

## HOW DO WE PROTECT YOU?

The Placer Mosquito and Vector Control District is aware of the impact high populations of Western treehole mosquitoes can have on the public. Some of the things we do to manage Western treehole mosquito populations:

- Identify treeholes** that hold water and eliminate or treat the water to prevent adult mosquitoes from emerging.
- Support research** that is designed to identify more efficient control methods.
- Conduct adult mosquito surveillance** to monitor adult mosquito population levels and help direct control operations.
- Engage** in community-wide efforts to reduce adult mosquito abundance.
- Conduct outreach** to educate the public about mosquitoes and mosquito-borne disease.

## HOW CAN YOU CONTROL WESTERN TREEHOLE MOSQUITOES ON YOUR PROPERTY?

- Inspect trees** for holes, including holes as small as 1/2" that lead to cavities that can hold water.
- Fill holes** with water-absorbing polymer or sand to prevent mosquito development in standing water.
- Remove buckets**, toys, tarps or other items holding water.
- Check your gutters** for clogs and standing water.
- Contact the District** for help inspecting your property and identifying problem areas; where appropriate, an adulticide may be applied to reduce numbers of adult mosquitoes.

## THE MOSQUITO LIFE CYCLE



### Egg stage

An adult female treehole mosquito is able to lay hundreds of eggs which can lie

dormant even if the treehole dries up. Eggs hatch after the treehole is re-filled with water and the weather gets warm enough for the mosquito larvae to survive.



### Larval stage

Larvae can be found close to the surface of the water where they breathe and feed.

Larvae shed their skin four times during the next several days or weeks, finally changing into a pupa.



### Pupal stage

In the pupal stage, the mosquito grows inside of a cocoon-like shell. Once fully developed,

the pupal skin splits and the mosquito emerges as an adult.



### Adult stage

The newly emerged adult mosquito rests on the surface of the water until it is strong

enough to fly. Female mosquitoes require a blood meal to lay eggs. Male mosquitoes do not feed on blood. Female mosquitoes are attracted by heat and carbon dioxide to hosts such as humans, mammals, and birds. Diseases are transmitted when female mosquitoes feed on an infected host and then feed on an uninfected host.

## FIGHT THE BITE

by practicing the District's **3Ds** of protection:

- 1. DRAIN** any standing water that may produce mosquitoes.
- 2. DEFEND** yourself against mosquitoes by using an effective insect repellent, such as DEET, Picaridin or Oil of Lemon Eucalyptus. Make sure you follow label directions!
- 3.** Contact the **DISTRICT** for help. We are here to serve you. Call us at (888) 768-2343, or visit us online at [www.placermosquito.org](http://www.placermosquito.org).

*Your tax dollars hard at work*

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The Placer Mosquito & Vector Control District is concerned about protecting and preserving the environment. We strive to cut down on waste and use eco-friendly materials wherever possible.

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HAVE YOU SEEN ME LATELY?  
**Aedes sierrensis**  
THE WESTERN TREEHOLE MOSQUITO



*Protecting Public Health since 2001*



## HAVE YOU NOTICED MORE MOSQUITOES LATELY?

Warmer weather and longer days in the Placer County foothills trigger the emergence of Western treehole mosquitoes (*Aedes sierrensis*), a common nuisance mosquito and the most important vector of Canine (Dog) Heartworm.

Western treehole mosquitoes are widely distributed in Western North America from Mexico to British Columbia, and throughout California. Adult mosquitoes of this species are characteristically very small, dark insects with brilliant white bands on their legs. They can live up to six months and are active from early spring through the summer.

## ABOUT WESTERN TREEHOLE MOSQUITOES

Western treehole mosquitoes are found in areas where older trees have had time to develop rot cavities or pockets between or within limbs which can hold rain or irrigation water.

Occasionally larvae are also found in containers in which plant debris and leaves have accumulated. The eggs remain dormant until the container is refilled with water by rain or irrigation, typically when fall storms fill the holes with water.

Female mosquitoes feed on a wide variety of mammals, and will aggressively try to bite people at any time of day. During times when Western treehole mosquitoes are very abundant, parks, open spaces, and other areas near mature trees or orchards will often have aggressive mosquito activity. It is important that

individuals take measures to protect themselves from mosquito bites by wearing an effective repellent, long sleeves and pants, and notifying the District for additional information or assistance if necessary

### Adult Mosquito Behavior

The mating behavior of Western treehole mosquitoes is unusual. After a period of larval development, adult males begin to emerge about two weeks before the females.

They feed on nectar or other plant juices, and then begin to form “mating swarms” around mammals, including humans. Female mosquitoes start to appear later, and when attracted to a mammal host for a blood meal, they enter the mating swarms formed by the waiting males.

When people casually encounter the male mating swarms in the early spring they may feel they are being attacked; however male mosquitoes do not bite.

After emergence of the female mosquitoes, aggressive biting is quite possible. In years where there is regular summer rain it is possible to have Western treehole mosquitoes present later in the year.

### Can these mosquitoes transmit disease?

Western treehole mosquitoes are not known to commonly vector human disease, but they are the primary vector of the parasite (*Dirofilaria immitis*) that causes heartworm in dogs and cats. Western treehole mosquitoes are unlikely to transmit West Nile Virus.

## WHERE WESTERN TREEHOLE MOSQUITOES DEVELOP

The Western treehole mosquito life cycle is centered around standing water that accumulates in holes in the trunks and branches of trees or even artificial containers and tires. A wide variety of trees are



Fill treeholes with sand or an absorbent polymer like Agrosoko.

commonly used by Western treehole mosquitoes, with oaks being the most common in Placer County.

Female mosquitoes can lay 200 to 300 eggs on the damp surface of the treehole or container just above the water line. The eggs remain dormant until the treehole or container is refilled with water. The eggs hatch shortly after submersion, producing larvae which develop into pupae as temperatures are warm enough to support adult mosquito activity. A few days later, adult mosquitoes emerge. Adult female mosquitoes will then seek a blood meal, mate, and return to a suitable water-filled treehole or container to continue the cycle.



Old tires are mosquito breeding habitats. Dispose of them properly.

**The Placer Mosquito and Vector Control District** strives to reduce mosquito and other vector populations, promote awareness of vectors and vector-borne diseases, and decrease health risks to residents in Placer County.

Since 2001, the District has worked diligently to:

- **educate and inform** the public about current and emerging mosquito and vector-borne diseases
- **inspect, reduce and eliminate** mosquito breeding sources in Placer County
- **employ Integrated Vector Management** strategies and techniques to reduce vector populations and protect public health from mosquitoes and mosquito-borne diseases
- **use public funds efficiently** and responsibly to achieve the District’s mission