

VECTOR CONTROL DISTRICT COUNTY OF SANTA CLARA



Operations and Surveillance Report

OCTOBER 2019

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DON'T LET THE BED BUGS BITE

Fall months make bed bugs more active.

Prevent bringing bed bugs home by taking the following steps:

- Inspect mattresses, headboards, and other areas marked in red in the graphic below
- Check suitcase and belongings carefully before leaving
- Wash and dry clothes in the hottest setting when you arrive home

Visit SCCVector.org for more information.



MESSAGE FROM THE MANAGER



Nayer Zahiri
County of Santa Clara
Vector Control District Manager

Cold weather may be approaching and mosquito activity may be slowing down, but there are other vectors that remain active during fall and winter time. The blacklegged tick has four life stages (egg, larva, nymph, and adult) with each stage feeding on a different host. Eggs are laid in late spring and larvae hatch during the summer, feeding on birds and small birds. The larvae then turn into nymphs. Tick larvae and nymphs have the highest potential to become infected with tick-borne pathogens and infect humans, however, it is important to also prevent adult ticks from biting.

In the fall, tick nymphs molt into adults. During this time and warm winter days, adults seek larger mammals such as dogs and humans as hosts. Adult ticks can survive a winter's frost and will return to being active as soon as it is slightly above freezing temperatures.

If you are active outdoors during fall and winter time, remember to use closed-toe shoes, long socks, pants, and long sleeves. The lighter the color of the clothes, the easier it is to spot attached ticks. Remember to also protect your children and pets, and always inspect them during and after outdoor activity.

Visit SCCVector.org for a full tick prevention checklist.

Sincerely,

Nayer Zahiri



SERVICES AVAILABLE

The County of Santa Clara Vector Control District is committed to protecting the public from vectors capable of transmitting diseases or creating a nuisance.

The services listed below are available for free to the public in Santa Clara County

- Home inspections and advice for rodent infestations and/or wildlife activity.
- Insect identification and confirmation letter.
- Consultations for bed bug abatement.
- Advice, and/or control measures for mosquitoes, rodents, wildlife, and miscellaneous invertebrates (ticks, cockroaches, bees, fleas, flies, and others).
- Yellowjacket and wasp control/nest removal in public areas.
- Dead bird pickup and testing for West Nile virus.
- Mosquitofish to control mosquito populations available for pick-up
- K-12 educational presentations and hands-on activities tailored for individual classroom settings or school assemblies.
- Educational presentations for homeowner associations, organizations, businesses, civic groups, and other interested parties.
- Educational booths for community, corporate, or school events.
- Informational material on all vectors and vector-borne diseases.



A VECTOR is any animal or insect that can transmit diseases to animals or people.

OPERATIONS REPORT DATA

SEPTEMBER UPDATES



The District’s staff checks and treats mosquito larvae in flooded street stormwater catch basins, curbs, naturally breeding sources, and ponds.

These sites hold standing water due to rainfall or urban runoff from domestic water usage.

Stagnant water in these areas, and in neglected swimming pools, can breed mosquitoes that can carry dangerous human diseases like West Nile virus.

The County of Santa Clara Vector Control District actively monitors such locations to prevent these local nuisances from emerging and potentially spreading diseases.



Map 1. Staff inspected 7,031 catch basins and treated 246 that were found to contained mosquito larvae.



OPERATIONS REPORT DATA



Map 2. 18 of 38 inspected curbs were treated to control mosquito breeding.



Map 3. Staff inspected 141 reported pools and treated 6 that were breeding mosquitoes.

OPERATIONS REPORT DATA



Map 4. Inspected 289 different locations, including man-made habitats such as ponds, creeks, and marshes, treating 84 that were breeding mosquitoes.



Map 5. Delivered 51 mosquitofish during 9 service requests.

WEST NILE VIRUS SURVEILLANCE

ADULT MOSQUITO SURVEILLANCE

In October, the District set four types of mosquito traps throughout 12 cities to monitor mosquito abundance. Traps included carbon dioxide traps, New Jersey Light Traps (NJLT), BGSentinel traps, and Modago traps.

The highest female mosquito counts were in Gilroy (Figure 1), with the carbon dioxide traps yielding the greatest amount of mosquitoes (Figure 2). A total of eight mosquito species were detected throughout all traps, with the highest species being the house mosquito, scientifically known as *Culex pipiens* (Figure 3).

Figure 1.

CITIES	TOTAL FEMALES
Gilroy	107
San Jose	42
Saratoga	34
Los Gatos	18
San Martin	11
Unincorporated/ anonymous calls	8
Palo Alto	6
Cupertino	5
Los Altos	3
Campbell	3
Santa Clara	2
Sunnyvale	0
Milpitas	0
Mountain View	0
TOTAL	239

Figure 2.

TRAP TYPE	TOTAL FEMALES
CO2	147
NJLT	88
BGSENTINEL	2
MODAGO	2
TOTAL	239

Figure 3.

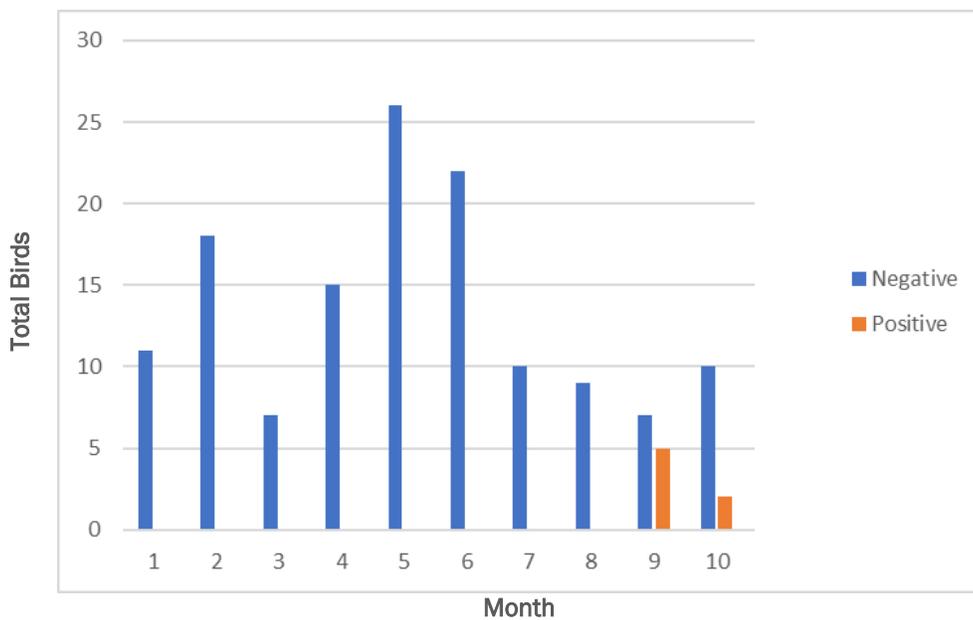
MOSQUITO SPECIES	TOTAL
<i>Culex pipiens</i> (common house mosquito)	94
<i>Culiseta incidens</i> (cool weather mosquito)	53
<i>Culiseta inornate</i> (winter marsh mosquito)	48
<i>Culex tarsalis</i> (western encephalitis mosquito)	35
<i>Culex erythrothorax</i> (tule mosquito)	3
<i>Anopheles franciscanus</i> (common wetland species)	3
<i>Aedes dorsalis</i> (summer salt marsh mosquito)	2
<i>Culex stigmatosoma</i> (banded foul water mosquito)	1
TOTAL	239

WEST NILE VIRUS SURVEILLANCE

DEAD BIRD PROGRAM

During October, twelve birds were sampled for arbovirus (viruses transmitted by arthropods such as mosquitoes). There were two positive West Nile virus (WNV) detections, including one American crow in San Jose and one songbird in Campbell. Follow up tests for mosquitoes in the area confirmed no WNV positive mosquitoes. So far in 2019, there have been eight positive birds out of 145 sampled. Positive detections began in September and continued through October. The District urges the public to report dead birds, as they could be an early sign of WNV activity. Dead birds can be reported by calling the District office at (408) 918-4770 or by submitting a service request at SCCVector.org.

BIRD SPECIES	TOTAL
American crow	7
Hermit thrush	1
Northern flicker	1
Unknown - songbird	1
Unknown - hawk	1
White-crowned sparrow	1
TOTAL	12



STATE WIDE

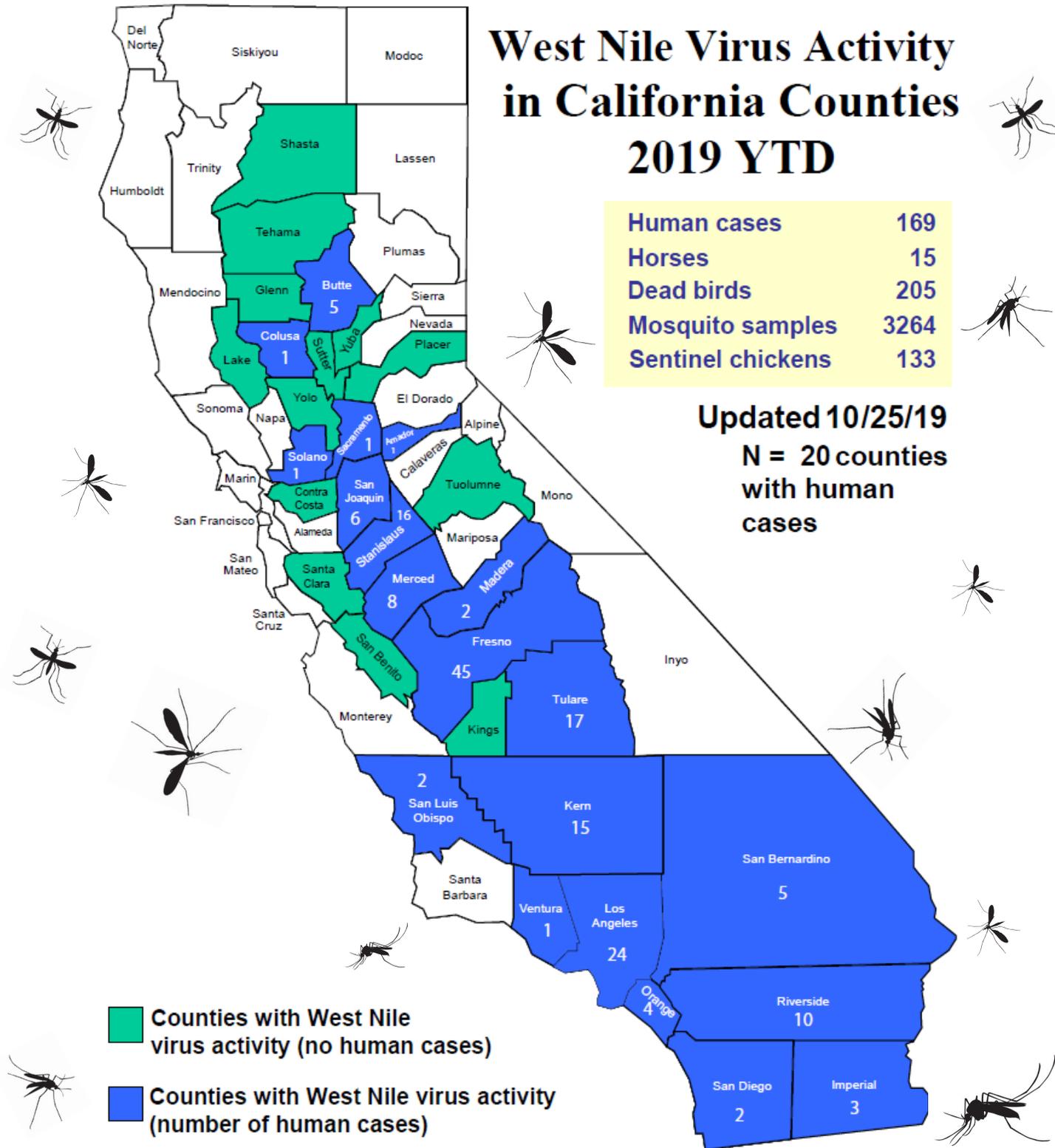
As of October, there were a total of 33 counties with WNV activity in 2019. Of the 33 counties, 20 had a combined total of 169 human cases, including Butte, Colusa, Solano, Sacramento, Amador, and San Joaquin. The remaining 13 counties with WNV activity but no human cases, include Shasta, Tehama, Glenn, Lake, Yolo, Sutter, and Contra Costa.

WEST NILE VIRUS SURVEILLANCE IN CALIFORNIA COUNTIES

West Nile Virus Activity in California Counties 2019 YTD

Human cases	169
Horses	15
Dead birds	205
Mosquito samples	3264
Sentinel chickens	133

Updated 10/25/19
N = 20 counties
with human
cases



MURINE TYPHUS PROGRAM

NORWAY RAT MONITORING

Murine typhus is a disease caused by the bacterium *Rickettsia typhi* and possibly *Rickettsia felis*, and is transmitted through the bite or feces of infected fleas. Infection occurs when infected flea feces are scratched into the bite site or skin openings, through the eyes, or are inhaled, entering the person's blood stream and leading to infection. Small mammals such as opossums and rodents can be a reservoir for infected fleas.

The Vector Control District monitors for this disease by collecting Norway rats, removing the ectoparasites, and testing them for presence of murine typhus. In October, Norway rats were sampled from the Newby Island landfill facility in Milpitas, yielding 14 rats in 75 traps. Cat fleas (*Ctenocephalides felis*) were recovered from two separate rats, and are awaiting to be tested for murine typhus and related rickettsial organisms.



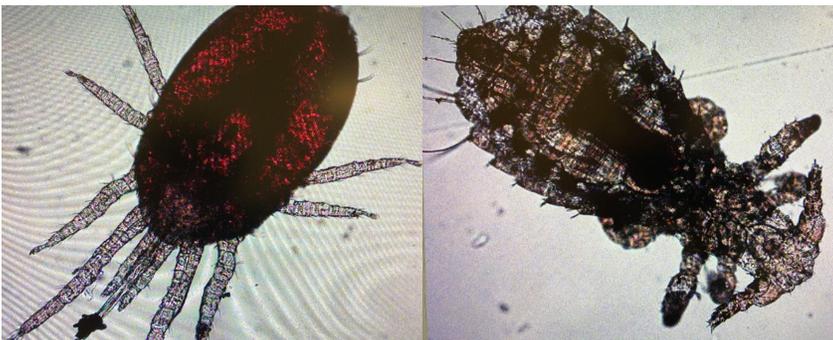
Murine typhus team at Newby Island Landfill
From left to right: Jeff Young, Bao Pham, Noor Tietze, Aric Heath, Caroline Driscoll, Richard Shatzel, AJ Escobar, Menou Thaopraseuth



Technician Bao Pham holding trapped Norway rats



Technicians Jeff Young and Menou Thaopraseuth removing ectoparasites from Norway rats for testing



Blood engorged rat mite (L) and sucking louse (R) collected from Norway rats

PUBLIC SERVICE REQUESTS

OCTOBER SERVICE REQUESTS

380 public service requests were received in October. Rodent activity inquiries were the highest, followed by coyotes, raccoons, mosquitoes, yellowjackets/wasps, and other vertebrates.

INSECT IDENTIFICATION

Nineteen insect identification requests were received in October. Specimens submitted included rove beetles, termites, cockroaches, carpet beetles, fleas, drain flies, yellowjackets, springtails, bed bugs, spiders, damsel bugs, dark-winged fungus gnats, and centipedes.

Centipedes have two legs per body segments, move rapidly, and are prone to biting. They appear similar to millipedes, but if compared you will notice millipedes have two to four pairs of legs per body segment, move slow, and do not bite.

Centipedes tend to inhabit damp and dark places, such as under rocks, logs, or mulch. They may also be found indoors in damp areas within basements, bathrooms, or closets. This species is a nocturnal creature seeking food at night and hiding in crevices during the day.

If provoked, they can inflict a painful bite that may cause numbness, swelling, and skin discoloration, but are generally beneficial to have in the garden as they are carnivorous. They may become pests when entering buildings in high numbers, usually due to the presence of prey species present there.

For help with insect identification, the public can drop off a sample at our district office, submit a photo online at SCCVector.org, or email vectorinfo@cep.sccgov.org.

REQUEST	TOTAL
Rodents	112
Coyotes	63
Raccoons	51
Mosquitoes	24
Wasps/yellowjackets	17
Other vertebrates	15
Bats	14
Bed bugs	13
Cockroaches	12
Mosquitofish	11
Skunks	11
Opossum	10
Bees	9
Other	5
Other invertebrates	5
Squirrels	4
Neglected pools	3
Snakes	1
TOTAL	380



Centipede showing two legs per body segment.

OUTREACH PROGRAM

PUBLIC EDUCATION

The District has a vigorous education and outreach program, reaching more than 16,000,000 Individuals in a year. The education and outreach program offers school presentations for K-12 students, community presentations, and educational booths year-round. Topics range from mosquito borne diseases and prevention, rodent management, living with wildlife, and other vector related subjects.

Our October outreach included presentations to 9th grade students at Lincoln High School, participation at Day on the Bay, Xilink fair, and a Santa Clara County Park staff conference. Our Health Educator also presented to the Almaden Senior Center on rodent and bedbug management.

Interested parties can submit a presentation request online at SCCVector.org, submit an email to VectorOureach@cep.sccgov.org, or call 408-918-4794.



Educational booth hosted at Xilink Fair



Bed bug (*Cimex lectularius*) after blood meal
*photo for educational purposes only

MISSION

To detect and minimize
vector-borne diseases,
to abate mosquitoes,
and to assist the public
in resolving problems that
can cause disease,
discomfort, or injury to
humans in Santa Clara
County.

www.sccvector.org



@sccvcd