



MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

DISEASE SURVEILLANCE REPORT

April 2015

West Nile Virus Activity

A sample pool of mosquitoes collected at Lake Los Carneros, City of Goleta on April 1-2, 2015 tested **positive** for West Nile Virus (WNV). This is the earliest in the season that WNV activity has been detected in Santa Barbara County. It is also the first WNV positive pool of live mosquitoes found in Santa Barbara County since 2006 and the first at Lake Los Carneros since 2005. In addition, it was only the second WNV positive mosquito pool reported in all of California in the 2015 season. Throughout California, a total of 9 WNV positive dead birds have been collected in 4 counties along with 5 WNV positive mosquito pools from 4 counties.

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.

Yellow Fever Mosquito Update

Orange County has become the latest county to detect Yellow Fever Mosquito (*Aedes aegypti*). The find occurred in the City of Anaheim. This is the 9th California county to find *Ae. aegypti*, all since summer 2013.

Live Mosquito-Borne Virus Surveillance

The District conducted 14 mosquito trapping surveys in April 2015. The results are shown in the table below. As mentioned above, a pool of 50 Encephalitis Mosquitoes (*Culex tarsalis*) collected at Lake Los Carneros, Goleta on April 1-2 tested positive for WNV.

| LOCATION | DATE | NUMBER of MOSQUITOES | NUMBER of TRAPS | MOSQUITOES PER TRAP NIGHT* | POOLS SUBMITTED | RESULT |
|--|-------------|----------------------|-----------------|----------------------------|-----------------|------------|
| Lake Los Carneros, Goleta | 4/1-2/15 | 210 | 10 | 21.0 | 5 | 1 Positive |
| UCSB West Campus | 4/1-2/15 | 588 | 12 | 49.0 | 13 | Negative |
| Shoreline Dr./More Mesa, Goleta Valley | 4/9-10/15 | 787 | 12 | 65.6 | 15 | Negative |
| UCSB/Santa Barbara Airport Bluffs | 4/13-14/15 | 458 | 13 | 35.2 | 11 | Negative |
| Lake Marie Subdivision, Orcutt | 4/15-16/15 | 42 | 8 | 5.3 | 2 | Negative |
| Orcutt Creek @ Bradley Rd., Orcutt | 4/15-16/15 | 13 | 4 | 3.3 | 0 | N.A. |
| Orcutt Creek @ Broadway, Orcutt | 4/15-16/15 | 53 | 7 | 7.6 | 1 | Negative |
| Club House Rd., Vandenberg Village | 4/20-21/15 | 65 | 4 | 16.3 | 2 | Negative |
| E. end of Burton Mesa Blvd., Mission Hills | 4/20-21/15 | 18 | 3 | 6.0 | 1 | Negative |
| Bailey Wetland, Lompoc | 4/20-21/15 | 86 | 4 | 21.5 | 2 | Negative |
| Santa Ynez River @ Floradale Ave., Lompoc | 4/20-21/15 | 45 | 4 | 11.3 | 1 | Negative |
| Lake Los Carneros, Goleta | 4/23-24/15 | 130 | 12 | 10.8 | 4 | Negative |
| El Estero Wastewater Plant, Santa Barbara | 4/28-29/15 | 284 | 14 | 20.3 | 6 | Pending |
| Andree Clark Bird Refuge, Santa Barbara | 4/30-5/1/15 | 16 | 12 | 1.3 | 1 | Pending |

*Mosquitoes Per Trap Night = Number of Mosquitoes ÷ (Number of Traps x 1 Night)

This surveillance technique utilizes battery-powered traps that use dry ice as a source of carbon dioxide 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 U.C. Davis Center for Vector-Borne Diseases at Davis, California where they are analyzed for the presence of live mosquito-borne viruses including WNV.

Sentinel Chicken Flocks

District personnel are obtaining blood samples from the District's 5 sentinel chicken flocks every two weeks. All samples have tested negative for WNV and other mosquito-borne encephalitis viruses 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 viruses.

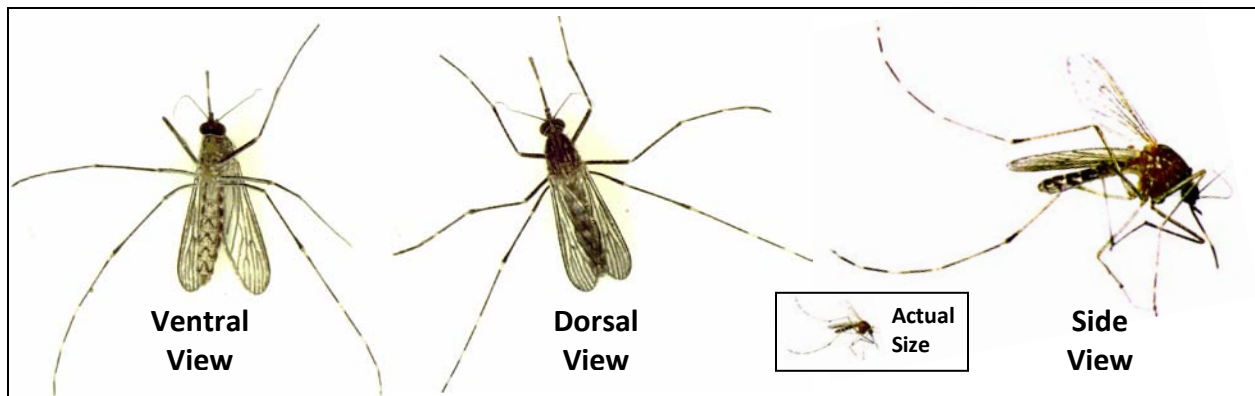
West Nile Virus Dead Bird Submissions

The District did not submit any dead birds in April 2015. The California Department of Public Health's WNV Dead Bird Hotline has been back in full operation since April 15, 2015. The District will be picking up dead birds countywide in 2015.

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 U.C. Davis Center for Vector-Borne Diseases where the samples will be analyzed for West Nile Virus.

More Ticks with *Rickettsia*

Several Pacific Coast Ticks (*Dermacentor occidentalis*) collected on January 22, 2015 tested **positive** for Rickettsial organisms. Three of 31 ticks collected at Romero Canyon, Montecito and two of 7 from the Snyder Trail, upper Santa Ynez Valley tested positive for *Rickettsia phillipi*. *R. phillipi* is a known human pathogen, although only one human case has been documented in Southern California. The symptoms of *R. phillipi* are similar to Rocky Mountain Spotted Fever (caused by *Rickettsia rickettsii*). Three ticks from Romero Canyon also tested positive for *Rickettsia rhipicephali* which is not known to be a human pathogen.



ENCEPHALITIS MOSQUITO (*Culex tarsalis*) - Adult Female

A pool of 50 female Encephalitis Mosquitoes was responsible for the West Nile Virus positive pool at Lake Los Carneros, Goleta on April 2, 2015. This mosquito species is common throughout California and western North America. Wherever it is found it is the single most serious vector of West Nile Virus and other mosquito-borne encephalitis viruses. Adult females feed on birds and mammals including humans. Viruses readily replicate in their salivary glands. Immature stages develop in fresh and brackish water wetlands. In 2005 and 2006, most of the West Nile Virus positive mosquito pools collected in the Goleta Valley were of *Culex tarsalis*. The WNV positive pool collected in Pismo Beach in 2013 was *Cx. tarsalis* as well.