



EarthWatch Rhode Island



Topic: What Rhode Islanders Need to Know About Protecting Themselves from Mosquito-Borne Diseases

Date: June 26, 2009

Location: North Kingstown home

Background:

The wet weather Rhode Island has been experiencing over the past few weeks is expected to generate an increased number of mosquitoes in our area through July. A larger number of mosquitoes bring the potential for more mosquito biting activity, and possibly an increased risk of disease transmission.

West Nile Virus and Eastern Equine Encephalitis (EEE) are firmly established throughout the state and the Eastern portion of the US, and therefore it is particularly important that residents take precautions to protect themselves by eliminating mosquito breeding grounds and avoiding mosquito bites. Personal protection is the first line of defense against mosquitoes that can carry diseases such as West Nile Virus and EEE and is by far the most effective way of avoiding infection.

- Mosquitoes breed in standing water. Just one cup of standing water can produce thousands of mosquitoes.
- Eliminate mosquito breeding grounds from yards by removing anything that holds standing water, such as old tires, buckets, junk and debris, and clean gutters so that they drain properly.
- Avoid mosquito bites by using screens on windows and doors, covering up at dawn and dusk, and putting mosquito netting over playpens and baby carriages when they are outside.
- Use mosquito repellent, but with no more than 30 percent DEET. Do not use repellent on infants.
- Boat and pool owners should regularly check the tarp coverings on their boats and pools and remove any water that has collected on the covering. Pool owners should also properly maintain backyard pools as they can be prime breeding grounds for mosquitoes.
- Because horses are susceptible to West Nile Virus and EEE, Rhode Island horse owners should vaccinate their horses early in the season and take measures to control and prevent mosquito exposure. They include removing or covering all areas where standing water can collect; applying mosquito larvicide in appropriate locations; and avoiding turning animals outside at dawn, dusk and during the night when mosquitoes are most active. Horse owners should monitor

animals for symptoms of fever, incoordination, stumbling and neurological signs; and report all suspicious cases to a veterinarian immediately.

- Since West Nile Virus and Eastern Equine Encephalitis are historically both firmly established throughout the state, it is not necessary to test birds for those viruses as an "early warning." Residents can dispose of dead birds by double-bagging them and putting them in their household trash. There is no evidence that birds can transmit West Nile Virus to humans; mosquitoes that bite infected birds and then bite humans are the transmitters. However, as with any dead animal, avoid bare-handed contact of the carcass by using gloves or an inverted bag to place it in the double bag for disposal.
- The Departments of Environmental Management and Health are actively involved in various aspects of mosquito control. DEM traps mosquitoes on a weekly basis throughout the state from June until the first hard frost in October to check for the presence of WNV and EEE viruses in the mosquito population. The mosquitoes are tested at the HEALTH laboratory. DEM provides, at minimum, weekly updates on test results to the media, with additional reports as necessary. Positive results will generally trigger additional trapping to assess risk.
- Test results from the first mosquitoes trapped this season are negative for both West Nile Virus and Eastern Equine Encephalitis.
- The Dept. of Health works closely with DEM to help educate Rhode Islanders and visitors about the most effective ways to reduce the risk of mosquito bites. Personal protection and larviciding are cornerstones of the state's mosquito response protocol. Aerial or ground spraying will be recommended only when a team of mosquito-control experts determines that the public is at substantial risk of contact by infected mosquitoes.
- Mosquito abatement operations in RI are conducted primarily through municipal mosquito control programs. DEM recently conducted a distribution of larvicide to municipalities for treating roadside storm drains and catch basins, and held mosquito control training sessions at East Farm at the University of Rhode Island for municipal and state workers who are applying it.
- Last year, in Rhode Island, nine mosquito pools trapped in Providence, Pawtucket, Central Falls and Westerly and tested at the RI Department of Health laboratory were confirmed positive for West Nile Virus. However, no mosquitoes in Rhode Island tested positive last year for Eastern Equine Encephalitis.

The Diseases

EEE, a cyclical virus, while not nearly as common as West Nile Virus, has a higher fatality rate. It is a viral disease contracted through the bite of an infected mosquito. In most years, the virus is limited to native bird populations and bird-biting mosquitoes, but occasionally the virus can be transmitted to humans and domestic animals. EEE virus affects the brain with symptoms that appear 5 to 15 days after being bitten by an infected mosquito. Symptoms may include high fever, headache, stiff neck and decreased consciousness. Up to 50 percent of cases may result in fatality. Individuals with symptoms suggestive of EEE should contact their physician immediately.

West Nile Virus is also a mosquito-transmitted, viral disease that causes encephalitis. However, mortality rates are much lower than those of EEE. Most people bitten by WNV-infected mosquitoes do not get sick. However, the elderly and people with weakened immune systems are more prone to infections. Symptoms begin 3-15 days after the bite from an infected mosquito. Symptoms may include fever, headache, nausea, rash, stiff neck, muscle weakness, and disorientation. Of cases with serious symptoms, up to 15 percent may result in fatality. West Nile Virus made its first appearance in the Western hemisphere, in the New York City area in 1999, and has since spread throughout the country.

Interviewee:

- Alan Gettman, Ph.D., DEM's Mosquito Abatement Coordinator – talked about how mosquitoes are collected and tested; this year's mosquito crop; and provided tips on how Rhode Islanders can mosquito-proof their homes and protect themselves against mosquito-borne diseases