Walk Like an Egyptian: Invasion of *Aedes aegypti* into California

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Aedes aegypti, the principal vector of yellow fever, dengue and chikungunya viruses, was discovered in California (Fresno and Madera and San Mateo Counties) during 2013. This represented the first record of adults collected in the State. In response to the invasion in the City of Clovis (Fresno County), the Consolidated Mosquito Abatement District (District) implemented a control program that included door-to-door inspections of residential properties to implement source sanitation efforts, residual larvicide applications and outdoor residual spray for adults, as well as public outreach and awareness campaigns. The District also utilized a surveillance grid to evaluate the sensitivity and specificity of four trap types to collect and survey for *Aedes aegypti*, including the ovitrap, BG Sentinel trap, CO_2 baited EVS trap, as well as a novel autocidal gravid ovitrap (AGO) developed by the CDC Dengue Branch in San Juan, Puerto Rico.

Ongoing surveillance did not detect *Ae. aegypti* from early December 2013 through February 2014 in Clovis. In March, adults were once again collected and their numbers gradually increased through summer. Further, adult *Ae. aegypti* were collected in new, disparate areas in central and southern California, including Tulare, Kern, Los Angeles and San Diego Counties.

During 2014, the District conducted a study to evaluate the use of AGO traps at a low density (one per residence) as a trap-kill method to reduce *Ae. aegypti* within an area of infestation in the Clovis. Although there was no significant difference in the number of adults collected in BG traps between the intervention and non-intervention areas, there was a significant reduction in the number of adults collected in AGO traps in the final two weeks of the study when compared to the previous four. This reduction in AGO collections observed over time suggests that the placement of AGOs at greater densities could reduce the number of older gravid females in the population and lower the potential for disease transmission.

Detection of *Ae. aegypti* and other exotic mosquitoes in areas considered outside their normal ranges and habitats, reiterates the need for heightened vigilance and for development of preparedness and response plans for the introduction of exotic vectors and emerging diseases.