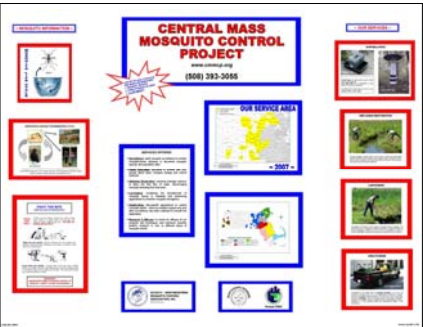


Aedes albopictus also known as the Asian Tiger Mosquito is an aggressive daytime biter. This habit may quickly get the attention of the public living near a newly established colony. The first indication a Mosquito Control Project may receive that this species has established a new colony in the service area are complaint calls from citizens.



To fully utilize the public's sensitivities to changes in their neighborhood the MCP must educate the public about mosquitoes in general.

This education must include information about...
 •The biology and life history of mosquitoes.
 •The biting habits of adult mosquitoes.
 This education must be ongoing and take many different forms such as brochures, flyers, seminars, websites and mass media events. The MCP must also impress upon the public that they are not helpless in the face of nuisance mosquitoes. The MCP must cultivate a relationship with the public wherein the public regards the MCP as a source of information and aid.



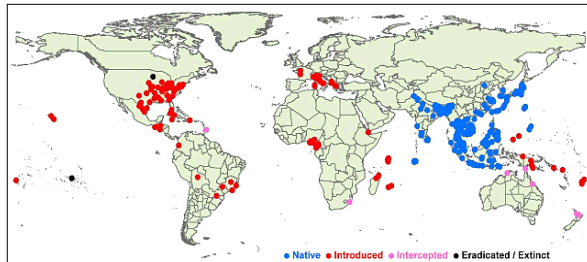
A display board used by the Central Massachusetts Mosquito Control Project to educate the public about mosquitoes and the CMMCP services. The board is placed for public viewing in such places as Town Halls and Community Health Fairs.

A brochure created by the Central Massachusetts Mosquito Control Project. In addition to being informative about mosquitoes and their life history, the brochure also encourages the citizen to be proactive about controlling mosquitoes.



ESTABLISHING AN *Aedes albopictus* SURVEILLANCE PROGRAM

By
 Curtis R. Best
 Staff Entomologist
 CMMCP



World Distribution of *Stegomyia (Aedes) albopictus*

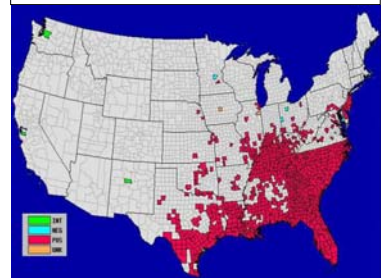
www.landcareresearch.co.nz/research/biocons/invertebrates/mosquitoes%20of%20New%20Zealand/images/albopictusDmap0.gif



As an inhabitant of artificial and natural containers, *Ae. albopictus* is especially prone to inadvertent transport of its relatively cold-hardy and long lived eggs.

Benedict, M. Q., R.S. Levine, W. A. Hawley and L.P. Lounibos. 2007. Spread of the Tiger: Global Risk of Invasion by the Mosquito *Aedes albopictus*. *Vector-Borne and Zoonotic Diseases*, Vol. 7, Number 1, 2007

Since its discovery in Houston, Texas in 1985 *Ae. albopictus* has colonized a vast area of the U.S.A.
 The early pattern of dispersal followed the interstate highway system, which suggests further dispersal by human activities.
 U. S. A. distribution of *Ae. albopictus*, updated 2003

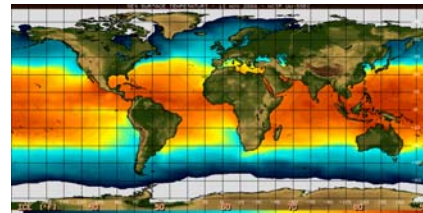


<http://www.cdc.gov/ncez/dod/dwblarbor/albopic-97-sm.htm>



Aedes albopictus, a mosquito native to Asia, has been one of the fastest spreading animal species over the past two decades.

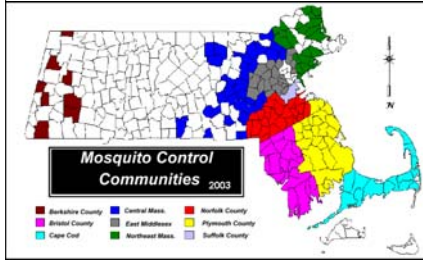
Benedict, M. Q., R.S. Levine, W. A. Hawley and L.P. Lounibos. 2007. Spread of the Tiger: Global Risk of Invasion by the Mosquito *Aedes albopictus*. *Vector-Borne and Zoonotic Diseases*, Vol. 7, Number 1, 2007



High temperature conditions, associated with climate change, may increase the rate of spread of *Ae. albopictus* by increasing rates of increase and by enhancing colonization due to rapid population growth.

Alto, A. W., and S. A. Juliano. 2001. Temperature Effects on the Dynamics of *Aedes albopictus* (Diptera: Culicidae) Populations in the Laboratory. *J. Med. Entomol* 38: 548-556.

A sustained surveillance program is the first step in preventing *Aedes albopictus* from colonizing Massachusetts. Such a program could build on the strengths of the existent mosquito surveillance programs of the Mosquito Control Projects and Massachusetts Department of Public Health.



Aedes albopictus is a non-migratory species with a flight range of less than 5 km. The rapidity of its spread to so many locations in the U.S. is therefore remarkable, and implies an efficient man-made dispersal mechanism. The early diffusion pattern of *Aedes albopictus* in the U.S. is related to the proximity of a county to an interstate (high volume traffic movement). Many counties infested with *Ae. albopictus* have interstates that run through them. The dispersion of *Ae. albopictus* also followed human commercial activity especially as it related to the movement of scrap tires for retreading, recycling, legal junk yards, illegal dumping, or other purposes conducive to the transport of *Ae. albopictus* eggs. Ratigan, W. C. 1999. The Asian Tiger Mosquito (*Aedes albopictus*): Spatial, Ecological, and Human Implications in Southeast Virginia



Sites like those mentioned above may have few if any residents that could serve as an early warning mechanism in regard to an introduced population of *Ae. albopictus*.

It would be preferable to detect *Ae. albopictus* before they became established and posed a nuisance to the public just outside these areas. Early detection would also increase the success of control efforts.

Mosquito Control Projects will need to devote personnel to the monitoring of possible entry points like those mentioned above to intercept the introduction of immature *Ae. albopictus*.

MCP's whose jurisdictions contain primarily natural mosquito breeding habitat will have to reorient a part of their surveillance effort to focus on artificial habitats in urban areas where mosquitoes have historically caused little alarm.

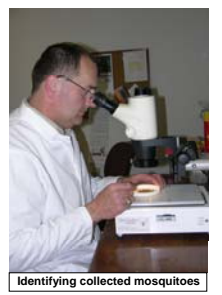


Mosquito Control Surveillance Team member investigating artificial containers in an urban area for *Ae. albopictus* breeding.



Mosquito Control Surveillance Team member collecting adult mosquitoes in an urban area for later identification.

Aedes albopictus has expanded its range so quickly and so broadly that it has been included in a list of the one hundred most invasive species in the world. In a matter of decades the species has colonized vast areas of the United States of America. In the advent that this species colonizes Massachusetts it is likely that it will create the same problems that it has caused in other regions of the country. Wherever *Ae. albopictus* has established itself it has become a primary nuisance mosquito. Also, it creates the potential for increased transmission of numerous arboviruses. The early detection of an infestation lies in the ability to determine which areas in the region are most likely to be a destination for interstate shipping and commerce especially from states already infested with *Ae. albopictus*. MCP'S having the responsibility to protect their constituent communities must take up the lead in the surveillance for *Ae. albopictus*. To do so effectively the MCP may need to reorient personnel and resources in order to monitor sites that have posed little mosquito problems in the past.



Identifying collected mosquitoes



Aedes albopictus larva and pupa