



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

October 2016

Rabies in Santa Barbara County

The Santa Barbara County Public Health Department has announced that a bat from Santa Barbara County tested positive for rabies in late October 2016. Also the California Department of Public Health issued the 2015 state report on rabies noting an increase in rabies over 2014 and an increase over the annual average of rabies cases in the previous ten years (2005 – 2014). One of the 2015 rabies cases was also in a bat from Santa Barbara County.

Statewide, rabies was confirmed in 230 animals last year across 40 different counties in California, including Santa Barbara County. Of these confirmed rabies cases 99% were in wild animals. Bats (198, 86.8%) were the wild animal most frequently reported rabid, followed by skunks (29, 12.7%). Rabies is also occasionally detected in other wild animals such as raccoons and foxes. Rabies is rarely identified in domestic animals such as dogs and cats, but can occur if they come into close contact with the saliva of a rabid wild animal.

West Nile Virus Activity

No West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2016 to date. 370 confirmed human cases (16 fatal) of WNV have been reported from 29 California counties. 1,340 WNV positive dead birds have been reported from 33 California counties. A total of 3,481 WNV positive mosquito pools have been reported from 31 counties along with 335 WNV positive sentinel chickens from 81 flocks in 19 counties. Ventura County has reported two human cases and 34 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

One human case of St. Louis Encephalitis (SLE) has been confirmed in Sacramento County. 179 mosquito pools in 8 California counties and 4 sentinel chickens in 3 flocks in 2 counties have tested positive for SLE. The majority of the mosquito pools have been in Kern and Riverside counties. 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 six 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 21 mosquito trapping surveys in October 2016, 10 of them 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 227 sample mosquito pools in 2016 to date. All pools tested have been negative for WNV and other mosquito-borne viruses. These are likely the final trapping surveys for 2016.

LOCATION	DATE	NUMBER of MOSQUITOES	NUMBER of TRAPS [^]	MOSQUITOES PER TRAP NIGHT*	POOLS SUBMITTED	RESULT
South Coast						
2900 block of De La Vina St., Santa Barbara	9/28-10/4/16	0	1 BG	0	0	N.A.
Westmont College, Montecito	10/11-12/16	3	5 EVS	0.6	0	N.A.
Westmont College, Montecito	10/11-18/16	0	1 BG	0	0	N.A.
Birnam Wood, Montecito	10/11-18/16	0	1 BG	0	0	N.A.
El Estero Wastewater Plant, Santa Barbara	10/13-14/16	38	11 EVS	3.5	1	Negative
IVRPD Lath House, Isla Vista	10/21-11/1/16	0	1 BG	0	0	N.A.
North County						
Sage Hill Cmpgrnd., upper Santa Ynez Valley	10/24-25/16	56	4 EVS	14.0	1	Negative
Santa Ynez River @ Fjord Dr., Solvang	10/24-25/16	11	4 EVS/1 BG	2.2	0	N.A.
Riverview Park, Buellton	10/24-25/16	13	4 EVS/1 BG	2.6	0	N.A.
Alamo Pintado Creek, Los Olivos	10/24-25/16	0	3 EVS/1 BG	0	0	N.A.
Jalama Beach County Park	10/26-27/16	~1,011	10 EVS	~101.1	11	Negative
San Luis Obispo County						
1000 block of Isabella Way, San Luis Obispo	9/21-10/4/16	1	1 BG	0.1	0	N.A.
00 block of La Garza, Pismo Beach	9/21-10/4/16	5	1 BG	0.4	0	N.A.
Oak Park Plaza, Arroyo Grande	10/4-5/16	69	4 EVS	17.3	2	Negative
Corbett Creek, Arroyo Grande	10/4-5/16	234	4 EVS	58.5	2	Negative
Lake Lopez Marina, Arroyo Grande	10/4-5/16	2	4 EVS	0.5	0	N.A.
1000 block of San Adriano Dr., S. Luis Obispo	10/4-19/16	2	1 BG	0.1	0	N.A.
200 block of Tally Ho Rd., Arroyo Grande	10/4-19/16	2	1 BG	0.1	0	N.A.
Sinsheimer Park, San Luis Obispo	10/19-20/16	8	3 EVS	2.7	0	N.A.
Pismo Beach Golf Course, Grover Beach	10/19-20/16	236	3 EVS	78.7	4	Negative
Black Lake, Arroyo Grande	10/19-20/16	33	4 EVS	8.3	2	Negative

* 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.

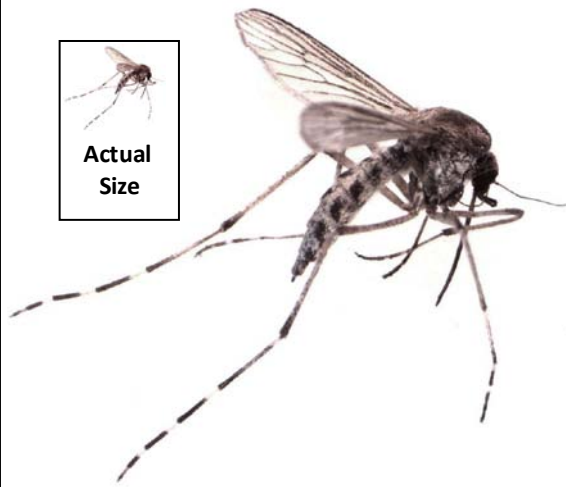
Samples of blood are collected from each chicken on strips of filter paper and dried overnight. They are then submitted to the California Department of Public Health Vector-Borne Disease Laboratory at Richmond, California where they are analyzed for antibodies to WNV and other mosquito-borne encephalitis viruses.

West Nile Virus Dead Bird Submissions

The District did not submit any dead birds in October 2016. All dead bird samples submitted by the District in 2016 to date have been negative for WNV. The West Nile Virus Dead Bird Hotline closed for the winter season on October 14, 2016. The public can still report dead birds online at www.westnile.ca.gov. The District has made arrangements with CDPH to continue testing approved dead birds through the winter. The hotline will resume operations in spring 2017.

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.

IRRIGATED PASTURE MOSQUITO (*Aedes nigromaculis*) - Adult Female



This mosquito species is not normally found along the coast. A single specimen, illustrated here, was trapped at the Pismo Beach Golf Course, San Luis Obispo County on October 19-20, 2016, but probably hitchhiked in a car or truck from the Central Valley. Over the years a couple of other specimens have been trapped near the Santa Barbara waterfront, an area frequented by vacationers from the Central Valley. *Ae. nigromaculis* is a multivoltine (two or more generations per year) floodwater species. That is, females lay their eggs on wetland vegetation or in a completely dry wetland. The eggs all hatch out simultaneously when the wetland is re-flooded by rain or irrigation.