

MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

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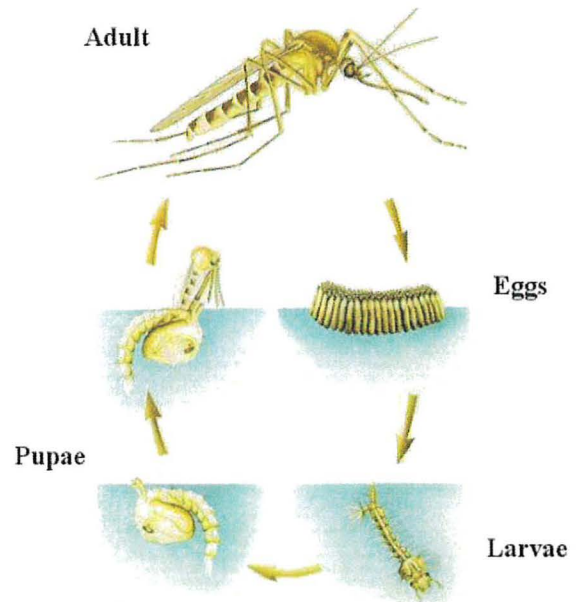
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MOSQUITOES...WHAT EVERYONE SHOULD KNOW

Questions & Answers

What is the life cycle of mosquito?

Mosquitoes have four stages of development - egg, larva, pupa, and adult. They spend their larval and pupal stages in water. Female mosquitoes of most species deposit eggs on moist surfaces such as mud or fallen leaves. Rain re-floods these surfaces and stimulates the hatching of the eggs, starting the life cycle. Other mosquito species lay their eggs on permanent water surfaces. Since the water source is constant, egg hatching, and larval development is an ongoing process. Mosquitoes take approximately one week to develop from egg to adult. After emerging from the aquatic stages, adult mosquitoes mate and females seek a blood meal to obtain nutrients needed for egg development. Only female mosquitoes bite. Adult male mosquitoes feed on plant nectar and die shortly after mating. The average life span for adult mosquitoes is 2 – 3 weeks.



How many kinds of mosquitoes are there?

In Middlesex County, there are more than 40 different mosquito species, with more than 63 species found in New Jersey. Fortunately, most mosquito species either do not prefer to feed on humans or do not occur in high enough numbers to cause a problem. Between 24 and 28 problematic species occur commonly in the County during the year.

What human diseases do mosquitoes transmit?

West Nile virus (WNV), St. Louis encephalitis (SLE) and eastern equine encephalitis (EEE) are several diseases that can be transmitted by mosquitoes found in Middlesex County. The primary transmitter of WNV and SLE are mosquitoes commonly found around homes. These mosquitoes will deposit eggs in tires or any container holding water. Both diseases can pose a significant threat to the very young and old, as well as individuals with compromised immune systems. EEE, while rare, is a more dangerous disease and is transmitted by mosquitoes that are produced in swamps and saltwater marshes.

What animal diseases do mosquitoes transmit?

Dogs and horses can also be infected with mosquito-transmitted diseases. Dog heartworm, contracted through the bite of an infected mosquito, is a serious threat to your pet's life and costly to treat. Fortunately, a preventative medicine to protect your dog from contracting heartworm is available. WNV and EEE are threats to horses as well as to humans. Vaccines to protect your horse against EEE and WNV are also available. Contact your local veterinarian to get more information. WNV has also been responsible for the death of numerous birds, mostly in the wild bird population.

What is the County Mosquito Commission?

The Middlesex County Mosquito Extermination Commission (the Commission) was created in 1914 in accordance with the laws of the State of New Jersey, NJSA, Title 26, Chapter 9, Article 2, to provide quality mosquito control to the residents of



Middlesex County. Mosquito-borne disease control and quality of life assurance are the principal concerns of the Commission. The statutory mandate of the Commission is "To perform all acts which in its opinion may be necessary for the elimination of mosquito breeding areas, or which will tend to exterminate mosquitoes within the county." The Commission's Board is comprised of a County Commissioner and County Commission-appointed citizens whose job it is to oversee the Commission's operations.

How does the Commission Control Mosquitoes?

The Commission uses an Integrated Pest Management (IPM) approach to controlling mosquitoes. An IPM program employs a combination of methods of control including mosquito surveillance, water management, source reduction, biological control, biological and man-made insecticides, and public outreach and education. With an IPM strategy, control efforts focus primarily on the immature, aquatic stages of the mosquito. These immature stages are more concentrated and accessible than the adult mosquitoes, which disperse after emerging from their aquatic habitat. The primary insecticide used to control mosquito larvae is a bio-rational insecticide derived from the bacteria, *Bacillus thuringiensis var. israelensis* (Bti).

Fish are available to the Commission from the NJ Division of Fish, Game & Wildlife as part of the State Mosquito Control Commission's bio-control program. The fish available are fathead minnows, freshwater killifish, sunfish, and the mosquito fish. The Commission will supply fish, free of charge, to any county resident to control mosquitoes after fish stocking criteria are satisfied.

The Commission conducts year-round water management (source reduction) projects that control mosquitoes by eliminating, removing, or modifying larval mosquito habitats. These projects/operations are accomplished following the NJDEP Best Management Practices manual. Hand labor and excavating equipment are used for this work.

The Commission also collects illegally discarded tires to eliminate them as larval sources for mosquitoes. The Commission has collected and recycled well over 100,000 illegally discarded tires since the program's inception in 1991.

If surveillance indicates that a nuisance level of mosquitoes is reached or disease is detected, a spray for adult mosquitoes may be applied by hand-held or truck-mounted sprayers or from the air. All pesticides used are registered with the US Environmental Protection Agency (USEPA), and the NJDEP, and are legal for use in New Jersey. These products are also reviewed and recommended by the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences/Rutgers University.

What are the winter activities of the Commission?

Generally insecticidal control operations are not employed when mosquitoes are not active during winter months (November through March). However, all other control activities continue throughout the year. Permits are pursued for the water management projects. Necessary repairs and maintenance are performed on excavation and pesticide application equipment. The inspection routes are reviewed and revised as necessary to record new larval sources and remove sources that no longer exist. Larval production sources that were difficult to access due to the presence of dense vegetation are inspected after the foliage falls for a clearer view of the areas. These sources then may have paths cleared to allow easier access during the next mosquito production season, and debris dams are cleared from drainage structures. Site evaluation is conducted on potential areas for fish stocking or for water management projects. Illegally discarded tires are picked and recycled. Presentations are made at schools, civic organizations and interested groups on mosquitoes and mosquito control. Commission employees attend training classes to maintain their NJDEP-issued Certified Pesticide Applicators licenses.

What can homeowners do?

- Homeowners can control mosquitoes by eliminating standing water on their property. Any container holding water is a potential source of mosquitoes and is likely to cause problems around your home. Of particular concern are clogged gutters, scattered tires, and unopened swimming pools. All tend to collect leaves and water and provide very attractive larval sources for mosquitoes. These containers dry out very slowly. Keep gutters clean and free flowing. Remove or overturn containers that may collect water.



- Remove water from swimming pool covers. If pools are not covered, make sure the water is clean, so it is not attractive to mosquitoes. Artificial containers will remain wet for a much longer period of time. If you wish to collect rainwater, tightly screen the tops of the containers and any openings to prevent mosquitoes from depositing their eggs on the water surface. Items such as pet water bowls and birdbaths should be emptied and refilled at least once a week.
- Natural depressions in your yard can hold water. However, they will not be a problem, if the water dries out within 4 to 5 days. Depressions or low areas in your yard can be filled to prevent the collection of water. If larger wet areas exist on your property, bring them to the attention of Commission personnel.
- Make sure windows and door screens are properly fitted and holes are patched to prevent mosquitoes from entering your home.
- A wide variety of repellents are available to provide relief from mosquitoes and other insects. Always **read and follow the label** before using any repellent.

What can I do if there are adult mosquitoes around my home?

If mosquitoes are a problem in your area, contact the Commission's office at (732) 549-0665 or use the "**Request for Inspection/Service**" feature on our web page. Each area is inspected to locate mosquito sources and to verify the presence of adult mosquitoes. If an adult or larval mosquito problem is identified, insecticides may be applied for their control.

What pesticides are used to control mosquitoes?

The majority of the insecticides used are mainly to control immature mosquitoes in the water (known as a larvicide). If a major adult mosquito problem is identified, or if disease-carrying mosquitoes are detected, an adulticide may be applied throughout the area of infestation. For more information regarding the pesticides used by Commission personnel for adult mosquito control, please refer to the accompanying NJDEP approved pesticide fact sheets or visit our website.

Where can I find more specific information on spraying for adult mosquitoes in Middlesex County and will I be notified of the spraying?

All spraying for adult mosquitoes on a community or area wide basis (more than 3 acres aggregate), whether conducted from the ground or air, will be advertised in the Home News Tribune and the Star Ledger. The advertisements will contain information such as intended application dates or range of application dates, location, contact name, and phone number. This information is also available by accessing the **Commission's web page on the Middlesex County website** (<http://MiddlesexMosquito.org>). Individual homeowners can request to be notified prior to an adulticide application near their home. Contact the Commission for details on the procedure to request notification.

Are there precautions I should take if the Commission is treating for adult mosquitoes in my area?

Adult mosquito treatments will not harm people, pets, animals, or the environment when conducted according to the insecticide label. If you would like to take precautions, you can:

- Plan your activities to limit time spent outside during times of insecticide treatments. Move your pets, their food, and water dishes inside during applications.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) or window fans turned off during spraying.
- Wait one hour before children play in areas that have been sprayed.
- If you must remain outdoors, avoid eye and skin contact with the spray. Stay back from application equipment. If you get spray in your eyes or on your skin, immediately flush and rinse with water. If you believe that you have been exposed to pesticide spray and have health-related questions, contact your physician.

MUNICIPALITIES ARE ENCOURGED TO SHARE THIS INFORMATION WITH ALL RESIDENTS IN THEIR COMMUNITY