

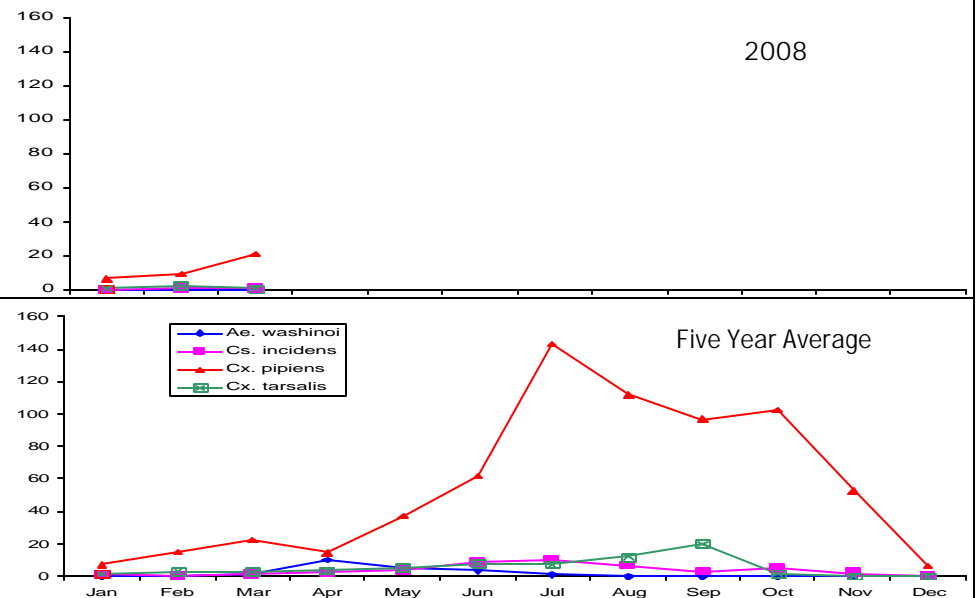


# Entomology Report



## Adult Mosquito Populations in CO2 Traps

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## Mosquito Control Operations

In March, mosquito control technicians treated 1,355 backyard fishponds and fountains. A series of rainstorms in February and March resulted in an increase in the number of acres with standing water throughout the county. The dramatic rise in treatment of marshes & impounds reflects this increase (2,727 acres this month, compared to 159 acres in February). The first helicopter treatment of the season was conducted on March 17, covering 1,144 acres on Inner, Middle and Outer Bair Island. Inner Bair Island (pond A12) was also treated with ground based equipment in March—10 acres on March 3 and 25 acres on March 24.

Standing water also began collecting in Mills Field. This area was checked weekly throughout March with 13.5 acres treated.

Marshes surrounding East Palo Alto and East Menlo Park were treated on March 4, 19, and 26 (44.5 acres total).

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Number of Sources Treated Per month by Source Type			
Source type	This month (Mar)	Last month (Feb)	Monthly Avg
Fishponds & Fountains	1,355	1,432	1,066
Containers	842	725	497
Ditches & Drainlines	72	90	120
Creek	2	3	40
Catch basins	167	148	24,712
Utility Vaults	57	49	102
Marshes & Impounds	406 (2,727 acres)	288 (159 acres)	187 (1,461 acres)
Neglected Swimming Pools	135	109	73
Water under Buildings	13	24	17



## Mosquito Control Operations (continued) and Service Requests

Sewer Plants in South San Francisco, San Mateo and Half Moon Bay are being treated every 3 weeks during the winter and will be treated every 2 weeks beginning in May.

**Service Requests:** District Staff responded to 66 requests for service in March. Service requests fell into the following categories:

- 44 Mosquito-related requests, including
  - 22 mosquito calls
  - 13 reports of standing water
  - 9 requests for mosquito fish
- 7 Requests regarding stinging insects, including
  - 4 ground nesting yellow jackets
  - 3 other bees/wasps
- 6 Requests regarding vertebrate pests, including
  - 5 roof rats
  - 1 raccoon
- 8 Insect/tick identification requests, including
  - 3 tick identifications
  - 5 other insects
- 1 Miscellaneous issue



Mosquito Control Technician Kim Keyser removes a vent cover in preparation of a crawl-space mosquito treatment.

## West Nile Virus Update

### Statewide:

The State Dept. of Public Health (CDPH) resumed testing of dead birds on March 16th. Through April 3, 2009, West Nile virus (WNV) has been detected in five counties (see map at right). The first evidence of WNV this year was detected in a dead bird in Fresno County. Contra Costa County also detected WNV for the first time in 2009 from a positive mosquito test. Other counties that have previously reported WNV in 2009 include Los Angeles Co., Orange Co. and San Diego Co. So far this year, WNV has not been detected in California from any squirrels or horses, and there have been no human cases.

### San Mateo County:

Dead bird testing has begun. District staff have collected twelve birds and one squirrel to submit for testing in the past few weeks. Testing has been reported for two birds so far; both were found negative for WNV.

District staff picked up this year's flock of sentinel chickens on March 17. These chickens are housed at the Jasper Ridge Biological Preserve in Portola Valley. Blood testing of these chickens has started and will continue through October. Chicken blood samples are taken every two weeks and sent to the state's vector borne disease surveillance lab for analysis.





## Motion -activated Camera for Monitoring Rodent Activities

The district laboratory is currently testing a motion-activated camera for monitoring rodent activities. The Wildview digital scouting camera is designed to automatically trigger when an animal trips an optical sensor. The photo coverage area extends 30 feet and has a peripheral range of 26 feet. It can also be set to take up to three continuous images and 10 second video clips.

This camera's capability to detect small rodents is currently being tested at a residence in Menlo Park. The resident has not only been observing rat activity in her house, but has also suffered from mite bites. Since the camera has the capability to time-stamp images, photos may also be used to determine when rats are active.

If successful, this versatile monitoring device might be used for future projects such as determining which rodent species will take bait from rat bait stations.



Test run of the motion-activated camera. The camera is mounted on a resident's home water heater.

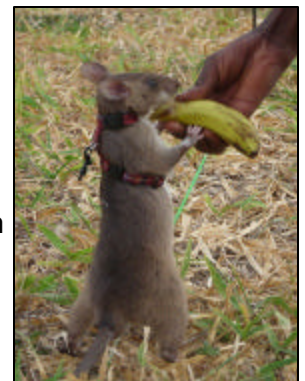
## Rats in the News

APOPO, a non-profit organization founded in 1997 by Belgian and Tanzanian researchers and animal trainers, has been using rats to locate land mines and unexploded ordnance in Africa. Historically, dogs have been used for this work, but rats offer a promising alternative for locating land mines. They are easy to breed and train and have an extremely sensitive sense of smell. They find the mines by the scent of explosives they contain, so they can detect both metal and plastic-housed mines. Also, because rats are small and light, they don't set off the mines they find. Now, for the first time in Britain, a Gambian pouched rat named Kofi is also being trained to sniff out landmines.



Rats are trained to scratch at the ground in front of a land mine.\*

Rats are also being trained to use their sensitive noses to detect tuberculosis bacteria in samples of human sputum. For more information on sniffer rat activities and research programs, APOPO maintains a website about these "HeroRATs" at <http://www.herorat.org>.



A Gambian pouched rat being rewarded with a banana.\*\*

\*Photo from <http://www.herorat.org>

\*\*Photo by Wikimedia Commons user: "From one to another" available under a Creative Commons Attribution ShareAlike 3.0 License (<http://creativecommons.org/licenses/by-sa/3.0/>)

## Calendar of Upcoming Events

- April 5—9** American Mosquito Control Association (AMCA) meeting in New Orleans, LA
- May 6—8** Mosquito and Vector Control Association of California (MVCAC) Quarterly Meeting in Visalia, CA
- May 15—17** San Carlos Hometown Days
- May 21** MVCAC vector control certification examinations in Alameda, CA
- May 30 & 31** Foster City Arts & Wine Festival



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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.

	Extension
Robert B. Gay, Manager_____	12
Chindi A. Peavey, Vector Ecologist_____	32
Angie Nakano, Assistant Vector Ecologist_____	31
Tina Sebay, Assistant Vector Ecologist_____	38
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***"A VECTOR is any animal that can transmit  
disease to animals or people."***

## Laser Technology to Control Mosquitoes that Transmit Malaria

According to the Centers for Disease Control, each year malaria cases number 350-500 million globally. Malaria is a deadly mosquito-borne disease transmitted to humans by female *Anopheles* mosquitoes. Malaria continues to be a major public health threat in many parts of developing countries in Africa, South America and Asia.

A recent Wall Street Journal online article reports a novel approach to combat the deadly impact of malaria. A group of Seattle scientists has been working since 2006 to develop a laser technology that can specifically target mosquitoes and immediately destroy them. Led by former Lawrence Livermore Lab astrophysicists Jordin Kare and Lowell Wood, this team has dubbed their project "WMD: Weapon of Mosquito Destruction." Although their work is far from completed, a recent demonstration showed a laser prototype able to recognize and aim at mosquitoes in flight.

Research on cutting edge anti-mosquito technology has seen a resurgence in recent years. New ideas to combat malaria have been encouraged by significant funding from Bill Gates and other major donors. Widening the arsenal of effective mosquito control methods has the potential to bring much needed protection and relief to millions of people worldwide.



Female *Anopheles freeborni* mosquito blood feeding on a human arm. Mosquitoes of this genus can be vectors for malaria. Picture courtesy of CDC.