

# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 PARSONAGE ROAD • EDISON, NJ 08837-2118



Tel: (732) 549-0665  
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*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

June 10, 2022

*NATIONAL MOSQUITO CONTROL AWARENESS WEEK - June 19-25, 2022*

**Please Get the Word Out!**

**Dear Business Administrator:**

Each year, the week of June 21 is declared "**National Mosquito Control Awareness Week**" by the American Mosquito Control Association (AMCA) to educate the general public about the significance of mosquitoes in their daily lives and the important service provided by mosquito control workers throughout New Jersey and the United States.

In light of the major nuisance caused by the invasive Asian tiger mosquito and the threat of mosquito-borne illnesses such as West Nile virus, eastern equine encephalitis, etc., to residents of the county, the Middlesex County Mosquito Extermination Commission is requesting your cooperative effort in drawing the public's attention to reduce mosquitoes in their local communities.

Please share the enclosed brochures which contain information on mosquito life cycle, mosquito source checklist and tips on how to manage mosquitoes around homes and businesses which will help citizens reduce the numbers of mosquitoes in their own neighborhoods.

The Commission also encourages your office to announce the observance of National Mosquito Control Awareness Week through your local mass media channels.

Sincerely,

A handwritten signature in blue ink, appearing to read "Deepak Matadha".

Deepak Matadha, PhD  
Superintendent

Enc

# National Mosquito Control Awareness Week

## June 19 – June 25, 2022

The week of June 19– June 25, 2022 is declared as “National Mosquito Control Awareness Week” to educate the general public about the significance of mosquitoes in their daily lives and the important service provided by mosquito control workers.

In observance of the event, *Middlesex County Mosquito Extermination Commission* is urging residents to take a proactive approach to controlling mosquitoes in the community and guarding against bites and mosquito borne diseases during this week and throughout the year.

Tips to protect yourself and your family from mosquito bites and prevent mosquito-borne diseases like West Nile virus:

### PREVENT:

- Eliminate or manage all sources of standing water to prevent mosquitoes from laying eggs. All mosquitoes need standing water to complete their life cycle. Once a week, empty or throw out items that hold water, such as scrap tires, buckets, planters, toys, pool covers, birdbaths, downspouts, flowerpots, trash containers, etc.
- Cut down weeds, trim and maintain shrubs and grass to limit adult mosquitoes resting/harboring in the vegetation.
- Ensure doors and windows have tight-fitting screens. Repair or replace screens that have tears or holes to prevent mosquitoes from entering your home.

### PROTECT:

- Avoid being outside during dawn and dusk times. This is when many mosquito species are most active.
- Wear long, loose-fitting, and light-colored clothing if outdoors when possible. Mosquitoes look for exposed skin to bite and are more attracted to dark colored clothing.
- Apply an effective insect repellent, such as DEET, Picaridin, IR3535, and Oil of lemon eucalyptus (OLE). Always apply according to the label instructions.

### REPORT:

- Contact the County Mosquito Commission either by phone at **732-549-0665** or via our website link [“Request for Service”](#) for any additional mosquito problem.

<https://www.middlesexcountynj.gov/government/departments/department-of-public-safety-and-health/middlesex-county-mosquito-commission>

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Middlesex County  
Mosquito Extermination Commission  
200 Parsonage Rd. Edison NJ 08837



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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 since the water is constant; there are always eggs hatching and larvae developing. The Asian tiger mosquito breeds in a wide range of natural and man-made containers that hold water for more than seven days. Mosquitoes take approximately one week to develop from egg to adult. Only the female mosquitoes bite. After emerging from the aquatic stages, adult mosquitoes mate and females seek a blood meal to obtain nutrients necessary for egg development. 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?

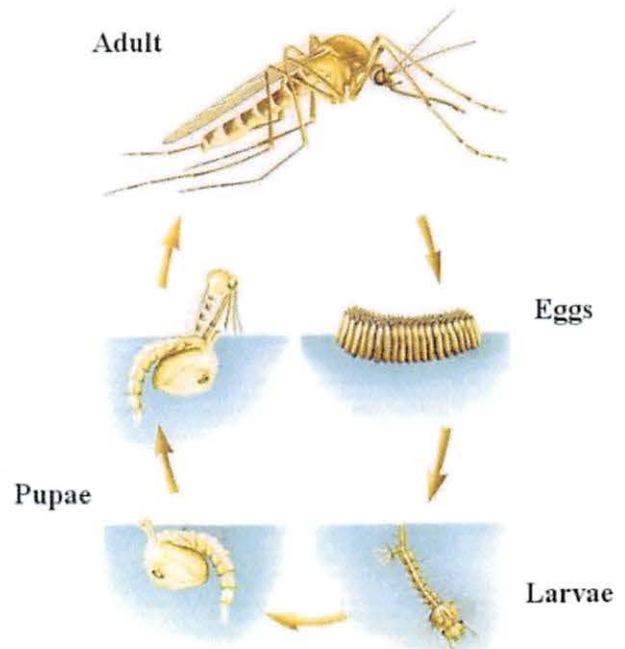
In Middlesex County, there are about 43 different species with more than 63 species found in New Jersey. Fortunately, most mosquitoes do not prefer to feed on people or do not occur in high enough numbers to cause a problem.

#### What human diseases do mosquitoes transmit?

West Nile virus (WNV), St. Louis (SLE) and Eastern Equine encephalitis (EEE), chikungunya & Zika are several diseases, which can be transmitted by mosquitoes found in Middlesex County. WNV was first identified in the United States in New York City and surrounding areas in the fall of 1999. The primary transmitter of WNV, SLE, chikungunya & Zika are mosquitoes commonly found around homes. They are mosquitoes that will readily breed in tires or any container holding water. Diseases like WNV & EEE have a greater impact on the very young and old and individuals with compromised immune systems. EEE is a more dangerous disease and is transmitted by mosquitoes that breed in permanent swamps and salt-water marshes. Chikungunya and Zika viruses are transmitted to humans mainly through the bite of an infected *Aedes*-species mosquito (*Aedes aegypti* & *Aedes albopictus*).

#### What animal diseases do mosquitoes transmit?

Dogs and horses are also susceptible to mosquito-transmitted diseases. Dog heartworm is a serious threat to your pet's life and is costly to treat once it is contracted through the bite of an infected mosquito. There is a preventative medicine to protect your dog from contracting heartworm. WNV and EEE are threats to horses as well as to humans.





There is a vaccine that can protect your horse against EEE. A WNV vaccine for horses has recently been approved. 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 does the Commission do?**

The Middlesex County Mosquito Extermination Commission (Commission) has been in existence since 1914. The Commission has provided the residents of Middlesex County with almost 100 years of quality mosquito control. Presently, as in the past, vector/disease control and quality of life assurance are the 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." Key to the Commission's activities is a comprehensive surveillance program. Prior to any pesticide being applied, a fish being stocked, or a water management project being initiated the presence of a mosquito problem must be documented. Emphasis is placed on the elimination of mosquito-breeding habitat and the control of mosquitoes while they are still in the aquatic stages of their development. The Commission is comprised of a County Commissioner and County appointed citizens whose job it is to oversee the Commission's operations.

### **What control efforts does the Commission utilize?**

The Commission uses an Integrated Pest Management (IPM) approach to controlling mosquitoes. IPM uses various methods of control including but not limited to surveillance, water management, source reduction, biological control, biological and man-made pesticides and education. With an IPM strategy, control efforts focus primarily on the immature, water borne stages of the mosquito. The immature stages are more concentrated and accessible than the adult mosquitoes, which disperse after emerging. The primary insecticide applied from the ground is a bio-rational insecticide comprised of 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, Fresh Water killies, sunfish and the Mosquito fish. The Commission will supply fish free of charge to any county resident to control mosquitoes after NJ Department of Environmental Protection (NJDEP) fish stocking criteria are satisfied. The Commission conducts year-round water management/source reduction projects that control mosquitoes by eliminating mosquito habitat water. These operations are done following the NJDEP Best Management Practices manual. Hand labor and excavating equipment are utilized for this work. The Commission also collects illegally discarded tires to eliminate them as breeding sources for mosquitoes. The Commission has collected and recycled approximately 119,000 illegally discarded tires since the program's inception in 1991. If a nuisance level of mosquitoes or disease is detected, a spray for adult mosquitoes may be applied by hand held or truck mounted sprayers or from the air. It bears repeating that the objective of the Commission is to prevent the appearance of adult mosquitoes and to do as little spraying for adult mosquitoes as necessary. All pesticides used are registered with the US Environmental Protection Agency (USEPA), and the NJDEP which means that they are legal for use in New Jersey. These products are also reviewed and recommended by the New Jersey Agricultural Experiment Station, Cook College/Rutgers.

### **What are the winter activities of the Commission?**

While the Commission practices an IPM approach to mosquito control, the pesticide portion of the IPM program is not conducted during the time of year when the mosquitoes are not actively breeding. All other activities are continuous throughout the year. Appropriate permits are pursued for the water management projects. Necessary repairs and maintenance are performed on excavation and pesticide application equipment. Follow-up record keeping on the past season's mosquito control activities at all the breeding sites continue beyond the active mosquito season. The inspection routes are reviewed and revised as necessary to record new breeding sites and remove sites that no longer exist. Breeding sites 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 breeding sites then may have points cleared to allow easier access during the next breeding season. Debris dams are cleared from drainage structures. Site evaluation is conducted on potential areas for fish stocking or for water management. Beehives are located to avoid accidental exposure to honey bees in the case an adult mosquito spray (adulticide) may have to be done. 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 license.

### **What can homeowners do?**

- Homeowners can control mosquitoes by eliminating standing water on their property. Any container holding water is a potential mosquito-breeding source and is likely to cause problems around your home.

Middlesex County Mosquito Extermination Commission  
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Of concern are clogged gutters, scattered tires and unopened swimming pools. All tend to collect leaves and water and provide very attractive breeding sites 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. Natural depressions in your yard can hold water. They will not be a problem, however, if the water disappears within 4 to 5 days. 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 to prevent mosquitoes from depositing their eggs on the waters surface. Items such as pet water bowls and birdbaths should be emptied and refilled at least once a week.
- Small depressions 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 the house.
- 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 present a problem in your area, contact the Commission's office at (732) 549-0665 or through our page on Middlesex County's website, using the quick link "[Request for Service](#)". Our staff will investigate your request promptly. Each area is inspected to locate mosquito-breeding sites and to verify the presence of adult mosquitoes. If an adult mosquito problem is identified, spraying for adult mosquitoes may be conducted.

### **What pesticides are used to control mosquitoes?**

The majority of the pesticides used are insecticides to control immature mosquitoes in the water. These insecticides may be applied either by ground equipment or aircraft. If an adult mosquito problem is identified, an adulticide may be applied throughout the area of infestation. For more information regarding the pesticides used for adult mosquito control, which may be applied by Commission personnel, please refer to the accompanying NJDEP approved pesticide fact sheets. It should be noted that some of the insecticides used for the control of mosquitoes are used to control other pests. The dosage rates used for mosquito control are usually much less, as low as 5/8ths of an ounce per acre to control mosquito larvae.

### **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 more than 3 acres aggregate whether it is conducted from the ground or air will be advertised in the Home News Tribune and the Star Ledger as well as on the County's website. 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 Middlesex County's website (<https://www.middlesexcounty.nj.gov/government/departments/departments-of-public-safety-and-health/middlesex-county-mosquito-commission>). Individual homeowners can request in writing to be notified prior to an adulticide being conducted by their house. Contact the Commission for details on the procedure to request notification.

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

6-10-22



## Mosquito Source Checklist

It takes about 7 days for mosquitoes to grow from an egg in standing water to a flying, biting adult.

**Check weekly to find and remove standing water around your home to prevent mosquitoes.**

### COMMON HOUSEHOLD ITEMS

- Buckets:** Empty water from buckets and turn them over.
- Garbage cans and recycling bins:** Drill drainage holes in the bottoms of garbage cans and bins, keep covered and dispose of recycling weekly if possible.
- Tarps, plastic bags and sheets:** Keep tarps tight and refit them if water collects.

### BUILDING STRUCTURES

- Gutters:** Keep gutters clean and properly pitched.
- Flexible downspout extensions:** Pitch downspout extensions so water drains completely after it rains or replace them with a metal, non-flexible extension that is pitched to drain fully. Keep the inside free of debris.
- Leaky hose spigots:** Fix leak or have it fixed by a professional plumber.

### AROUND THE GARDEN

- Planter saucers:** Dump the water out every 5-7 days or don't use a saucer at all.
- Planters without drainage holes:** Drill holes in the bottom of your planter – it's healthier for your plants.
- Self-watering planters:** Tightly seal the watering hole after adding water or use traditional planters with drainage holes.
- Wheelbarrows:** Turn wheelbarrows over or store them on end.
- Watering Cans:** Empty and store upside down or in a garage or shed.
- Rain Barrels:** Cover tops of rain barrels and any overflow holes with tightly fitted screen.
- Bird Baths:** Change water at least once a week and brush the inside of the bowl to remove any mosquito eggs.
- Ornamental ponds:** Get fish. If that is not an option, you can get a pond fountain to stop the water from being stagnant.

### CHILDREN'S TOYS

- Portable basketball hoops:** Make sure caps for fill holes are in place; replace if lost.
- Kiddie pools:** Empty or change water in kiddie pools every 5 - 7 days. Be sure to store indoors or turned over when empty.
- Sand boxes:** Drill small drainage holes in the bottom of your sand box.
- Big plastic toys, wagons, etc.:** Keep toys turned over or inside when not in use. If water can get inside the toy, so can a mosquito - drill drainage holes in the bottom.

### RECREATION

- Boats:** Empty any water. Cover boats in storage with tight tarps or use boat shrink wrap.
- Jet skis:** Rinse out the foot depressions with a hose every week. Jet skis can be tightly tarped or stored indoors.
- Pools/pool covers:** Keep the top of pool covers free of standing water. If you know of an abandoned home in your neighborhood with an unkempt pool, call the Middlesex County Mosquito Extermination Commission. It may need to be treated or stocked with fish that eat immature mosquitoes.

**Don't forget to check behind sheds, under shrubs, decks & porches where containers may hide.**

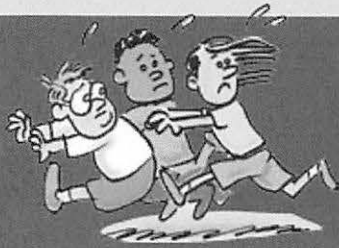


Still have a mosquito problem? Contact us.

200 Parsonage Road, Edison NJ 08837  
732-549-0665 • [MiddlesexMosquito.org](http://MiddlesexMosquito.org)

**MIDDLESEX**  
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# Mosquito Prevention and Protection



## Always remember the 3 D's of protection from mosquitoes



### Drain

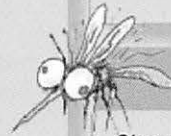
Many mosquito problems in your neighborhood are likely to come from water-filled containers that you, the resident, can help to eliminate. All mosquitoes require water in which to breed. Be sure to drain any standing water around your house.

- Dispose of any tires. Tires can breed thousands of mosquitoes.
- Drill holes in the bottom of recycling containers.
- Clear roof gutters of debris.
- Clean pet water dishes regularly.
- Check and empty children's toys.
- Repair leaky outdoor faucets.
- Change the water in bird baths at least once a week.
- Canoes and other boats should be turned over.
- Avoid water collecting on pool covers.
- Empty water collected in tarps around the yard or on woodpiles.
- Plug tree holes.
- Even the smallest of containers that can collect water can breed hundreds to thousands of mosquitoes. They don't need much water to lay their eggs. (bottles, barrels, buckets, overturned garbage can lids, etc.)



### Dress

Wear light colored, loose fitting clothing. Studies have shown that some of the 174 mosquito species in the United States are more attracted to dark clothing and most can readily bite through tight-fitting clothing of loose weave. When practical, wear long sleeves and pants.



### Defend

Choose a mosquito repellent that has been registered by the Environmental Protection Agency. Registered products have been reviewed, approved, and pose minimal risk for human safety when used according to label directions. Four repellents that are approved and recommended are:

- DEET (N,N-diethyl-m-toluamide)
- Picaridin (KBR 3023)
- Oil of lemon eucalyptus (p-methane 3,8-diol, or PMD)
- IR3535

### Here are some rules to follow when using repellents:

- Read the directions on the label carefully before applying.
- Apply repellent sparingly, only to exposed skin (not on clothing).
- Keep repellents away from eyes, nostrils and lips: do not inhale or ingest repellents or get them into the eyes.
- The American Academy of Pediatrics (AAP) suggests that DEET-based repellents can be used on children as young as two months of age. Generally, the AAP recommends concentrations of 10% or less, unless disease risk is imminent, then concentration can be increased to 30% or less.
- Avoid applying repellents to portions of children's hands that are likely to have contact with eyes or mouth.
- Repellents can be used by pregnant or nursing women. The EPA does not recommend any additional precautions for repellent use by pregnant or nursing women.
- Never use repellents on wounds or irritated skin.
- Use repellent sparingly and reapply as needed. Saturation does not increase efficacy.
- Wash repellent-treated skin after coming indoors.
- If a suspected reaction to insect repellents occurs, wash treated skin, and call a physician. Take the repellent container to the physician.



**AMCA**  
THE AMERICAN MOSQUITO CONTROL ASSOCIATION

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