

## HOW CAN YOU PROTECT YOURSELF FROM MOSQUITOES?

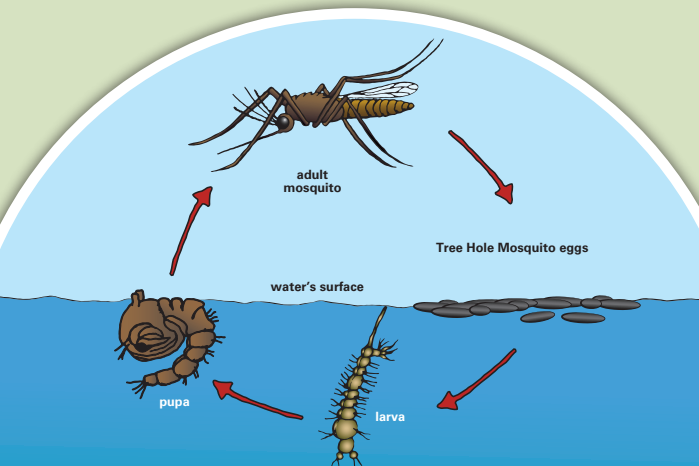
- Minimize outdoor activities at dawn and dusk when mosquitoes are most active.
- Drain any standing water around your house.
- Wear long sleeves and pants at dusk and dawn.
- Use an insect repellent approved by the EPA and recommended by the CDC.

## HOW TO CONTROL WESTERN TREE HOLE MOSQUITOES ON YOUR PROPERTY

- Inspect trees for holes or cavities that can hold water.
- Fill tree holes with water-absorbing polymer crystals or contact your local nursery or tree surgeon for recommendations.
- Dump all buckets, toys, tarps, flower pot saucers or other items that hold water.
- Check and clean your house gutters of debris and standing water to ensure they drain properly.

## THE MOSQUITO LIFE CYCLE

Mosquitoes complete their lifecycle through a complete metamorphosis, growing from egg to larva to pupa, and finally to an adult. Mosquitoes need standing water to complete their lifecycle. You can reduce mosquitoes around your home by draining all standing water.



## ABOUT CONTRA COSTA MOSQUITO & VECTOR CONTROL DISTRICT

### Protecting Public Health Since 1927

Early in the 1900s, Northern California suffered through epidemics of encephalitis and malaria, and severe outbreaks of saltwater mosquitoes. At times, parts of Contra Costa County were considered uninhabitable resulting in the closure of waterfront areas and schools during peak mosquito seasons. Recreational areas were abandoned and Realtors had trouble selling homes. The general economy suffered. As a result, residents established the Contra Costa Mosquito Abatement District which began service in 1927.

Today, the Contra Costa Mosquito and Vector Control District continues to protect public health with environmentally sound techniques, reliable and efficient services, as well as programs to combat emerging diseases, all while preserving and/or enhancing the environment.

### FREE Services for Contra Costa County Residents

**MOSQUITOES**  
Inspection and control

**TICKS**  
Tick identification

**MOSQUITOFISH**  
Free for residential ponds

**RATS AND MICE**  
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**YELLOWJACKETS AND BEES**  
Ground-nest and swarm control

**SKUNKS**  
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Aedes sierrensis photos © Sean McCann [www.flickr.com/photos/deadmike/](http://www.flickr.com/photos/deadmike/)



# TREE HOLE MOSQUITOES



CONTRA COSTA  
**MOSQUITO  
& VECTOR  
CONTROL  
DISTRICT**



## Common Name: THE WESTERN TREE HOLE MOSQUITO

Scientific Name: *Aedes sierrensis*

The Western tree hole mosquito (*Aedes sierrensis*) receives its name because the immature stages of this mosquito species are frequently found in water contained in rot-holes of trees, such as oak, laurel, madrone, eucalyptus, and other local tree species. They will occasionally breed in artificial containers such as roof gutters, tires, cans, and buckets.

They are frequently pests in residential and recreational areas March through August, where large numbers of trees are present. As vicious biters, they can be a severe nuisance and are the vector of dog heartworm disease in California. Tree hole mosquitoes prefer to feed outdoors, but sometimes enter homes during the mid-morning or late afternoon. Like all species of mosquitoes, only the female bites.

## KNOW YOUR TREE HOLE MOSQUITO

### WHAT DOES A WESTERN TREE HOLE MOSQUITO LOOK LIKE?

The Western tree hole mosquito (pictured below and to the left) is small, dark-bodied, and has white markings on its back and legs.



### HOW CAN I PREVENT WESTERN TREE HOLE MOSQUITOES?

An adult female tree hole mosquito is able to lay hundreds of eggs which can remain dormant for months, even if the tree hole dries up. Eggs hatch after the tree hole is re-filled with water and the weather gets warm enough for the mosquito larvae to survive.



**Examine trees for holes or cavities and add water absorbing polymer crystals if needed.**

Residents should examine trees on their property for holes, cavities or crotches. These can hold water and provide mosquito habitat. Adding water absorbing polymer crystals available at local nurseries to the holes are often a sufficient remedy, however, residents may want to contact their local nursery or tree surgeon to determine the best way to correct the problem.

## TREE HOLE MOSQUITOES AND HEARTWORM

### WHAT IS DOG HEARTWORM DISEASE?

Canine heartworm disease is a clinical condition in dogs caused by a roundworm, *Dirofilaria immitis*, which resides within the dog's heart and lungs. This disease, a serious and possibly fatal veterinary problem, is associated with dogs, coyotes, and foxes. Canine heartworm is transmitted by the bite of an infected Western tree hole mosquito.

### WHAT ARE THE SYMPTOMS OF DOG HEARTWORM DISEASE?

The outward symptoms of the disease are not noticeable in most cases, until reduced blood flow caused by adult worms damages the heart, lungs, liver, and kidneys. Advanced symptoms of heartworm may include rapid tiring, shortness of breath, chronic soft or dry cough, listlessness, and weight loss.

### HOW CAN I PREVENT MY DOG FROM ACQUIRING HEARTWORM?

Check with a veterinarian regarding treatment options and prevention. Drugs are available to prevent the disease and it is curable if diagnosed in the early stages. In California, the time of highest risk for dogs to contract heartworm is March through August, however unseasonable rain may extend this period.

### HOW DOES A WESTERN TREE HOLE MOSQUITO TRANSMIT DOG HEARTWORM DISEASE?

A dog already infected with heartworm is bitten by a tree hole mosquito. That mosquito, now infected with the microfilariae (very small worms), can then go on to bite a different dog. Now that dog is infected. The microfilariae work their way to the dog's heart and adjacent large blood vessels and through the blood stream where they continue to grow. As adults, they produce more microfilariae and the heartworm life cycle continues.

