

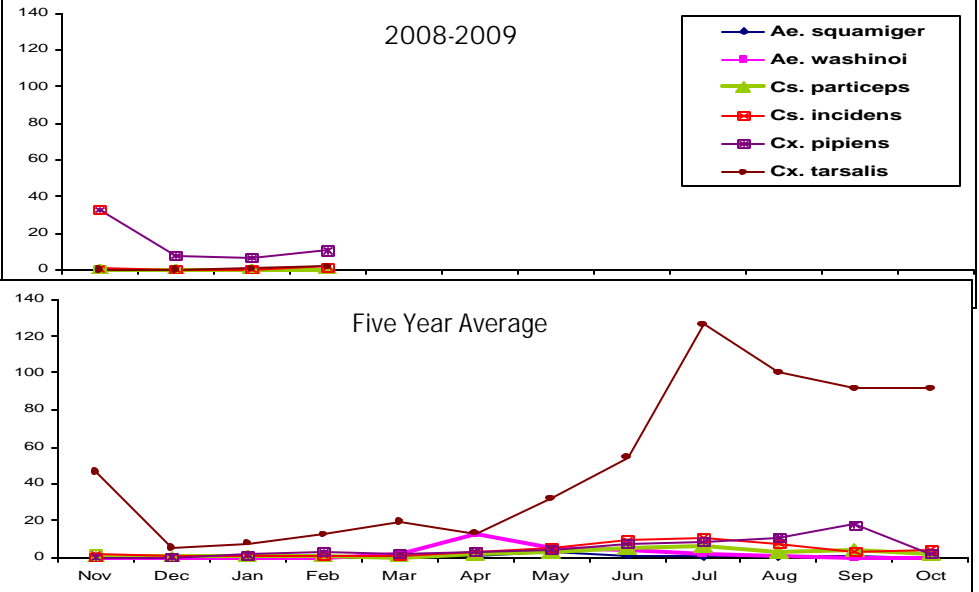


# Entomology Report



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## Adult Mosquito Populations in CO2 Traps



## Mosquito Control Operations

January was another month of low rainfall. Mosquito control technicians continued checking and treating local sources. The amount of acreage covered with water in marshes and impounds continues to be quite low for this time of year, with only 12 acres needing treatment this month compared to the five-year average of 21 acres.

Bair Island was inspected on January 9 and 23. Larval development was restricted to Pond B1 on Outer Bair Island. However, water pumped into Middle Bair Island as part of the restoration program has since begun to produce mosquito larvae and helicopter treatment will probably be necessary in February.

Marshes and impounds in East Palo Alto, San Mateo, Woodside, Half Moon Bay, Brisbane and Pacifica have remained relatively dry and resulted in very little mosquito development thus far.

Number of Sources Treated Per month by Source Type			
Source type	This month (Jan)	Last month (Dec)	Monthly Avg
Fishponds & Fountains	1304	1,692	1,066
Containers	810	771	497
Ditches & Drainlines	135	135	120
Creek	14	8	40
Catch basins	597	392	24,712
Utility Vaults	43	62	102
Marshes & Impounds	149 (12)	262 (12 acres)	187 (21 acres)
Neglected Swimming Pools	282	105	73
Water under Buildings	18	37	17

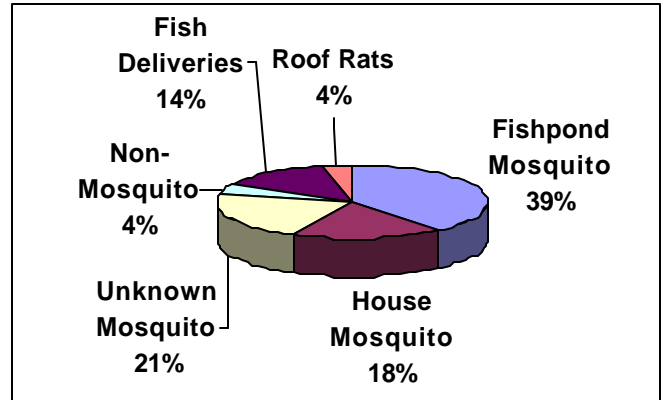


## Service Requests

(Continued from page 1)

There were a total of 28 requests for service in January. The majority of these were related to mosquitoes, principally *Culiseta incidens* (Fishpond mosquitoes) and *Culex pipiens* (Northern house mosquitoes). One request involved a question about bats residing in a building in East Palo Alto that houses a school and a health club. District staff provided advice about structural changes to exclude bats.

Service Requests January 2009



## Coastal Region Continuing Education Workshop

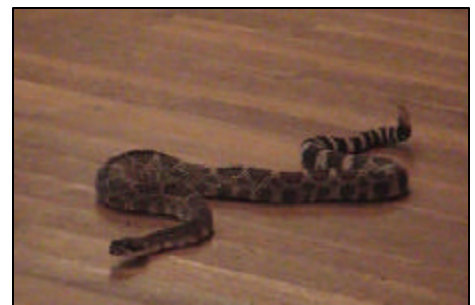


Al Wolf of Sonoma County Reptile Rescue

On January 14th, district staff members attended the Coastal Region Continuing Education Workshop in Alameda. Talks covered a wide range of topics, from horsefly ecology and ectoparasites found on urban homeless, to pigeon control technologies and how to avoid dog attacks.

A standout presentation was given by Al Wolf and Laurie Osborne of Sonoma County Reptile Rescue. Al and Laurie discussed facts and myths surrounding local reptiles and arthropods,

displaying several live specimens and allowing audience members to get a close-up look at an array of live creatures.



A Northern Pacific Rattlesnake

## District Tours

As a corollary to the 2009 MVCAC Meeting in Burlingame, facility tours were conducted for members of other visiting districts. In addition to touring the main SMCMVCD building, insectary, entomology laboratory and insect museum, visitors were led outside to view the pesticide storage area, fish tanks, vehicle bays and maintenance shop. Visitors were also treated to a special display documenting the rich history of mosquito and vector control in San Mateo County.





## 77th Annual MVCAC Conference 2009

The entire SMCMVCD staff attended the 2009 annual meeting of the Mosquito and Vector Control Association of California (MVCAC), held at the Burlingame Hyatt Regency. Nearly 500 mosquito and vector control professionals, trustees, and vendors from across the state came to this year's conference, which was hosted by the Coastal Region.

District staff members Theresa Shelton, Jim O'Brien and Angie Nakano reported on recent research projects in presentation sessions, and vector ecologist Chindi Peavey gave an overview on the history of ground squirrel control in San Mateo County. All district talks were well-attended and well-received.

The reception and banquet is also a perennial highlight of the annual meeting. Please enjoy these pictures from the conference!

**Conference photos:** Theresa Shelton and Samantha Wallingford at the banquet (**bottom left**); Jim Ridgeway and Donna Rutherford at the banquet reception (**bottom center**); Valentina Cogoni, James Counts, Sam Lerner, and Brian Weber at the banquet reception (**bottom right**); Betsey Schneider and architect Lloyd Fogelhut in the exhibition hall (**center right**); Angie Nakano giving a presentation on dog heartworm (**top right**).



## GIS Workshop

At the MVCAC conference, some of the staff attended the Monday afternoon GIS workshop. GIS (Geographic Information Systems) is a computer tool to organize, analyze and display regional data. At the district, a variety of data from different areas of the county is collected, including CO<sub>2</sub> trap results, dead birds and squirrels, larval sources and rat activity. The mapping software enables the detection of geographical patterns, can help technicians locate the source of a mosquito problem, and provides graphic displays of the data.

Participants in the workshop used laptops for a hands-on lesson. In the first session, participants took a list of street addresses and used a website to convert them to latitude and longitude, and then added them to a map as locations. The next session was a demonstration of techniques to manipulate and format a map to make it appropriate for a presentation or website. Lastly, participants analyzed a dataset of West Nile Virus test results on dead birds with a statistical program to look for clusters of positive results in both space and time and plotted the clusters on a map. If disease rates were to increase, the cluster analysis would help pinpoint areas that should be investigated to determine the cause of the outbreak. With the skills gained during the workshop, district staff may use GIS software more efficiently and to a greater extent.



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The San Mateo County Mosquito and Vector Control 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.

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

## Locust Swarms

Scientists at the University of Cambridge have determined that the neurotransmitter serotonin is a cause of swarming behavior in desert locusts. Normally desert locusts live in solitude, but at times will form massive groups that move across the land, eating crops along the way. Serotonin, a brain chemical that also causes behavioral changes in humans, rises to about three times its normal level in the insect brain during a swarm. It also causes a visible change in coloration of individuals from green to yellow and brown.

A research team at Oxford followed up the study by investigating the cause of the rise in serotonin. They found that sensing other locusts nearby was a cue that triggered the production of the neurotransmitter. The researchers caused a rise in serotonin levels by brushing the insects' legs, mimicking the sensation of a crowd. Locusts may come in contact with each other when resources are scarce.

Understanding the causes of swarming behavior can help pest managers to limit the occurrence of swarm events that cause fear and considerable agriculture loss. Although further research is needed, scientists could potentially figure out a way to block serotonin production in locusts. The study is available in the January 30 issue of Science magazine in an article by researchers Michael L. Anstey, Stephen M. Rogers, Swidbert R. Ott, Malcolm Burrows, and Stephen J. Simpson.



*Schistocerca gregaria* (desert locust) forms swarms in the Western United States, Africa, and Asia