

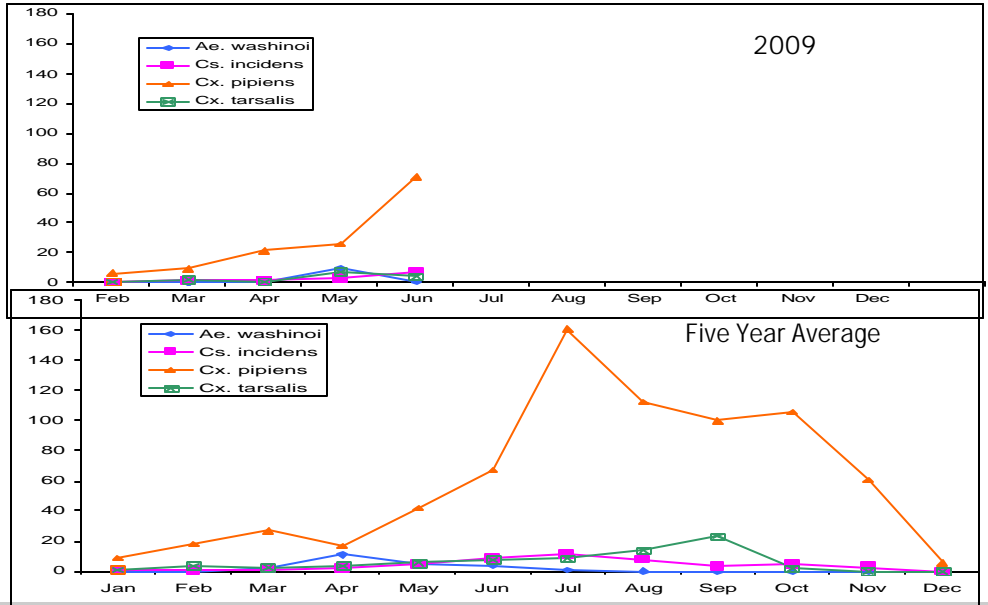


April 2009

Entomology Report

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Adult Mosquito Populations in CO2 Traps



Mosquito Control

In April, mosquito control technicians treated 1,200 backyard fishponds and fountains. The acreage occupied by marshes and impounds has begun to recede and no further helicopter treatments have been needed on Middle or Outer Bair Island since applications in March. The pipes carrying drinking water from Hetch Hetchy Reservoir were purged this month. As a result, dozens of acres of pickleweed marsh beneath the pipes in East Palo Alto have been flooded and are being treated for mosquito larvae.

Standing water is also receding in Mills Field and in seasonal impounds in San Mateo, Brisbane, Daly City Pacifica, Redwood City and other areas. These areas continue to receive treatment and are checked weekly throughout the spring.

Number of Sources Treated Per month by Source Type			
Source type	This month (Apr)	Last month (Mar)	Monthly Avg
Fishponds & Fountains	1,200	1,355	1,066
Containers	484	842	497
Ditches & Drainlines	136	72	120
Creek	10	2	40
Catch basins	14,218	167	24,712
Utility Vaults	82	57	102
Marshes & Impounds	173 (63 acres)	406 (2,727 acres)	187 (1,461 acres)
Neglected Swimming Pools	124	135	73
Water under Buildings	43	13	17

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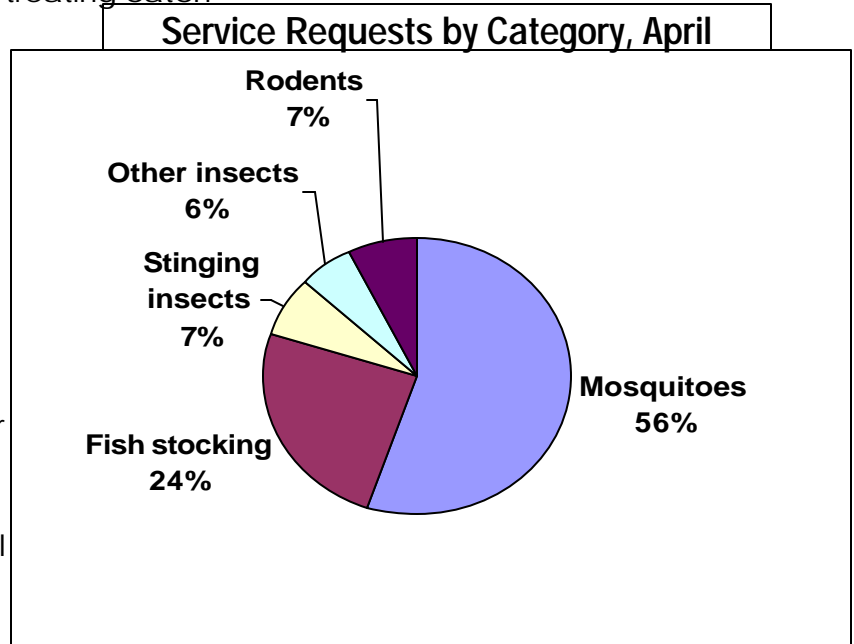


Mosquito Control Operations (continued) and Service Requests

Mosquito development got off to an early start in storm drain systems throughout the county. Mosquito control technicians have been treating catch basins in several cities all month.

District mosquito control technicians stocked fish in 41 backyard ponds in April and responded to a total of 168 requests for service from local residents. Over half of these were related to mosquito control (reports of standing water or adult and/or larval mosquitoes).

Yellowjackets and other wasps are also starting to make an appearance. The District received 6 requests for control of yellowjackets, 3 for paper wasps and 3 for information about honey bees. The District does not control honey bees but refers callers to a local bee keeper.



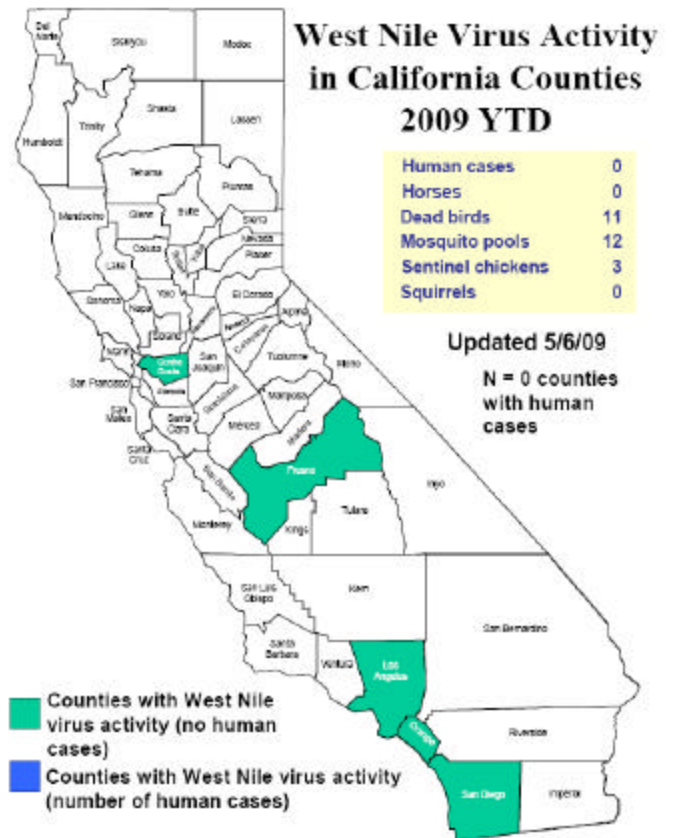
West Nile Virus Update

Statewide:

In 2009, 11 dead birds have tested positive for West Nile Virus (WNV) in five counties in California: Fresno (2), Orange County (2), San Diego (6), and Los Angeles (1). Los Angeles has also had three chickens and one mosquito sample test positive for WNV. Eleven mosquito samples testing positive from Contra Costa County represent the only indication of West Nile virus activity in the Bay Area this year. As of May 6, there have been no human cases of WNV in California in 2009. Overall, the statewide status of WNV is very similar to the status at this time last year.

San Mateo County:

As of May 12, in San Mateo County 70 dead birds have been reported in 2009. Of these, 17 have been tested for WNV and none were found positive. One squirrel has been reported, but was not in suitable condition for WNV testing.



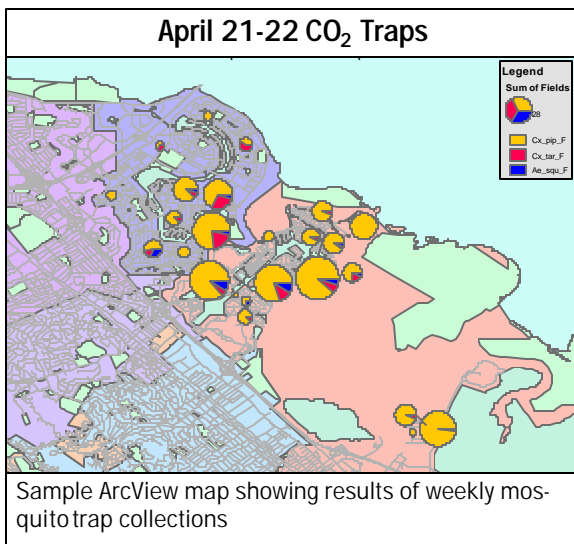


GIS Training Workshop

On May 6, district lab staff attended a workshop on creating maps using ArcGIS software. The focus of the training session was how to design maps that are effective on a webpage. District staff currently use the mapping software for several projects, such as displaying results of CO₂ trapping, rat activity in sewers, and the location of mosquito sources. With some modifications, these maps can be effectively used on our website to provide a visual and interactive image of vector surveillance efforts in the county. Other maps that could be included in the future include

tick density and rates of Lyme detection and the locations of dead birds reported or testing positive for West Nile virus.

Rather than simply viewing a static map, a person browsing the website would be able to interact with the map to see a variety of views, such as different results from each month of the year, or zoom in and out to focus on certain regions. Clicking on data points would reveal additional information about the collection and results at that location. Although some of the workshop covered applications the district doesn't currently use, the staff learned important tips about how to present maps that are clear to another person and how to format them so that the interactive functions are quick and the website runs smoothly.



ArcView (ArcGIS9) Mosquito Source Mapping Project

District lab and operations staff are currently collaborating on a mapping project of all the active, natural sources in the respective county zones using ArcView mapping software (ArcGIS 9).

When completed, source location details will be easily visible on a San Mateo County aerial map. Inspection and treatment data can be linked to produce specific reports. These ArcView maps should also facilitate greater efficiency with training during scheduled zone rotations.

Eventually, residential sources such as fishponds will also be mapped in Arcview through semi-automated geocoding of physical addresses. This process will convert address locations to specific latitude and longitudes and add them as data points in the map.



ArcView map showing identification numbers (in white) for natural mosquito sources in Zone 9 (East Palo Alto and East Menlo Park)



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SAN MATEO COUNTY
MOSQUITO AND VECTOR CONTROL

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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."***

Adult Mosquitoes Killed by Faux-Flower

Dr. Tom Kollars of Georgia Southern University has designed a device that mimics a flower and kills adult mosquitoes with nectar containing *Bacillus thuringiensis* (Bt). The microbial pesticide Bt is commonly used to control mosquito larvae, but is also toxic to adult mosquitoes if ingested. A mosquito who feeds on nectar with Bt will typically die within a couple of days.

The artificial flower, called the ProVector Bt, is a plastic device with a variety of colors designed to attract multiple mosquito species. The device has been tested by the Walter Reed Army Institute of Research, which found it successfully eliminates 50% to 100% of mosquitoes during trials. It is already being used around homes in Afghanistan while field experiments continue in other tropical regions.

The ProVector Bt is advantageous because *Bacillus thuringiensis* is a relatively safe and environmentally friendly pesticide. In this case, the Bt is presented to the mosquito directly from small containers, rather than released into water sources. In addition, the plastic device is inexpensive to produce, and will hopefully be available at a low cost. Although the ProVector Bt is not expected to supplant other mosquito control techniques, it could become a valuable tool in limiting the transmission of mosquito-borne disease, particularly in tropical areas.



Dr. Tom Kollars shows the design of the ProVector flower.*

* Photo from <http://www.georgiasouthern.edu/strategic/index.php?s=189>