

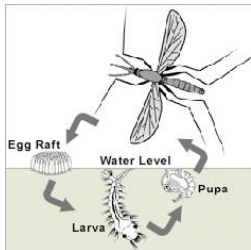
MOSQUITO CONTROL

VECTOR CONTROL HOTLINE 805/658-4310
MOSQUITO FISH REQUEST
805/662-6582

Mosquitoes are insects that initially develop in water and hatch out as adults. Adult female mosquitoes often seek a blood meal prior to laying their eggs. Most of the time mosquitoes are a nuisance but they have also been implicated in the transmission of many diseases. There are typically 15 species of common mosquitoes found in Ventura County. Many of these have specific habitats. For example, some may prefer creeks or marshes, others prefer gutters or catch basins, and still others may prefer tree holes.

There are also other biting flying insects that may be mistaken for mosquitoes. These include black flies or biting midges. If you are being bitten, it is important to collect samples of what is biting you. In most cases, the Environmental Health Division (Division) vector control staff can determine the insect species causing the problem.

How do mosquitoes grow?



All mosquitoes require water in which to pass their early life stages (eggs, larva and pupal stages); this usually takes from 7 to 10 days. Most mosquitoes lay their eggs in standing water, where they hatch in a day or two. This may be along creek margins, in containers, gutters, tires, or ponds. Any location where water stands for over two weeks may become suitable for mosquito breeding. Other types of mosquitoes lay their eggs in the dirt along creek edges or dry ponds where they remain until covered by water, then hatching occurs. The mosquito eggs hatch into the larval stage (also called wigglers) where the larva wiggle through the water feeding on minute particles. This stage lasts for about one week. The larva then changes into the pupal stage called tumblers. This stage is where the larva changes into the adult mosquito. When the adult mosquito is ready to emerge, the skin of the pupa splits open and the adult mosquito climbs out. Adult mosquitoes typically emerge during the summer months and usually live for approximately two weeks. Mosquitoes that emerge in late summer may survive through the winter months if conditions and habitats are ideal. They frequently rest in grasses, shrubbery, or other foliage, and in shaded, secluded, or protected areas, including: doghouses, chicken coops, under eaves, etc. Adult mosquitoes generally feed on flower nectar. However, female mosquitoes also bite humans and animals to obtain a blood meal needed to develop their eggs. Many species of mosquitoes can transmit diseases such as West Nile Virus, St. Louis Encephalitis and Malaria when they bite.

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Where can I find mosquito larva?

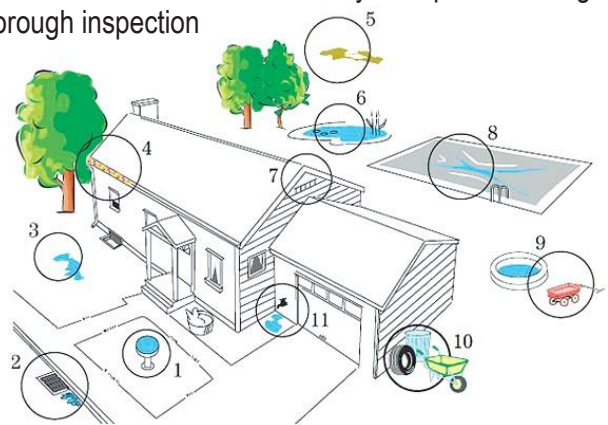
Larva may be found any place around your home where water collects, such as old tires, wading pools, clogged gutters, wheelbarrows, etc.

You may be raising mosquitoes!

Homeowners can help reduce mosquito transmitted diseases and nuisance conditions caused by mosquito breeding around their homes by eliminating standing water. Start with a thorough inspection of your property to determine sources of standing water.

Here are some places to check

1. Birdbaths.
2. Street gutters and drains.
3. Low-lying depressions in lawn areas.
4. Roof gutter and eave troughs.
5. Compost piles.
6. Ornamental ponds and pools.
7. Missing or damaged screens for windows and attic vents.
8. Pool covers.
9. Toys, wading pools, and other objects around the yard that can hold water.
10. Wheelbarrows or tires that are left outside.
11. Leaky faucets.



Control Techniques:

1. Water holding containers of any kind

Remove or empty out old tires, tin cans, buckets, bottles, jars, drums, tarps, etc. Small boats, wheelbarrows, etc. should be stored upside down.

2. Wading pools/swimming pools

Children's wading pools should be emptied weekly and stored indoors when not in use. Infrequently used swimming pools should be emptied or tightly covered. Rain water collected on pool covers should be drained.

3. Water dishes and birdbaths

Change water in dishes of pets and chickens daily; change water in birdbaths twice weekly. Animal pens should be kept free from any standing water.

4. Cut flowers

Change water in outdoor and indoor vases twice weekly.

5. Roofs and gutters

Check roof gutters and drain pipes to see if any are plugged or sagging. Flat roofs should also be checked for standing water and roof drains inspected to insure they are free of obstructions. Clean or fix as needed.

6. Leaky faucets and hoses

Repair all leaking exterior faucets, hose nozzles and connections.

7. Drainage basins

Monitor sump pits, dry wells, or drainage basins as needed to eliminate stagnant water where mosquitoes can breed.

8. Cesspools and septic tanks

Insure that cesspools or septic tanks are operating properly and not overflowing. The covers should fit tightly. Failed septic systems must be repaired or connected to the public sewer system when and where available.

9. Ornamental ponds

Consider stocking ponds with mosquito fish.

10. Creeks and drains

Be sure to keep creeks and drains open, free of grass, plants, leaves, trash, algae, or other material that may be blocking the water flow.

11. Hollow tree stumps or tree holes

Monitor hollow tree stumps or tree holes for water accumulation that may lead to mosquito breeding. A dead tree stump may be filled with sand.

12. Missing or worn out screens

Properly fitted window screens prevent mosquitoes from entering structures.

If mosquitoes are still bothering you: If mosquitoes continue to bother you and you have eliminated mosquito breeding sources around your house, the mosquitoes are most likely coming from sources off of your property. These problems should be reported to the Ventura County Environmental Health Division Vector Control staff.

How are mosquitoes controlled?

Mosquitoes are generally controlled in the larval and pupal stages. Adult stages may be controlled during periods of possible disease transmission. Division Vector Control Staff typically uses physical, natural, biological, or chemical control measures to disrupt or eliminate the mosquito life cycle. Division staff also stocks and supplies mosquito fish for the control of mosquito larva and pupa; and inspects and monitors over 2,600 mosquito breeding sites throughout the County on public and private property.

Physical control

This consists of filling in small puddles, opening blockages in creeks to restore the water flow, raking out algae or other debris, etc. This eliminates the site or makes the site less desirable for mosquito egg laying.

Natural control

Many mosquito breeding sources can be made less desirable by physically altering the source or the specific habitat. For example, having less vegetation in the water may allow natural predators to control the mosquito larva better.

Biological control

Biological products are typically safe for non-target organisms and do not pollute the environment. Most products are for the mosquito larval stages only. For example, Vectobac and VectoLex are two products that are very effective for controlling the mosquito larva.

Chemical control

Chemical control may be used to control either the aquatic or the adult mosquito stages. The adult mosquitoes disperse quickly after hatching and are more difficult to control since a larger area would need to be treated.

Mosquito fish

Mosquito fish (*Gambusia affinis*) are surface feeding fish and are ideal for mosquito control. They may be used in abandoned swimming pools, ponds, or other confined water sources where mosquito problems are occurring. The Division's Vector Control staff delivers mosquito fish upon request (Call 805/662-6582). Depending on the size of the pool, it may take the mosquito fish one or two months before they multiply into sufficient numbers to control all of the mosquitoes. Additional control may be needed if mosquito breeding is occurring.

The role of the Environmental Health Division

Division staff monitors and controls mosquito breeding in areas such as flood control channels, drains, roadsides ditches, catch basins, gutters, creeks, marshes, retention and detention basins, pools and rain water depressions. The Division's Vector Control Program depends on public participation to eliminate backyard-breeding sources.

Division staff also maintains an encephalitis virus and West Nile Virus surveillance program throughout Ventura County. Adult mosquitoes are trapped and submitted for laboratory analysis to detect the presence of these viruses. Four sentinel chicken flocks are used to monitor the potential transmission of encephalitis and West Nile Virus by mosquitoes. These are located in Camarillo, Thousand Oaks, Simi Valley, and the Fillmore area.