

MOSQUITO-BORNE DISEASE

Several species of mosquitoes in Massachusetts are capable of transmitting disease-causing organisms under the right conditions. When a female mosquito takes an animal blood meal, which she uses as nourishment for developing eggs, she may transmit certain disease-causing organisms to humans and other animals. The mosquito completes the cycle when she bites the next susceptible host, causing infection. The three mosquito-borne diseases in Massachusetts are Dog Heartworm, Eastern Equine encephalitis (EEE) and West Nile Virus (WNV).

DOG HEARTWORM – Dog heartworm is caused by infection of a canine by the nematode or roundworm *Dirofilaria immitis*. The adult worms live in the heart of canines and produce many offspring. In order to complete their life cycle, immature worms must be ingested by a mosquito. The worms then mature in the mosquito. An infected mosquito will then take a blood meal from an uninfected canine and infect that canine with the nematodes. It is unknown how often dogs are exposed to this disease in Massachusetts. The nematode that causes this disease has been detected in mosquitoes on Cape Cod. The mosquito season in this state is very short and does not allow much time for this nematode to complete its life cycle. Dog heartworm is more common in canines in warmer regions. There is a preventative medicine that can be administered to your pet. This should be discussed with your veterinarian.

EASTERN EQUINE ENCEPHALITIS – This disease is the most important mosquito-borne disease in Massachusetts. Eastern Equine encephalitis is a viral disease. Wild birds serve as the reservoir for the virus. The virus infects both humans and horses. Horse breeders in many states vaccinate their animals to prevent losses. Although EEE infections are not common, it can have very serious results. EEE virus was detected in mosquitoes on Cape Cod in 2006. Control of mosquitoes that are capable of carrying this virus, as well as monitoring mosquito populations for the presence of this virus, can help prevent outbreaks in Massachusetts.

WEST NILE VIRUS – West Nile virus was first detected in North America in a 1999 outbreak that occurred in New York City. In the summer of 2002, the virus was detected in birds across the continental US. This disease is like EEE in that wild birds serve as the reservoir for the virus. Crows and related species such as blue jays are very sensitive to this disease. The species of mosquitoes that carry this disease lay their eggs and develop in standing water in man-made containers. Therefore, the best control for this species is to check the area around your house and make sure that there are no containers holding water.

The Cape Cod Mosquito Control Project will continue to monitor for this disease in the mosquito population and work to control the mosquitoes that are capable of carrying these diseases.