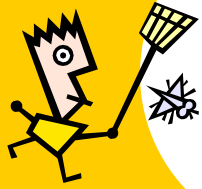


July/August 2008



Entomology Report

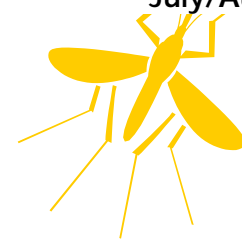
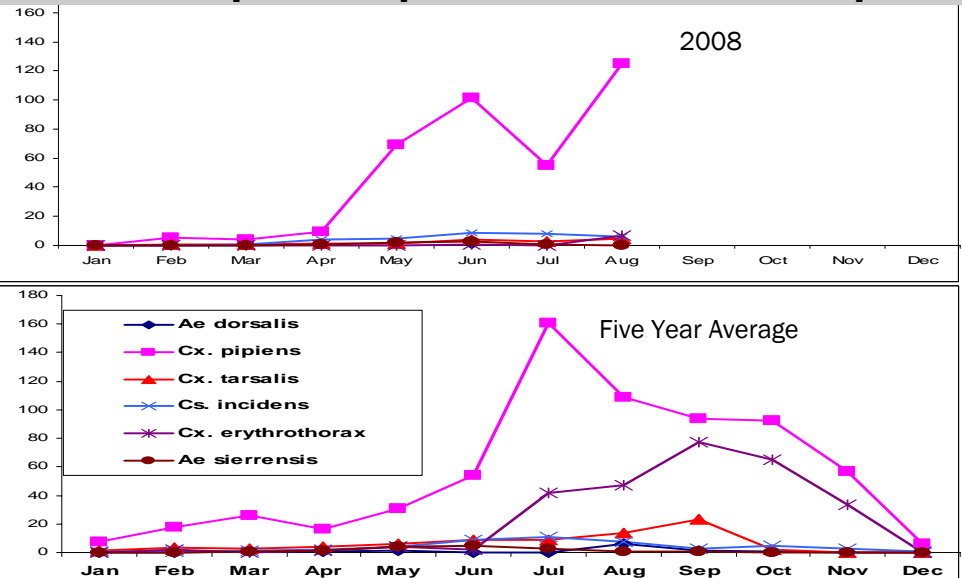


Table of Contents	
Adult Mosquito Populations	1
Mosquito Control Operations	1
Service Requests	2
New District Staff	2
West Nile Virus Update	3
Lab Mosquito Colony	3
Bay Checkerspot Butterfly	4

Adult Mosquito Populations in CO2 Traps



Mosquito Control Operations

In July and August, mosquito control work continued to focus on underground sources and cattail marshes. The numbers of sources treated per month in June, July and August are shown below. Routine treatment of vaults in large sections of the county was done in June and again in September. Additional individual sites were treated in July and August. Fewer swimming pools and containers required treatment during the dry part of the year. Catch basin treatments continue to be a major project throughout the summer. Although the number of marsh sources treated were similar each month, the acreage treated in July and August was much greater. This is primarily due to helicopter treatments applied to cattail marshes every 3 weeks from July through September.

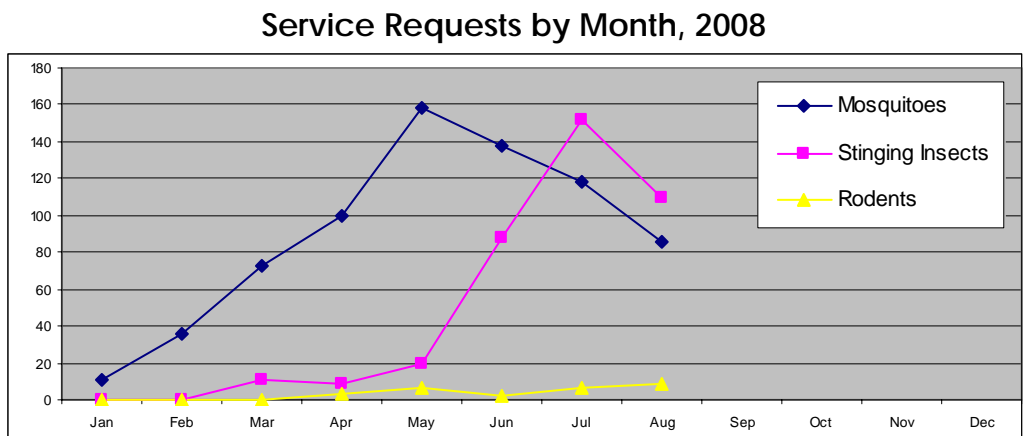
Treatment of invasive cordgrass began early this year. The Invasive Spartina Program received authorization from USFW to begin treating in July, while the cordgrass was still actively growing. Early treatment should greatly increase the effectiveness of the work. Cordgrass treatment is expected to be complete by September 30. In 2008, 469 acres have been treated.

Source type	June	July	August
Fishponds & Fountains	1,216	964	1,019
Containers	1,153	840	226
Ditches & Drainlines	158	169	143
Creek	79	49	78
Catch basins	42,817	45,920	46,719
Utility Vaults	140	89	49
Marshes & Impounds	168 (10 acres)	154 (215 acres)	165 (117 acres)
Neglected Swimming Pools	84	43	44
Water under Buildings	15	27	16



Service Requests

District staff fulfilled 282 service requests in July and 208 in August. The graph to the right shows a breakdown of service requests by type. Rodent issues accounted for only 3 to 4% of total requests in both months. Home inspections have revealed mostly problems related to roof rats. However, problems at two residences in Foster City were caused by ground squirrel colonization in backyards. Unlike tree squirrels, ground squirrels create extensive underground burrow systems which can lead to landscape or structural damage. These squirrels have become quite numerous in recent years on the dikes



A California Ground Squirrel

along the bay shore of Redwood Shores, Foster City, East Palo Alto and Menlo Park. These calls indicate that ground squirrels have begun to move into yards in some of these neighborhoods.



This ground squirrel burrow was revealed when a Foster City resident had a deck removed for remodeling

New District Staff

The district is pleased to announce the addition of two new Mosquito and Vector Control Technicians and two new Assistant Vector Ecologists.

Casey Stevenson, a graduate of Chico State and former teacher, joins the full-time staff as a Mosquito and Vector Control Technician after working this past summer as one of our seasonal catch basin drivers. Danielle Hasn, a San Jose State alum, comes fresh from the world of biotech to join the vector control operations staff.

In the lab, Theresa Shelton brings her expertise in aquatic invertebrates and insects, as well as experience identifying spiders, to the position of Assistant Vector Ecologist. Theresa recently completed her Master's program at San Francisco State University. The second addition to the laboratory is a familiar face; former district technician Tina Sebay will draw from her wealth of knowledge in mosquito and vector control operations as she takes on this new role. Tina has extensive experience in the field, including stints with San Gabriel Valley, Alameda County and Contra Costa County districts before joining San Mateo County in 2005.

If you see any of our new staff hard at work in the lab or out in the field, be sure to say hello!

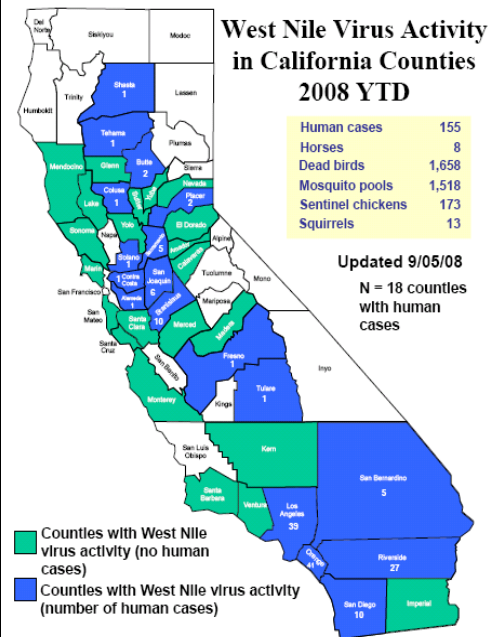


West Nile Virus Update

On Aug. 27 2008, the third human death in California attributed to West Nile virus (WNV) was reported in San Bernardino County. A Rialto resident, the 48 year old man had pre-existing medical conditions prior to contracting WNV. The other two deaths this year both occurred in Orange County. State-wide, there have been 157 human cases of WNV from 19 counties. In August, Colusa, Contra Costa, Merced, Placer and Tehama counties also reported their first human cases for 2008. Currently, a total of 40 counties have reported some form of WNV activity.

WNV activity in California		
As of 09/05/08	2007	2008
Counties	49	40
Human Cases	199	157
Horses	19	8
Dead Birds	878	1658
Mosquito Samples	830	1518
Sentinel Chickens	231	173
Squirrels	11	13

2007 YTD - Year to date corresponds to the same time last year.



Thus far in 2008, 1,658 dead birds from 38 counties in California have tested positive for WNV. In San Mateo County, two dead birds (from South San Francisco and Atherton) have been found positive for WNV. To date, a total of 13 squirrels from four counties in the state have tested positive for WNV in 2008. Six dead squirrels have been reported in San Mateo County, none of which have tested positive for WNV. This is a significant decrease from the 19 dead squirrels that had been reported in the county by this time last year.

New *Culex pipiens* colony

For a number of years, the district had maintained an isolated laboratory colony of the northern house mosquito, *Culex pipiens*. After a decline in colony fitness, possibly due to lack of genetic diversity, and a recent renovation to the climate-controlled insectary room, it was decided to start an entirely new mosquito colony. Adult *Cx. pipiens* mosquitoes collected from CO₂ traps in San Mateo and Portola Valley were combined to begin this new colony.



Culex pipiens larvae congregate at surface of rearing tray.

The goal is to establish a mosquito colony which reflects the average level of fitness and pesticide tolerance in *Cx. pipiens* across the entire county. In this way, the lab mosquito colony may be used in the future as a baseline comparison when running experiments to test wild-caught mosquitoes for evidence of pesticide resistance.



Different techniques and types of blood feeds are being tested for the colony. Female mosquitoes require a blood meal to produce eggs.



"An Independent Special District
Working for You Since 1916"

SAN MATEO COUNTY
MOSQUITO AND VECTOR CONTROL

1351 Rollins Road
Burlingame, CA 94010

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www.smcmad.org

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
Theresa Shelton, Assistant Vector Ecologist_____	44
James Counts, Supervisor_____	16
Maren Williams, Finance Administrator_____	11

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

Land Set Aside for Bay Checkerspot Butterfly

The Bay Checkerspot, a small red and black butterfly, is one of the few insects listed as "threatened" under the Endangered Species Act. As a caterpillar, it feeds on serpentine plants, particularly plantains (a small grassy plant, not the plantain that is related to bananas). Adults emerge from cocoons in early spring and lay eggs in March or April. Because of habitat loss and climate change, the Bay Checkerspot is now only found in the Peninsula.



Bay Checkerspot caterpillar feeding on dwarf plantain.
Photo: T.W. Davies @ California Academy of Sciences

On August 26, the U.S. Fish and Wildlife Service set aside 18,293 acres within San Mateo and Santa Clara counties as habitat for this species.

Unfortunately, many insect conservationists are dissatisfied with the new plan, which resulted from a settlement of a lawsuit by the Home Builders Association of Northern California. The protected area now includes 25% fewer acres than what was originally set aside in 2001. The reduction resulted from residential development of some areas and removal of other portions because they were too forested for the butterfly to occupy. Hopefully efforts by concerned citizens and cities to enforce the protection of these lands from development and the management of serpentine habitats will lead to a resurgence of this rare butterfly.



Bay Checkerspot Butterfly
Photo: John Clecker, U.S. Fish and Wildlife Service