

## CONTROL

Control of the immature (larva) mosquito is most effective. The Health Department's Vector Control staff use 3 methods to reduce mosquito populations.

- Physical - This involves modification of aquatic habitats to prevent larval growth.
- Biological - Encouragement of natural predators of mosquitoes (e.g., dragonflies and mosquito fish).
- Larvicides - When other methods cannot reduce mosquito populations, the Department uses 2 environmentally compatible materials. A bacterial protein crystal (Bti) and an insect growth regulator (methoprene) are the only larvicidal materials currently used.

When larvicides cannot reduce populations to tolerable levels, applications of a fog which target adult mosquitoes are made. The material used is a derivative of the African chrysanthemum flower (pyrethrum).

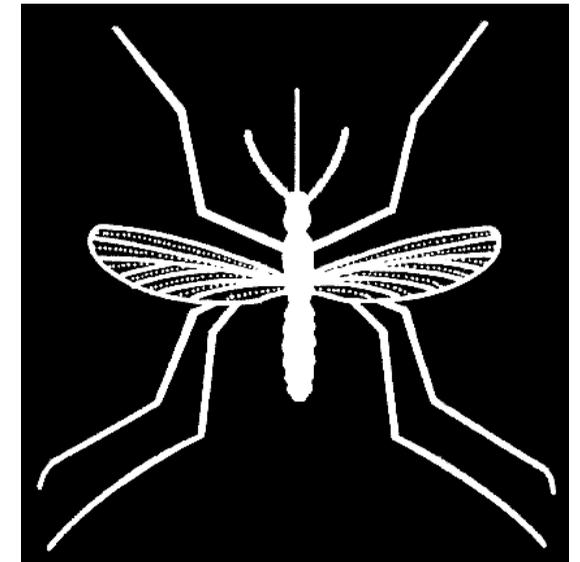
### WHAT YOU CAN DO:

- Eliminate all sources of standing water from your property.
- Ensure that window screens are installed and in good repair.
- Wear long pants and long sleeved shirts during periods of increased mosquito activity.
- Use repellants such as DEET when mosquito contact is unavoidable ( be sure to follow label instructions).
- Vaccinate dogs against canine heartworm as this is transmitted by mosquito bites.
- Report heavy mosquito activity or possible mosquito sources to the Health Department.

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# DISTRICT HEALTH DEPARTMENT



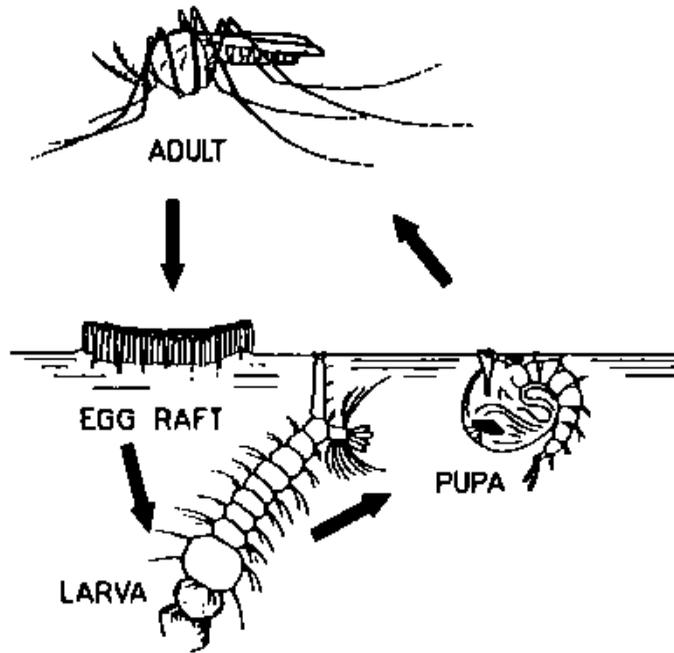
## MOSQUITO CONTROL

## GENERAL INFORMATION

Mosquitoes are blood-sucking insects that belong to the same group as flies. Their biting habits are irritating and can ruin outdoor activities. They are important because some types can transmit organisms that can cause disease in pets, domestic animals and humans.

## LIFE CYCLE

Mosquitoes have four life stages: egg, larva, pupa, and adult.



Depending on the type of mosquito and environmental conditions, the life cycle can be completed in as short a time as 3 days or as long a time as 4 months.

## AQUATIC STAGES

The aquatic (immature) stages include the egg, larva, and pupa. They require standing water to develop. Adult female mosquitoes lay eggs in a variety of aquatic habitats, including irrigated pastures, marshes, ponds, and man-made water sources. A single adult female mosquito can lay as many as two hundred (200) or more eggs at one time. Larval development consists of four stages called instars. Mosquito larvae feed on microscopic organisms or particles in the water. Pupae are distinguished by an enlarged upper region that gives them the appearance of small, coiled up tadpoles. The larva and pupa both must wiggle to the surface of the water to breathe. The pupa is the final stage before adulthood and usually lasts no more than a few days prior to emergence of the adult mosquito.

## ADULT MOSQUITOES

Adult female mosquitoes take blood meals from reptiles, birds and mammals. Blood is necessary for egg production. The mosquito feeds by inserting its mouthparts (called proboscis) into the host's skin. The proboscis is a complex structure which allows for the simultaneous injection of saliva and drawing of blood. A mosquito bite can cause you to develop itching. This is an allergic reaction to the mosquito's saliva which prevents the blood from clotting. Localized swelling occurs as the body sends extra blood to the site of the bite.

## HEALTH CONCERNS

- Secondary infections may occur when bites are scratched open and bacteria enter.
- Encephalitis (sleeping sickness) is a disease caused by a virus carried by a particular mosquito (Culex tarsalis). The mosquito becomes infected while feeding on birds that harbor the virus. They can transmit the virus

to other animals or humans. This mosquito is found in the Reno - Sparks area and usually bites during the early evening hours. The virus causes inflammation of the brain. Symptoms are flu-like with a high fever. Severe cases can result in mental retardation, motor impairment, or death. As horses can also become infected, owners are encouraged to have their animals vaccinated against equine encephalitis. Vector Control staff monitor virus activity and concentrate control measures against this species.

- Malaria is caused by a protozoan (single celled animal) which attacks the red blood cells. Malaria is a flu-like illness with chills, fever, and sweating that recurs every 2 to 3 days. The malaria parasite can cause liver and kidney damage or death. Mosquitoes become infected while feeding on other humans that harbor the parasite. Only certain mosquitoes (Anopheles species) are capable of transmitting the parasite. Today, this disease is seen primarily in tropical areas. These mosquito species occur only rarely in the Reno - Sparks area.
- Yellow fever, dengue or breakbone fever, and Rift Valley fever are among other mosquito-borne diseases occurring in other parts of the world.