
Butte County Mosquito and Vector Control District

POLICY MANUAL

POLICY TITLE: Mosquitoes and Mosquito-Borne Disease
POLICY NUMBER: 4020

4020.1 Mosquitoes. Out of 3,500 mosquito species world-wide, there are 53 known species in California, of which 25 species are commonly found in Butte County. These insects go through four life stages, egg, larvae, pupa and adult. The first three stages are aquatic and require water to survive. The egg and pupa stages do not eat. Adult female mosquitoes need a blood meal from a mammal or bird to be able to produce fertilized eggs, while adult male mosquitoes feed on plant nectar and juices. The life-cycle from eggs to adult can take as little as three to five days, after which the adult may live from three weeks to a year. Female mosquitoes can have up to three to four egg broods during their lifetime. Each egg brood contains between 100-400 eggs.

Regardless of population size (both larval and adult populations), several species within the District's service area are of public health concern including *Culex tarsalis*, *Culex pipiens*, *Anopheles freeborni*, *Aedes melanimon*, and *Aedes sierrensis*. The District recognizes that all mosquito specie populations are of some significance, but the aforementioned species are the District's priority.

4020.2 Mosquito-Borne Disease. The District utilizes an extensive virus surveillance program to monitor mosquito-borne disease throughout the District's service area. Mosquito-borne diseases are monitored by capturing live mosquitoes by a wide variety of traps and/or aspiration, collecting and testing dead birds, and taking sera samples from sentinel chickens which are placed throughout District's service area. In addition, the District receives other monitoring factors, such as reports from the Butte County Public Health Department and the California Department of Public Health.

4020.2.1 West Nile virus (WNV) is currently the most challenging disease to the District. WNV is transmitted by the bite of an infected mosquito to birds, mammals, and humans. WNV spread rapidly since its arrival in New York in 1999, especially in urban environments. WNV arrived in Butte County in 2004 and WNV activity has occurred each year since its arrival. WNV is now considered endemic within the District's service area.

4020.2.2 Other mosquito-borne diseases that the District has encountered and/or monitors are canine heartworm, malaria, western equine encephalomyelitis (WEE), California encephalitis (CE), St. Louis encephalitis (SLE), and Japanese encephalitis (JE). Other potential mosquito transmitted diseases that could be introduced or reemerge are yellow fever, dengue fever, Rift Valley fever (RVF), chikungunya virus (CHIKV), and others.