

CONTROL CONSTRAINTS

The overwintering *Anopheles freeborni* females are not easily controlled during the cool weather months. The District usually cannot fog for mosquitoes in the winter and early spring months due to its ineffectiveness compared to the warmer spring and summer months.

Certain conditions have to be met in order to effectively control adult mosquitoes. During the warmer months the District sprays for mosquitoes before the sun rises in the mornings and after it has set in the evenings. This is not usually possible in January, February, or March since the temperature is not warm enough to spray during those times.

The overwintering mosquitoes are usually most active during sunlight hours. The District does not spray during sunlight hours due to improper weather conditions such as the lack of an inversion layer, UV rays reducing the pesticides effectiveness, and the risks to non-target beneficial insects.



THE ANOPHELES FREEBORNI LIFE CYCLE

Egg stage

An adult female mosquito can lay approximately 100-400 eggs which float on the surface of the water, or eggs may be laid singly on the surface of the water. Within 2-3 days the eggs hatch into larvae.



Larval stage

Larvae can be found close to the surface of the water where they breathe and feed. Larvae are found in a wide variety of standing water sources including rice fields, ditches, ponds, and horse troughs. 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.



Butte County Mosquito & Vector Control District

Since 1948

The District covers over 1600 square miles, and includes all of Butte County, except the small areas served by the Durham and Oroville Mosquito Abatement Districts, which were formed earlier. The District also includes the Hamilton City area of Glenn County. In April of 1994, "Vector Control" was added to the District name to reflect the additional disease surveillance and information now provided.

OUR MISSION

The mission of BCMVCD is primarily to suppress mosquito-transmitted disease and to also reduce the annoyance levels of mosquitoes and diseases associated with ticks, fleas and other vectors through environmentally compatible control practices and public education.



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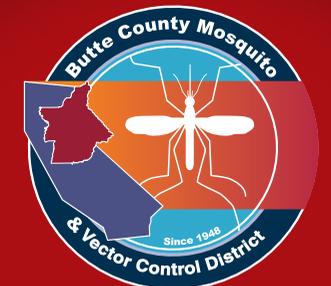
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(530) 342-7350

www.BCMVCD.com

ANOPHELES FREEBORNI



MOSQUITOES BUGGING YOU?

The later parts of summer and early fall bring extremely high populations of the Western Malaria mosquito (*Anopheles freeborni*) to most of Butte County and Hamilton City. The majority of these mosquitoes are bred in agricultural lands throughout the west and south areas of the county.

This mosquito is medium sized, brown to tan in color, with long legs, and dark spots on the wings. It is a very aggressive mosquito and is readily found in and amongst homes, barns, yards, and vegetative areas. This pest also has the ability to fly long distances in one night, allowing it to fly from its rural breeding site to urban areas. This mosquito is commonly found throughout most of California and is a severe pest in rice growing areas.

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.

ABOUT ANOPHELES FREEBORNI

While cold winter weather kills most species of adult mosquitoes, the adult female *Anopheles freeborni* hibernates during these months.

In the fall these mosquitoes disperse several miles from their breeding sources to seek shelter in protected places, such as houses and outbuildings. They are often a nuisance at this time.

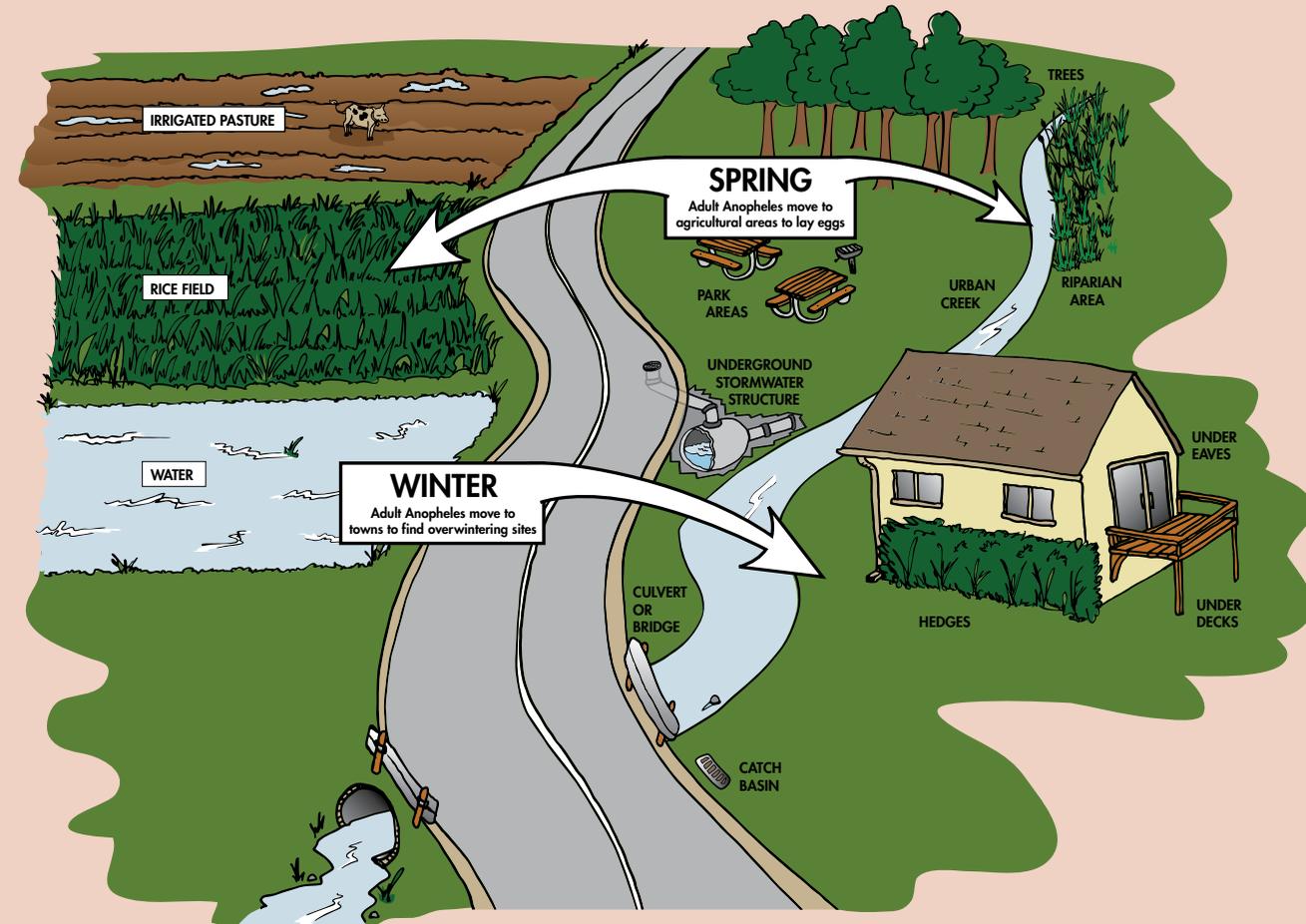
On warm, sunny days, only screened windows and doors should be opened. Keep screens in good repair. If mosquitoes do get inside your house, they may be found resting on walls, under sinks, in closets, etc.

A warming trend in January, February or March sounds a wakeup call to these mosquitoes. They are extremely hungry and are looking for a blood meal that will nourish their developing eggs.

Biting females are most bothersome during the afternoons and early evenings. Fortunately, the problem usually lasts only as long as the warm days persist.

Adult behavior

The adult population reaches its peak in August. Females hibernate during the winter months and disperse from their hibernating sites in February or March. Females will readily enter houses during peak activity time. Males do not bite but feed on nectar and plant juices.



Where they breed

Their breeding patterns and life cycle are slightly different from other mosquitoes. *Anopheles freeborni* prefer standing water that is open and sunlit with vegetation and algae present. Such sources include rice fields, creek isolations, ponds, swampy areas, stream edges, and drains.

Can these mosquitoes transmit disease?

The Western Malaria Mosquito is considered unlikely to transmit West Nile virus. These mosquitoes historically transmitted malaria and were involved in the malaria epidemics during the late 1800's and early 1900's in northern California.

Although malaria is not currently a concern in California, the potential for disease transmission exists if malaria is reintroduced through an imported human case. The District works closely with state and local health departments to monitor new and reemerging vector-borne diseases.