



FAQ 2. Why do we need mosquito control?

With over 20% of Delaware's surface area consisting of wetlands and with the state having a relatively high human population density along with an abundance of domestic mosquito breeding sites, there are plenty of opportunities for mosquitoes to present a problem both for our residents statewide and for visitors to our coastal resort areas. For over 75 years, there has been a strong call for organized mosquito control within the First State. Under a statutory mandate from our citizens, the Mosquito Control Section does our best to provide these quality-of-life and public health services in as environmentally-compatible manner as practicable.

We are tasked to minimize **quality-of-life, public health, and economic problems** caused by mosquitoes. The modern control tools that we have include insecticides, which we must judiciously apply to mosquito production habitats to control immature stages and which we sometimes have to directly apply over or within areas where people live, work, or recreate to control adult mosquitoes. We also employ mechanical wetland management techniques for larval control that must be carefully implemented in very sensitive, very valuable environments.

Delaware has about 57 species of mosquitoes, and more than a dozen of these species are human biters. Problem-causing mosquitoes originate from our coastal marshes, wet woodlands and swamps, and many urban or suburban locations where they can prolifically breed in almost any type of man-made structure or container that collects and holds water for 4 days or longer.

A problem species since the late 1980's in Delaware is the **Asian tiger mosquito**, which was accidentally imported from Japan with scrap tires destined for recapping. The Asian tiger mosquito is now the #1 urban nuisance mosquito from New Orleans to Chicago to Baltimore. In Delaware, because of its abundance and aggressive daytime biting behavior, the Asian tiger mosquito now causes problems statewide.

In addition to personal discomfort and nuisance, uncontrolled mosquito populations can also have **significant adverse impacts on local economies** that are based upon tourism, outdoor recreation, or animal husbandry and can have undesirable effects on your property value. As such, mosquito control helps to maintain a good quality-of-life and robust economy throughout Delaware. Without our continuous, behind-the-scene

control efforts, a large portion of Delaware would not be very livable from April through early November.

Another reason for controlling mosquitoes is their potential for **transmitting diseases**, not only to humans, but also to domesticated animals, such horses or dogs. In Delaware, we are concerned with encephalitis viruses, including **eastern equine encephalitis (EEE)**, an alphavirus that is potentially fatal for humans and horses, especially for children and elderly. Those who recover from EEE are often left with lifelong debilitating symptoms. There is an EEE vaccine for horses, but not for humans. Fortunately, the occurrence of EEE in Delaware is relatively rare, and the Mosquito Control Section works hard to keep it this way. **West Nile virus (WNV)**, a flavivirus, is a virus that is carried by wild birds and mosquitoes. This virus first appeared in Delaware in 2002 and is now well-established throughout the state. West Nile Virus is not as virulent as EEE, but contracting WNV is still a medical concern for the elderly or people with impaired immune systems. Like EEE, an effective WNV vaccine has been developed for horses, but not for humans. Another mosquito-caused problem in Delaware is **canine heartworm**, a mosquito-borne pathogen often fatal to dogs. Dog owners are urged to put their dogs on preventive medication to avoid canine heartworm.

Other encephalitides of minor concern in Delaware include St. Louis Encephalitis (SLE), another flavivirus, which at times has had epidemic outbreaks in the central U.S. and Florida; as well as the potential for LaCrosse Encephalitis (LAC), a bunyavirus, which is usually associated with the mid-West. Many Delawareans are probably not aware that “tropical” diseases, such as yellow fever or malaria, were at one time quite common. A yellow fever outbreak in Philadelphia in 1793 killed 10% of the city’s residents and sickened another 20%. Malaria was a serious problem for Civil War soldiers throughout the southeast, including Confederate prisoners confined to Fort Delaware on Pea Patch Island. Several years ago isolated, but locally-transmitted, cases of malaria surfaced in New Jersey and Maryland. Dengue (“breakbone”) fever is currently a mosquito-borne problem throughout the Caribbean and Mexico, with recent occurrences in Florida. Elephantiasis is a mosquito-borne disease caused by roundworms, and while primarily occurring in Africa and Southeast Asia, there are also problem areas in northern South America. It is only through continued vigilance and proactive implementation of modern mosquito control practices within the United States, combined with good disease screening and follow-up medical care, that these “tropical” diseases are no longer major concerns in Delaware and the United States.

Mosquito bites, even without pathogen transmissions, are also a human health problem. Excessive numbers of mosquito bites can cause allergic problems at bite sites (or even systemically) for extremely sensitive individuals, can lead to secondary infections from aggressively scratching bites sites, and can cause psychogenic problems from mental anguish/torment.

We do not have an easy mission, but we always try to do our best in serving the public.