

April 2007

Entomology Report



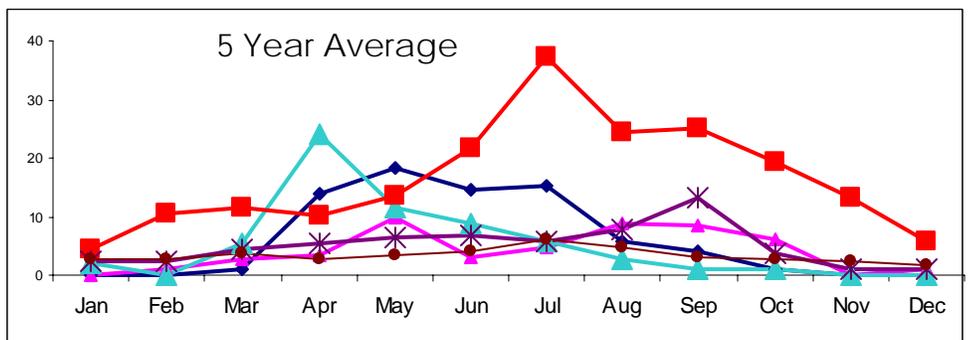
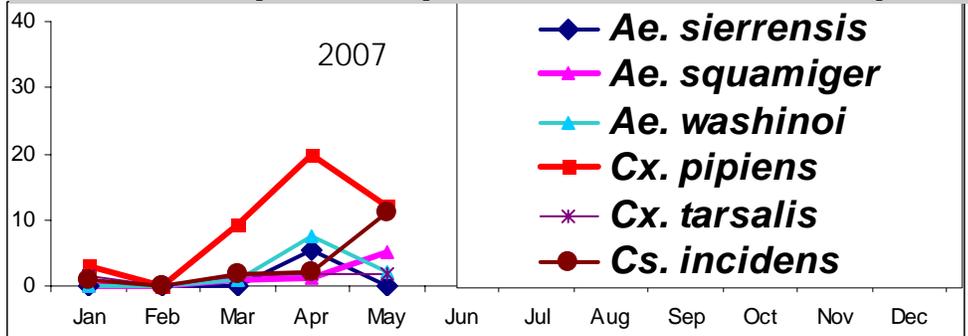
Table of Contents

Adult Mosquito Populations	1
Mosquito Control Operations	1,2
Tick Flagging with Santa Clara County VCD	2
West Nile Virus Update	2
Removal of Shopping Carts from Ryder Park mudflats	3
MVCAC Quarterly Mtg	3
Colony Collapse Disorder in Honeybees	4

In April, a total of 1,233 mosquitoes were collected in 101 trap nights (12.2 per trap night). The northern house

mosquito (*Culex pipiens*) was the most common mosquito collected and numbers (20 per trap night) were high relative to the five-year average (10 per trap night). Most of these mosquitoes arose from standing water under buildings. The number of *Aedes washinoi* collected this year (7.5 per trap night) did not rise to the levels seen in previous years (24 per trap night). *Ae. washinoi* develops in seasonal impounds. Water levels in such impounds were lower than usual this year due to low rainfall. Adult treehole mosquitoes (*Ae. sierrensis*) began to appear in traps in April. Thus far, their numbers (5.5 per trap night) are also lower than in previous years (14 per trap night).

Adult Mosquito Populations in CO2 Traps



Mosquito Control Operations

In April, mosquito control technicians treated 1,047 backyard fishponds, 74 neglected swimming pools, 33,856 catch basins, 177 roadside ditches, and water under 24 buildings. Only 11 acres of marshes and impounds required treatment this month, compared with the average of 453 in April of previous years. No helicopter treatments have been needed this year over Bair Island.

Treatment of utility vaults began this month; 2,375 were treated on April 28 and 29. Technicians began walking the sections of creeks that travel through urbanized parts of the county on April 17. They will continue inspecting pockets of water and treating them as needed on a monthly



Mosquito Control Operations Continued

basis throughout the summer, until the onset of winter rains.

Sewage treatment plants in Half Moon Bay, South San Francisco, Millbrae, Burlingame, San Mateo and Redwood Shores were treated weekly in April.

Tick Flagging with Santa Clara County Vector Control District



Lauren Marcus (SM County), Naer Zahiri and Mike Stevenson (SC County) examine flags for ticks at Foothill Park

In April, District staff focused on collection of nymphal ticks for Lyme disease testing. On April 18, District laboratory staff collaborated with Santa Clara County Vector Control to search for nymphal ticks in sites near the county border. Sampling was carried out on Old Spanish Trail in Los Trancos Woods and at Foothill Park in Los Altos. These ticks are in the process of being tested for Lyme disease. *Ixodes pacificus* nymphs are active during the spring and early summer and are easily overlooked due to their small size. Nymphs infected with the bacteria



I. pacificus nymph



Baby rattlesnake encountered on trail in Los Trancos Woods while collecting nymphs.

that causes Lyme disease have been found throughout San Mateo County.

West Nile Virus Update

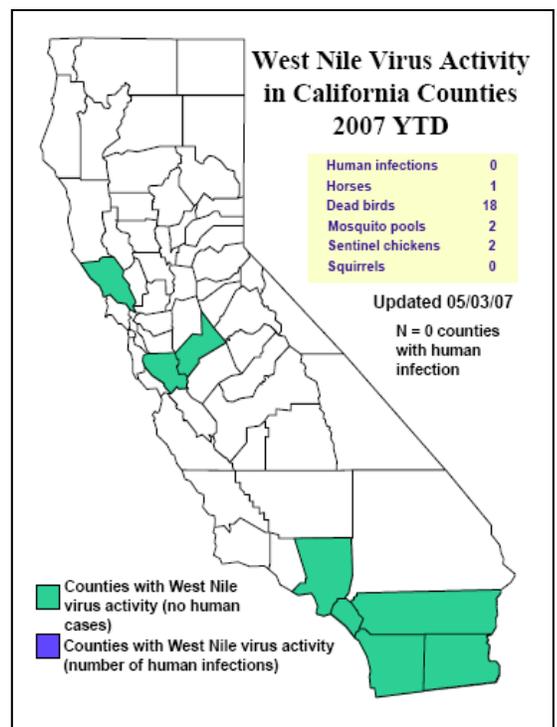
As of May 8, 2007, WNV has been detected in California in 2 sentinel chickens, 2 mosquito pools, and 18 dead birds. This is similar to numbers seen at this time in 2006. WNV has been detected in Southern California and the Bay Area. It is unclear whether WNV will hit hard this summer or not. However, early detection and precaution are always advisable. In San Mateo County this year, 49 dead birds have been reported, 30 were tested, and none were positive.

California West Nile Virus Surveillance 2004-2007*
 (* at the end of the first week in May)

Surveillance Element	2007	2006	2005	2004
Human Cases	0	0	0	0
Horse Cases	0	0	0	0
Dead Birds and Squirrels	18	15	62	6
Mosquito Pools	2	5	0	0
Sentinel Chickens	2	0	0	0

Dead Birds Reported, Tested, and Positive for WNV in San Mateo County in 2007

Total Reported	Total Tested	Total Positive
49	30	0





Removal of shopping carts and Earth Day

In a joint effort with the Department of Parks and Recreation of San Mateo, the District helped to clear discarded shopping carts, tires, and other debris from the mudflats surrounding Ryder Park, at the mouth of San Mateo Creek and ½ mile from the open water of the San Francisco Bay. This work took place on Thursday, April 19th and Friday, April 20th, as a precursor to Earth Day 2007.



Shopping carts in mudflats at the mouth of San Mateo Creek



District staff use the hovercraft to run tow lines to shore.

District staff used specialized vehicles to pull out large debris from the mud. The District hovercraft, which can travel over mudflats, was used to reach the half-sunken trash and connect tow ropes to it. The debris was then pulled in with winches from the tracked Argos parked on the rocky shore. Once onshore, park staff hauled the mud-covered items, including the wreckage of at least 15 shopping carts, a bicycle, traffic cones, office chairs and other miscellaneous debris into dumpsters for disposal. This coordinated effort between the two agencies saved taxpayers approximately \$10,000, the estimated price for a private firm to

do this work.

Both agencies hope this event will bring the public's attention to the impact of trash in local creeks. The San Mateo County Times reported that the park service had received about 20 complaints about the mess in the months before the cleanup. In addition to being an eyesore, debris dumped in waterways can cause blockages which create mosquito breeding areas during the summer. Ultimately, most of the garbage that is thrown into the creeks will eventually end up in the bay.



Stan Kamiya and Ben Rusmisl drag a large recycling bin out of the mud with an Argo

MVCAC Quarterly in San Diego

Laboratory staff attended the quarterly meeting of the Mosquito and Vector Control Association of California on May 3-4, in San Diego. Chindi Peavey, Vector Ecologist, sat on the Vector and Vector-borne Disease Committee. Topics included arbovirus surveillance, data management, other vector-borne diseases, and research programs. The committee discussed the expansion of CalSurv, a statewide website that will provide information about all vector-borne diseases to various members of the community including the public, media, mosquito and vector control districts, and other public health agencies.

Lauren Marcus, Assistant Vector Ecologist, participated in the Information Technology committee. Discussions included data management policy and tele-conferencing. A data management policy defines how the holders of state-wide data use it and proper acknowledgement of those who contribute to the data. Technology that synchs video and audio for web conferencing was demonstrated. The equipment could be purchased on a regional basis and each district could view "live" conferences on the web, with minimal cost to each agency. The meeting was productive in furthering the objectives of each committee and the MVCAC to improve public health.



We're on the web!
www.smcmad.org



"An Independent Special District
 Working for You Since 1916"

SAN MATEO COUNTY
 MOSQUITO ABATEMENT DISTRICT

1351 Rollins Road
 Burlingame, CA 94010

Phone: 650-344-8592
 Fax: 650-344-3843

www.smcmad.org

The San Mateo County Mosquito Abatement District is an independent, Special District funded by a property tax voted in by individual cities. Our mission is to safeguard the health and comfort of our citizens through a planned program to reduce mosquitoes and other vectors in an environmentally responsible manner.

	Extension
Robert B. Gay, Manager	12
Chindi A. Peavey, Vector Ecologist	32
Angela M. Rory, Assistant Vector Ecologist	31
Angie Nakano, Assistant Vector Ecologist	44
Lauren Marcus, Assistant Vector Ecologist	38
James Counts, Supervisor	16
Karen Williams, Finance Administrator	11

"A VECTOR is any animal that can transmit disease to animals or people."

Colony Collapse Disorder in Honey Bees

A mysterious disorder, known as Colony Collapse Disorder (CCD), has decimated populations of honey bees throughout the United States, including California. A widespread disappearance of honey bees is a key symptom of CCD and scientists have been unable to pinpoint the exact cause. A myriad of culprits have been proposed to explain CCD, such as environmental change, pesticide use (district materials used to control mosquito larvae do not affect bees), and even the prevalent use of cell phones. Most recently, a single-celled parasite, called *Nosema ceranae*, has been implicated in the loss of bees and has been found in affected hives throughout the country. Another commonly reported perpetrator is the varroa mite which transmits deformed wing virus, a virus deadly to bees. However, both *N. ceranae* and varroa mites have been found in healthy hives.

Honey bees play a key role in the life cycle of plants, flowers, and cash crops, such as almonds, as the predominant pollinator. According to Wikipedia, in the year 2000 the total U.S. crop value dependent on honey bee pollination was estimated to exceed \$15 billion.



A swarm of bees

(<http://www.texasento.net/bee-swarm.jpg>)



Bee extracting nectar

(<http://extension.missouri.edu/explore/wildthing/images/honeybee.jpg>)



Bees infested with varroa mites

(<http://insects.tamu.edu/extension/bulletins/images/varroa-1.jpg>)