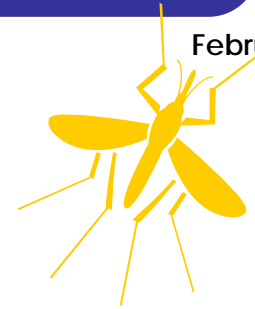
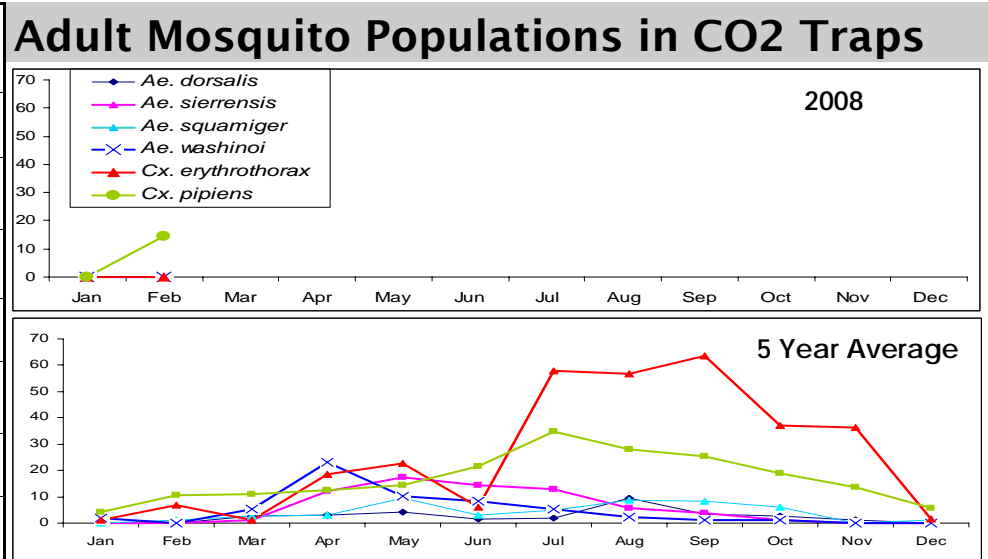


# Entomology Report

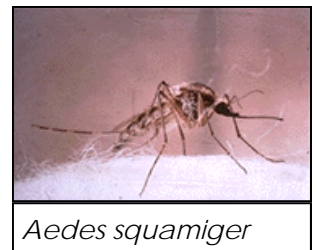


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## Mosquito of the Month - *Aedes squamiger*

*Aedes squamiger*, the winter salt marsh mosquito, is a major focus of district mosquito control programs during winter and spring. In the California coastal region, these "floodwater" mosquitoes lay their eggs in the moist soil of pickleweed marshes along the coast or associated estuaries. When it rains, water collects in low areas and causes the eggs to hatch. Larvae develop slowly throughout the winter and reach the pupal stage in March or April. The adults emerge over a two week period and travel up nearby creekways to seek a blood meal. They will then return to the salt marsh and lay eggs, which will remain dormant until the fall. Female salt marsh mosquitoes survive for many weeks, traveling back and forth between upland feeding areas and the salt marsh and are capable of flying great distances (up to 15 miles). They are a significant pest to nearby residents, biting throughout the day and pursuing victims both outdoors and indoors, in shady or sunlit locations.



*Aedes squamiger* develops in impounded water on Bair Island

These mosquitoes have a significant impact on local communities when they emerge from the salt marsh. The diked marshes of Bair Island are the biggest sources of *Ae. squamiger* larvae in the county and are closely monitored for mosquitoes during winter and spring. When larvae are detected, they are treated with environmentally-friendly materials that do not affect other organisms. Larval sources covering more than 50 acres are treated by helicopter. Smaller areas are treated on foot with backpack sprayers.

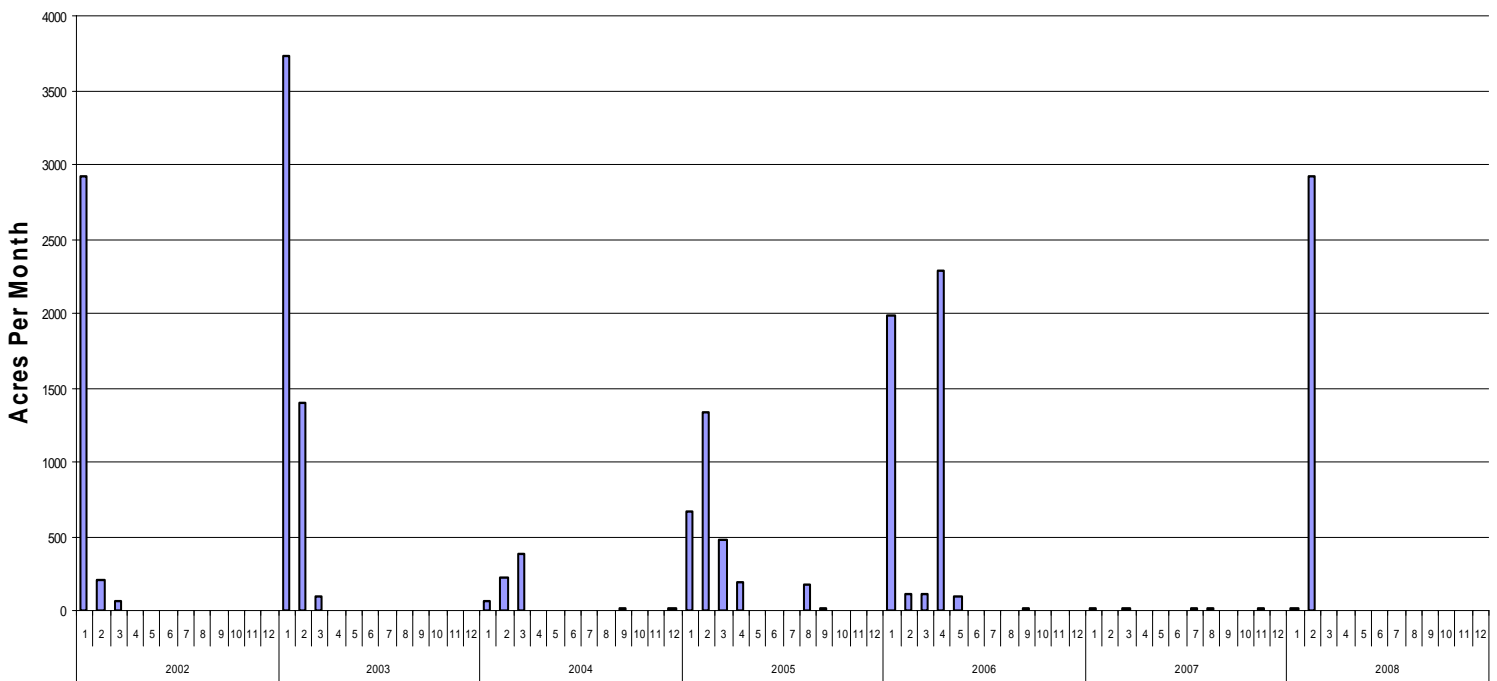


## Mosquito Control Operations

In February, Mosquito Control Technicians treated 669 backyard fishponds, 46 ditches, 336 containers, 47 neglected swimming pools, and water under 15 buildings. A total of 3,375 acres of marshes and impounds were treated this month. Bair Island helicopter work accounted for half of this. The remainder included sites in Half Moon Bay, Daly City, South San Francisco, Brisbane, San Bruno, San Mateo, San Carlos, Belmont, East Palo Alto, Woodside and Portola Valley.

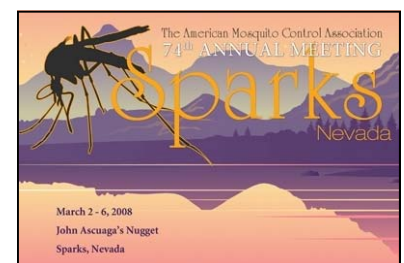
## Bair Island Mosquitoes

The graph below shows the amount of acreage treated each month on Bair Island for the past seven years. Typically, 1-3 helicopter applications are made each year between January and March for winter salt marsh mosquitoes. In 2006, weather conditions prevented helicopter applications during February and March; a final helicopter application was made in April. Last year (2007), rain events were comparatively small and widely separated, resulting in very limited areas of standing water which could be treated with backpack sprayers. There has been one helicopter treatment thus far in 2008. Larvicides were applied to 1,460 acres on February 19 & 20. Follow up inspections revealed mosquito larvae in a few pockets. These areas were treated by hand on February 27.



## AMCA Annual Conference

Four district staff and two trustees attended the American Mosquito Control Association's 74th Annual Meeting in Sparks, Nevada. The intensive four-day conference included symposia on a variety of topics, including adult and larval mosquito control, potential introductions of vector-borne diseases into the United States, the use of Geographic Information Systems (GIS) for mapping inspections and treatment, and international issues. Trustee sessions covered financial and legislative issues, as well as background information on techniques used to control larval and adult mosquitoes.





## Surveying for Tularemia on the Coast

On February 27, the district trapped rodents south of Pescadero to test for tularemia. Tularemia is a bacterial disease of wildlife (primarily rodents and rabbits) that can sometimes be transmitted to people. Symptoms include abrupt onset of fever, chills, muscle aches and progressive weakness. When a person is infected by a tick bite, there is often a skin ulcer at the site of the bite and the local lymph nodes are swollen. The disease can be acquired from ticks or exposure to the tissues of infected animals, such as rabbits. Tularemia is not passed from one person to another and is treatable with antibiotics.

There have been two cases of tularemia in children in San Mateo County in the past 3 years. Both cases appear to have been caused by exposure to infected ticks at a location south of Pescadero along the coast highway. Tularemia has been detected in ticks collected at this site. In 2007, the bacteria was detected in 3 out of 102 adult American dog ticks (*Dermacentor variabilis*) and in 5 pools out of 128 adult Pacific coast ticks (*D. occidentalis*). The prevalence of infection in these ticks was 3 and 4%, respectively.

The survey conducted this month was aimed at assessing the level of infection in reservoir hosts. A total of 150 live traps were set and 12 animals were collected. Collections included 5 deer mice (*Peromyscus maniculatus*), 4 harvest mice (*Reithrodonomys megalotis*) and 3 California meadow voles (*Microtus californicus*). Blood samples obtained from these animals will be tested for serological evidence of exposure to tularemia by scientists at the Centers for Disease Control (CDC). Ultimately, the district plans to conduct monthly trapping and collect samples from at least 50 mice.

This project is a collaboration between the district, the San Mateo County Health Department, the California State Department of Public Health, and the CDC.



Live traps used to collect small mammals for disease surveys



Obtaining blood samples from anesthetized mice



Releasing animals at site of capture



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"An Independent Special District  
 Working for You Since 1916"

SAN MATEO COUNTY  
 MOSQUITO ABATEMENT DISTRICT

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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."*

# Upcoming Events

The San Mateo County Mosquito Abatement District, in conjunction with Alameda County Mosquito Abatement and San Francisco Health Department, will be participating in the 2008 San Francisco Flower and Garden Show. Please stop by to visit our booth and say Hi!



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