



## MOSQUITO and VECTOR MANAGEMENT DISTRICT of Santa Barbara County

# DISEASE SURVEILLANCE REPORT

October 2014

### West Nile Virus Activity

A Western Scrub Jay from Santa Ynez and a Crow from Solvang have tested **positive** for West Nile Virus (see below). This is the first time West Nile Virus (WNV) activity has been detected in Santa Barbara County in 2014. Infection rates of mosquitoes with WNV in California have been at the highest levels since the disease arrived in 2003. As of October 31, 2014, 705 confirmed human cases (23 fatal) have been documented from 31 California counties. A total of 2,390 dead birds from 36 counties have tested positive for the disease. 3,309 WNV positive mosquito pools have been reported from 30 counties. A total of 433 WNV positive sentinel chickens from 95 flocks have been reported from 23 counties. Very high levels of WNV have been detected in Los Angeles, Orange, and Santa Clara Counties. One human case and 7 dead birds have been reported from Ventura County, mostly from the western part of the county. A horse case of WNV has been confirmed in northern San Luis Obispo County.

Statistics for California WNV activity can be found online at [www.westnile.ca.gov](http://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](http://www.cdc.gov).

### Yellow Fever Mosquito found in Los Angeles and San Diego Counties

The Greater Los Angeles County Vector Control District has reported finding Yellow Fever Mosquitoes (*Aedes aegypti*) in the Los Angeles County communities of Commerce and Pico Rivera. Two more specimens were collected at the Naval Base in San Diego. *Ae. aegypti* has previously been found in Fresno, Madera, and San Mateo Counties in summer 2013 and in Tulare and Kern Counties in summer 2014. Los Angeles County now has infestations of 3 species of exotic, invasive mosquitoes following the discovery of the Asian Tiger Mosquito (*Aedes albopictus*) in 2011 and the Australian Backyard Mosquito (*Aedes notoscriptus*) in summer 2014.

### West Nile Virus Dead Bird Submissions

The District submitted samples from 3 dead birds in October 2014, two Western Scrub Jays from Santa Ynez and Buellton and a Crow from Solvang. **The Jay from Santa Ynez and the Crow from Solvang both tested positive for WNV.** The Jay from Buellton was negative. This is the first indication of WNV activity in Santa Barbara County in 2014. In response, the District is stepping up inspection and treatment of possible mosquito breeding sources in the community of Santa Ynez.

The California Department of Public Health's (CDPH) West Nile Virus Dead Bird Hotline has shut down for the winter season as of October 15, 2014. However, in light of the District's recent (and unusually late season) positive results, the District has made arrangements with CDPH to continue submitting samples from dead birds that are reported to the CDPH's WNV website ([www.westnile.ca.gov](http://www.westnile.ca.gov)) through fall and winter.

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](http://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.

### Live Mosquito-Borne Virus Surveillance

District staff conducted 9 live mosquito trapping surveys during the month of October 2014. The results are shown in the table below. Trapping surveys that took place in Santa Ynez were in response to the WNV

positive dead bird collected there. The surveys revealed very minimal mosquito activity in Santa Ynez. The District has submitted 318 mosquito sample pools for laboratory analysis in 2014 to date. All have tested negative for WNV and other mosquito-borne viruses.

| LOCATION                                   | DATE        | NUMBER of MOSQUITOES | NUMBER of TRAPS | MOSQUITOES PER TRAP NIGHT* | POOLS SUBMITTED | RESULT   |
|--|-------------|----------------------|-----------------|----------------------------|-----------------|----------|
| Jalama Creek, Jalama Beach County Park     | 10/1-2/14   | 296                  | 12              | 24.7                       | 5               | Negative |
| UCSB/Santa Barbara Airport Bluffs          | 10/8-9/14   | 280                  | 12              | 23.3                       | 5               | Negative |
| Orcutt Creek @ Bradley Rd., Orcutt         | 10/13-14/14 | 7                    | 3               | 2.3                        | 0               | N.A.     |
| Orcutt Creek @ Broadway, Orcutt            | 10/13-14/14 | 13                   | 5               | 2.6                        | 0               | N.A.     |
| Leroy Park, Guadalupe                      | 10/13-14/14 | 12                   | 7               | 1.7                        | 0               | N.A.     |
| Santa Ynez County Park, Santa Ynez         | 10/28-29/14 | 1                    | 3               | 0.3                        | 0               | N.A.     |
| Santa Ynez River @ Refugio Rd., Santa Ynez | 10/28-29/14 | 19                   | 3               | 6.3                        | 0               | N.A.     |
| Alamo Pintado Creek, Solvang               | 10/28-29/14 | 6                    | 4               | 1.5                        | 0               | N.A.     |
| Alamo Pintado Creek, Los Olivos            | 10/28-29/14 | 8                    | 3               | 2.7                        | 0               | N.A.     |

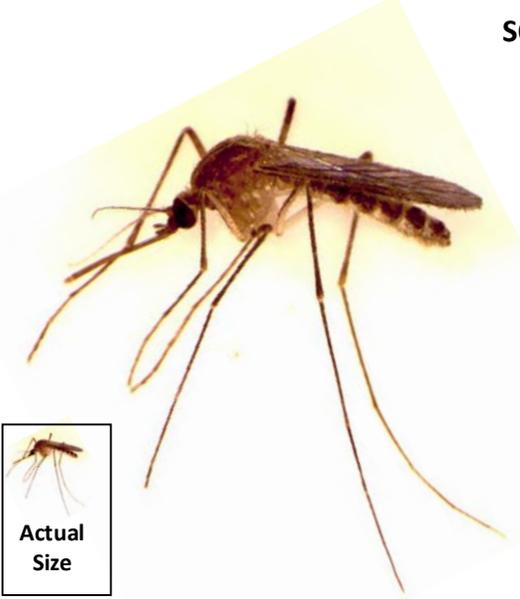
\*Mosquitoes Per Trap Night = Number of Mosquitoes ÷ (Number of Traps x 1 Night)

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 staff is collecting blood samples from all 5 sentinel chicken flocks every two weeks. All samples have tested negative for WNV and other mosquito-borne viruses in 2014 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.



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

The Southern House Mosquito adapts very well to the urban and suburban environments where it is usually the primary vector of West Nile Virus. Adult females readily feed on birds and mammals and may be the cause of the recent WNV positive birds in the Santa Ynez Valley. It 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. This species is common throughout southern and central California. In northern California it is replaced by the morphologically identical Northern House Mosquito (*Culex pipiens*).