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"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](http://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.

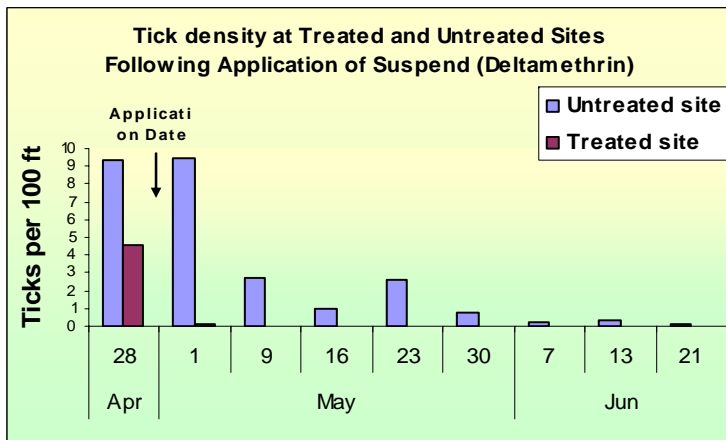
	Extension
Robert B. Gay, Manager	12
Chindi A. Peavey, Vector Ecologist	32
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*"A VECTOR is any animal capable of causing disease or is a public health nuisance."*

### Results of the Evaluation of Trailside Mowing as a Tick Control Method (MVCAC)

This four-week study concluded that the mowing of grass on the sides of public recreation trails in San Mateo County was not an effective control method for *Dermacentor* ticks. In fact, although the sample size was relatively small, the density of *Dermacentor variabilis* ticks was found to have **increased** slightly on sites after they had been mowed. The density of *Dermacentor occidentalis* was not shown to have any significant relationship to mowing. While they do not transmit Lyme Disease, *Dermacentor* ticks remain a public health concern, as they are known to vector both Rocky Mountain Spotted Fever and Tularemia, and are very common ticks in San Mateo County.

### Results of the Efficacy of Suspend on Density of Ticks Along a Recreational Trail



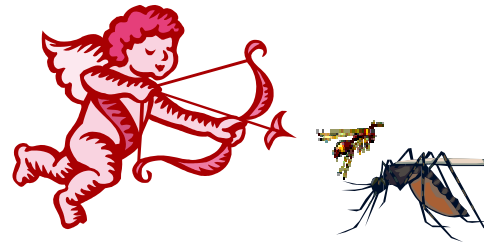
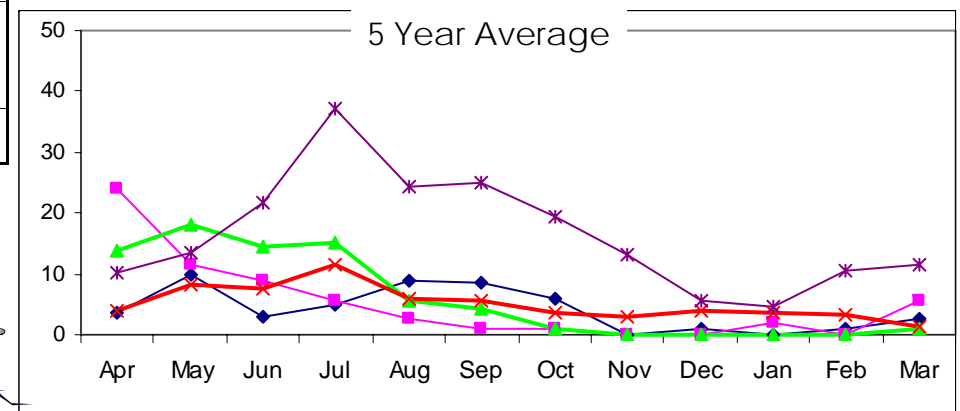
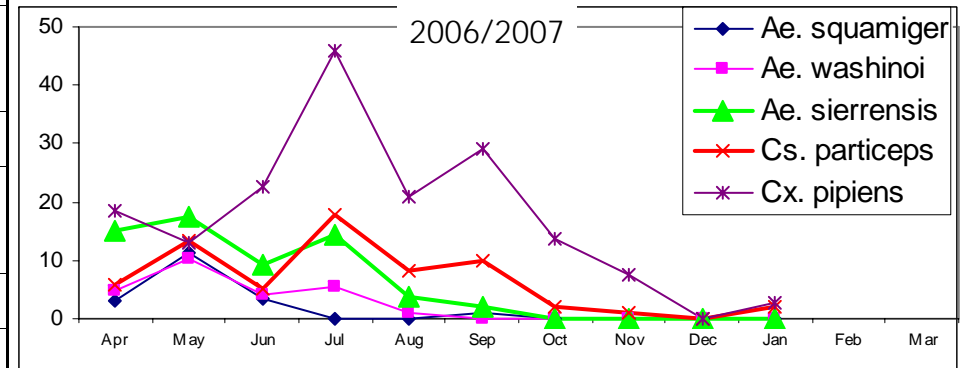
The insecticide Suspend (Deltamethrin) was evaluated for its ability to control *Dermacentor* ticks along a recreational trail in San Mateo County. Three days post treatment, showed a 98% decline in ticks. One week post treatment resulted in 100% control and after seven weeks the trail was still at a density of 0 ticks. This study showed that the material is very effective in controlling *Dermacentors*. In the future, another study will be performed to evaluate the efficacy of Suspend on *Ixodes pacificus* ticks.



# Entomology Report

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## Adult Mosquito Populations in CO2 Traps



## Mosquito Control Operations

In January, Mosquito Control Technicians treated 49 ditches and drain lines, 50 swimming pools, 694 backyard fishponds, and 125 miscellaneous containers.

Control operations have focused on inspecting marshes and impounds throughout the county. Rainfall has been very low for most of December and January and there is little water thus far in the seasonal impounds of Mills Field, East Palo Alto, San Mateo shoreline, Pacifica, Half Moon Bay and Redwood City. This month, only 42 acres of marshes and impounds have required treatment. By contrast, last year 1,121 acres were treated in January, including a helicopter application to Bair Island.

Bair Island was inspected on January 19 and 31. Thus far, mosquito control applications have been needed on only 4 acres and these have been done by hand.



### Trustee Marsh Tour

In late January, members of the board of trustees were invited to tour mosquito control sites in San Francisco Bay using the District's hovercraft. Trustees Robert Reichel, Joe Fil, and Tim Frahm donned helmets and raingear and learned firsthand about mosquito control operations in salt marshes of San Francisco Bay.



James Counts with Trustees Robert Reichel and Joe Fil after a brisk ride over the mud in the hovercraft

### Tick Surveillance

In January, tick collections were made from Edgewood Park, (Redwood City), Huddart Park, (Woodside), Laurelwood Park (San Mateo), Water Dog Lake (Belmont), and Costanoa (Pescadero). So far, a total of 827 ticks from 5 parks were collected. Evidence of infection with Lyme disease spirochetes was detected for the first time in Edgewood Park (1 positive) and Laurelwood Park (3 positives).

Area	Total Females	Total Males	Density
Coast	62	63	5.2
Edgewood Park	51	70	0.9
Hillcrest Trail	130	129	12.5
Huddart Park	14	20	0.4
Laurelwood Park	124	164	3.5

The District was contacted from residents of Belmont (near Water Dog Lake) and Pacifica with concerns about ticks in their neighborhoods. In Pacifica, questing ticks can be found in the open spaces between homes. In Belmont, western black-legged ticks were found inside a home adjoining the open space around Water Dog Lake, presumably brought in by the family cat. These instances illustrate the need to watch out for ticks even if one does not engage in outdoor activities at this time of year.

### Study of Invasive European Paper Wasps in San Mateo County (MVCAC )



This year the SMC MAD initiated a limited control program to treat and/or remove *Polistes dominulus* nests. European paper wasps (*P. dominulus*) first appeared in the eastern United States in the late 1970s and have recently become established in California. Evidence suggests that they are out-competing and replacing native paper wasp species and have become permanently established in the area.

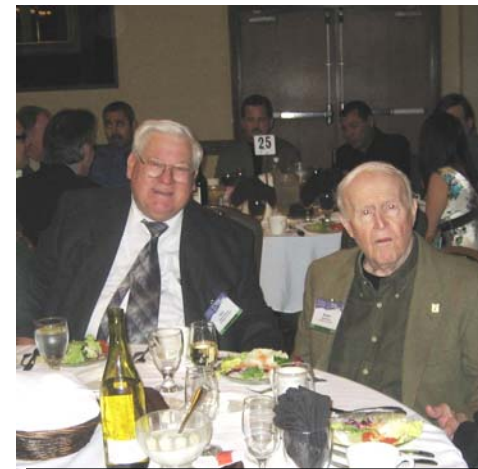


### MVCAC Conference

Seven staff members and four trustees of the San Mateo County Mosquito Abatement District attended the 75th Annual Conference of the Mosquito and Vector Control Association of California in Fresno. Five oral presentations were delivered. Topics included raccoon roundworm in San Mateo County, biology and control of the invasive European Paper Wasp, efficacy of Suspend on tick density, and evaluation of trail-side mowing as a form of tick control. Additionally, a poster was presented on the dispersal of *Cx. erythrothorax* from Lake Merced. Presentations delivered by San Mateo County staff were well received and included unique topics of interest to the community. Summarized results of some of these studies are included in this report.



Betsy Schneider and Valentina Cogoni



Ron Anderson and Robert Bury

Overall, West Nile Virus was the most discussed topic at the conference. However, other key subjects included development of new materials, technology for spatial mapping data, other diseases found in California, emerging diseases, public relations, and relationship building with other countries. This array and exchange of knowledge leads to improved control work and preparation for the future of mosquito and vector control in this quickly changing field.

### Results of *Culex erythrothorax* Mark-Release-Recapture Study at Lake Merced (MVCAC)

*Cx. erythrothorax* are known to stay relatively close to tule marshland, which provides them optimal conditions for survival and feeding. Marked *Cx. erythrothorax* were found in the Westlake district. As there are no tule sources in the Westlake District and the experiment determined that *Cx. erythrothorax* can cross John Muir Drive and Lake Merced Blvd, it is likely these originated from Lake Merced. However, 74% (238/312) of mosquitoes found in the Westlake District were not *Cx. erythrothorax*. 36% (112/312) and 34% (105/312) of mosquitoes trapped in the Westlake District were *Cs. incidens* and *Cx. pipiens* respectively. These probably originated from local sources.

The majority, 94% (34/36), of tule mosquitoes recaptured were very close to the perimeter of the lake. The fact that the mosquitoes were found across from impound lake and at East Lake in three of four trials suggests the possibility that the *Cx. erythrothorax* of Lake Merced make up one distinct population and utilize the extensive wetland habitat circumnavigating the lake for dispersal.

Based on the data from this preliminary study, it can be assumed that *Cx. erythrothorax* from Lake Merced leave the lake to travel into neighboring residential areas.