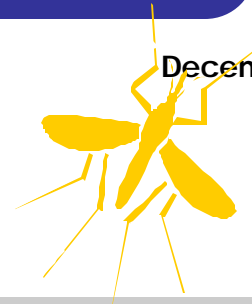


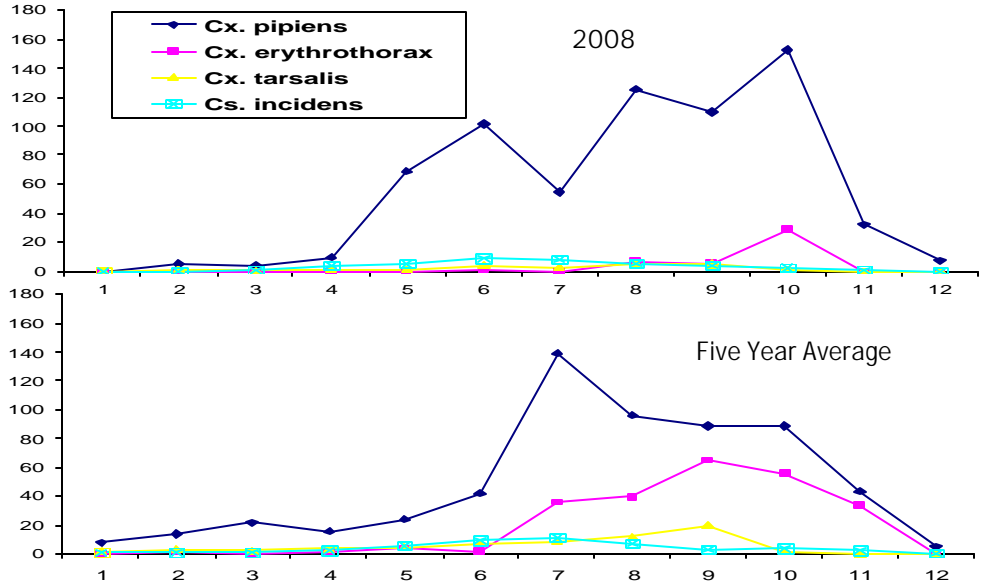


Entomology Report



Adult Mosquito Populations in CO2 Traps

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Mosquito Control Operations

Rainfall levels were very low during December and many of the historical sources of winter mosquitoes are dry. Mosquito control technicians conducted routine surveillance of their marsh areas throughout December, checking water levels and searching for larvae. Salt marsh mosquito production is far below what is usually seen at this time of year. Backyard fishponds continue to be a source of larvae, particularly on unoccupied properties. Mosquito production remains a problem where water collects under houses, such as in the Shoreview neighborhood of San Mateo. Catch basins and storm drains are usually flushed out by heavy rainfall at this time of year. The lack of substantial rains this winter has caused some basins to once again hold larvae in Foster City and Redwood Shores. Mosquito control technicians have conducted control work with catch basin trucks in these cities.

Number of Sources Treated Per month by Source Type			
Source type	This month (Dec)	Last month (Nov)	Monthly Avg
Fishponds & Fountains	1,692	1,438	1,066
Containers	771	331	497
Ditches & Drainlines	135	84	120
Creek	8	21	40
Catch basins	392	451	24,712
Utility Vaults	62	40	102
Marshes & Impounds	262 (12 acres)	168 (19.6 acres)	187 (21 acres)
Neglected Swimming Pools	65	68	73
Water under Buildings	37	18	17

(Continued on page 2)



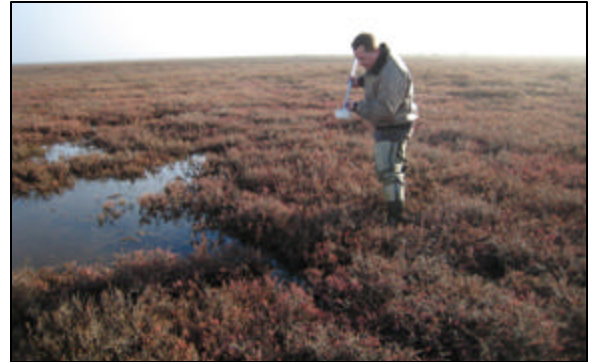
Mosquito Control Operations (continued)

Sewage treatment plants have been treated every 4 weeks in November and December. This included work at treatment plants in Burlingame, Redwood Shores, South San Francisco, San Mateo and Half Moon Bay.

Mosquito control technicians conducted routine surveys of Bair Island on December 12. Currently, only pond B1 on Outer Bair Island is holding water. Mosquito development is occurring in a small area on the southeast side of this area.



Progress continues on the levee breaches on Middle Bair Island



Ben Rusmisl checking for mosquito larvae on Outer Bair Island

77th Annual MVCAC Conference 2009

The annual conference of the Mosquito and Vector Control Association of California (MVCAC) will be held at the Hyatt Regency in Burlingame this year, near the district's headquarters. The conference opens on January 26 and extends through the 29th. Four district staff members will be presenting talks at the conference. Angie Nakano, Assistant Vector Ecologist, will discuss her ongoing project assessing the state of canine heartworm in the county. Theresa Shelton, Assistant Vector Ecologist, will be presenting information on invertebrate abundance and diversity at a restoration project in the San Francisco Presidio. Chindi Peavey, Vector Ecologist, will be speaking on the history and current distribution of ground squirrels in the county. Mosquito control technician James O'Brien will present the results of trials with BVA 2 Oil, which the district has been testing as a replacement for Golden Bear Oil in catch basins and fishponds.

The district has invited conference attendees to tour its facilities during the conference. Facility tours will be offered January 25 and 26, and light refreshments will be provided. There will be a display on the early history of SMCMVCD, dating back to the beginning of the twentieth century. The district's in-house testing for Lyme disease spirochetes in ticks will be showcased, including a demonstration of tick dissection. The entomology lab's insect museum will also be open for viewing.

The operations department will be displaying their impressive semi-amphibious Argo fleet and other modern field equipment. The entire SMCMVCD staff will be attending the conference this year.



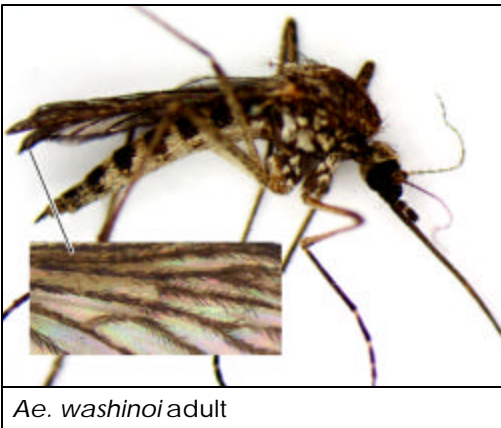


Mosquito of the Month—*Aedes washinoi*

Larvae of *Aedes washinoi* develop in fresh water impounds and forest pools during winter and early spring. It is a “univoltine” species, producing only a single generation each year. *Ae. washinoi* larvae commonly appear in impounded rainwater between January and March in areas such as Mills Field in San Bruno, Mussel Rock in Daly City and Smith Field in Half Moon Bay. The adult females are aggressive day-biters and can significantly impact residents in neighborhoods adjoining larval source areas.



Ae. washinoi larva



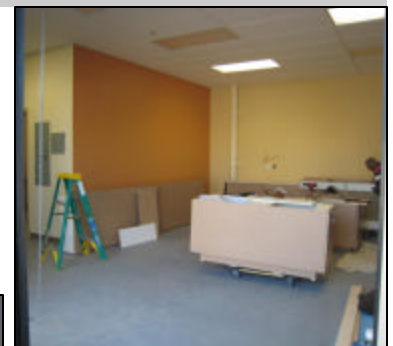
Ae. washinoi adult

Identifying features of adult *Ae. washinoi* mosquitoes:

- Pointed abdomen
- Body: Black with white scales
- Legs: Black with white banding
- Season: Adults emerge late winter to early spring
- Larval Habitat: Freshwater ground pools, shaded pits near rivers or streams
- Behavior: Active day biter, generally found within 1/2 mile of larval source

Redwood City Site Update

Installation of shelving and cabinetry has begun at the new district auxiliary site in Redwood City. Electricity and water has also been installed. The vehicle storage bays are nearing completion and preparations are being made for the completion of the exterior driveways. The laboratory and operations staff eagerly await the opening of this site in the near future!



Photos:

(far left) Interior view of garage area with shelving.

(top) Interior view of laboratory storage area before cabinet installation.

(left) Laboratory storage area after cabinet installation.



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MOSQUITO AND VECTOR CONTROL

1351 Rollins Road
Burlingame, CA 94010

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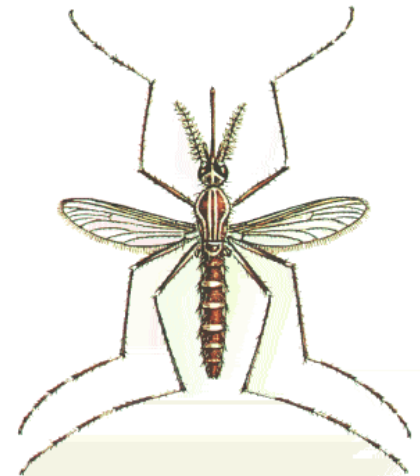
***"A VECTOR is any animal that can transmit
disease to animals or people."***

Mosquito Courtship Sounds

Recent research at Cornell University on *Aedes aegypti* mosquitoes found that male mosquitoes locate females by listening for the vibrations of their wings. These same vibrations create the buzz we hear. Researchers demonstrated that both males and females change the speed of their wing beats while courting. Male and female pairs were placed together while the frequency of their wing beats was recorded. They vibrated at different frequencies, combining to reach an overtone of 1200 hertz. Scientists were previously unaware that mosquitoes were able to detect frequencies as high as this. It was suspected that female mosquitoes were deaf. The report by these researchers is available in the current issue of the journal *Science*.

This discovery could potentially lead to new methods of mosquito control. For example, one method of reducing the population of insects that tend to mate only once is to release sterile males. The females mate with these sterile males rather than fertile ones and as a result, produce inviable eggs or no eggs at all. Knowing the wing beat frequency that is most attractive to a female will maximize the effectiveness of the sterile male release because the males that have the best mating signals can be used.

Aedes aegypti mosquitoes are vectors of yellow fever, dengue fever, and Chikungunya virus. Control of this mosquito can have an enormous impact on human health.



Ae. aegypti occurs in warm climates worldwide, including the southeast United States.