Plant, San Luis Obispo	9/6-7/16	301	3 EVS	100.3	6	Negative
Oceano Campground, Oceano	9/6-7/16	148	3 EVS	49.3	3	Negative
Meadow Crk/N. Beach Camgr, Grover Beach	9/6-7/16	38	3 EVS	12.7	1	Negative
Andree Clark Bird Refuge, Santa Barbara	9/8-9/16	0	12 EVS	0	0	N.A.
Santa Barbara Zoo/Bird Refuge	9/8-15/16	0	1 BG	0	0	N.A.
Club House Rd., Vandenberg Village	9/12-13/16	98	3 EVS	32.7	2	Negative
East end of Burton Mesa Blvd., Mission Hills	9/12-13/16	28	3 EVS/1 BG	7.0	1	Negative
Bailey Wetland, Lompoc City	9/12-13/16	11	4 EVS/1 BG	2.2	0	N.A.
Santa Ynez River @ Floradale Ave., Lompoc	9/12-13/16	21	4 EVS	5.3	1	Negative
800 block of Vista Del Arroyo, S. Luis Obispo	9/6-21/16	0	1 BG	0	0	N.A.
1100 block of Pacific Blvd., Oceano	9/6-21/16	0	1 BG	0	0	N.A.
Perfumo Creek, San Luis Obispo	9/21-22/16	13	4 EVS	3.3	0	N.A.
Chumash Park, Pismo Beach	9/21-22/16	48	3 EVS	16.0	2	Negative
Pismo Ecological Reserve, Pismo Beach	9/21-22/16	20	3 EVS	6.7	0	N.A.
IVRPD Lath House, Isla Vista	9/15-22/16	4	1 BG	0.6	0	N.A.
UCSB Santa Ynez Housing, Goleta	9/15-22/16	1	1 BG	0.1	0	N.A.
6800 block of Phelps Rd., Goleta City	9/15-27/16	1	1 BG	0.1	0	N.A.
Jalama Beach County Park	9/27-28/16	~4,841	10 EVS	~484.1	15	Pending
IVRPD Lath House, Isla Vista	9/26-30/16	0	1 BG	0	0	N.A.
UCSB Main Campus	9/26-30/16	2	1 BG	0.4	0	N.A.
5700 block of Via Real, Carpinteria City	9/27-30/16	0	1 BG	0	0	N.A.
Orcutt Creek @ Broadway, Orcutt	9/29-30/16	40	6 EVS/1 BG	5.7	0	N.A.
Lake Marie Subdivision, Orcutt	9/29-30/16	291	7 EVS	41.6	6	Pending

* 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 are taking samples from all five sentinel chicken flocks every two weeks. 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 September 2016. All dead bird samples submitted by the District in 2016 to date have been 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.



LOUSE FLIES - Diptera: Hippoboscidae

Louse Flies are a bizarre family of true flies that superficially resemble lice or ticks, but with wings. Some species are wingless. Adults are parasitic (blood feeding) on mammals and birds and once attached to a host they remain on that one host for life. Reproduction is by pupiparity. That is, the larvae develop inside of a uterine pouch in the mother and are fed by glandular secretions from what are analogous to mammary glands. After the larva pupates, the female fly glues the pupa to the hairs or feathers of the host. The two species illustrated here occasionally turn up in the District's CO₂ mosquito traps; the larger specimen at Lake Los Carneros, Goleta on August 4, 2016.