

Atlantic County Department of Public Works Office of Mosquito Control

2024



Mosquito Control Question & Answer Sheet

For Additional Information:

www.atlanticcountynj.gov
www.state.nj.us/dep/mosquito
www.state.nj.us/health
www.state.nj.us/agriculture
www-rci.rutgers.edu/~insects/njmos.htm
www.cdc.gov/zika

Homeowners can reduce mosquitoes on their properties:



- Dispose of unwanted containers that can hold water (tires, bottles, cans, buckets, barrels, etc.)
- Store unused containers in an upside-down position
- Empty or cover swimming or wading pools when not in use
- Change water in bird baths and troughs weekly
- Keep roof gutters and drainage ditches cleared out so water does not collect and sit in them
- Properly grade property and eliminate any areas where water can collect, such as tire ruts



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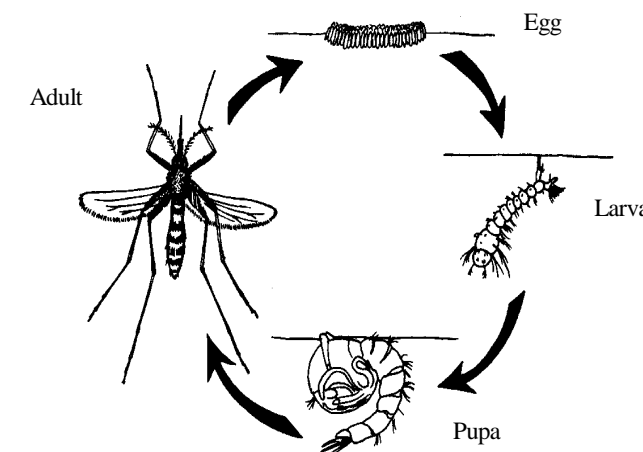
Q. What types of mosquitoes do we have in Atlantic County?

A. Of the 63 different species of mosquitoes found in the state of New Jersey, 40 of those have been found in Atlantic County existing in a wide variety of habitats. Mosquitoes are found breeding in roadside ditches, flooded woodlands, freshwater swamps, storm water basins, coastal salt marshes, and just about any artificial container that will hold water for more than five days.

Mosquito species that breed in our salt marshes are our major pest problem because of the large populations that can occur and because of their ability to travel large distances (over 20 miles) in search of a blood meal.

Q. What is the life cycle of the mosquito?

A. Despite the different varieties and needs of mosquitoes, all mosquitoes require water to complete their life cycle. Mosquitoes have four stages of development: egg, larva, pupa and adult. Mosquitoes undergo complete metamorphosis where their younger stages look completely different than the adult mosquito.



Depending on the species, female mosquitoes deposit their eggs on the edges of emergent vegetation, directly on the water's surface, or on muddy surfaces. Eggs deposited on mud will hatch when enough water is present through rainfall or flood tides, and eggs laid on permanent water may be hatching all the time under the right temperature conditions. Eggs hatch into the aquatic stage known as larvae. Larval mosquitoes eat, grow and molt four times before becoming a pupa. Pupae are in a resting state developing the body parts necessary to become an adult mosquito. After emerging from the aquatic stages, adult mosquitoes mate and the female mosquito then flies off in search of a blood meal to obtain nutrients necessary for egg development. While various species differ, the average life expectancy for adult mosquitoes is 4-6 weeks. In the warmer months an egg can become a flying adult in a week's time. Once egg laying is complete, the female mosquito will seek another blood meal in order to lay additional batches of eggs.

Q. What affect do mosquitoes have on man and animals?

A. Through their blood feeding behavior, mosquitoes can vector, or transmit, certain diseases to humans and animals. Depending on the species, mosquitoes can transmit diseases like Zika Virus, Dengue Fever, Malaria, Yellow Fever, Eastern Equine Encephalitis, West Nile Virus and Dog Heartworm.

West Nile Virus (WNV) was first recorded in the New York City area in 1999. It has since been detected in every state of the Union. In 2023, there were 14 human WNV cases in New Jersey, resulting in one fatality. In Atlantic County, there was one human WNV case. Atlantic County Office of Mosquito Control submitted 447 mosquito samples for WNV testing, resulting in 27 positive samples. Across the state, there were 10,096 mosquito samples submitted, resulting in 846 samples positive for WNV.

Historically, Eastern Equine Encephalitis (EEE)

has been the major mosquito related health concern in Atlantic County. EEE is detected almost every year with testing of mosquito samples through the vector surveillance program facilitate by the NJ State Mosquito Control Commission. There have been multiple EEE outbreaks through the years that have resulted in significant fatalities. This contributed to the development of mosquito control in Atlantic County. In 2023, there were no human cases of EEE reported in New Jersey. Two equine cases of EEE were reported in New Jersey, but zero positive horses from Atlantic County. Of the 447 mosquito samples submitted by Atlantic County, three tested positive for EEE. Statewide, 9848 samples were submitted, resulting in 18 EEE positive mosquito samples.

Zika Virus is a public health concern in the U.S. and has been linked to birth defects. Zika Virus is related to West Nile Virus, Dengue and Yellow Fever. The virus can be transmitted by the bite of certain infected Aedes mosquito species. Aedes aegypti, the primary mosquito known to transmit these diseases, is not found in NJ. There were no confirmed Zika cases in NJ in 2023.

Jamestown Canyon Virus (JCV) is a rare virus that is found throughout the country, with most cases reported from the upper Midwest. Symptoms include mild fever, headache and fatigue. A small number of cases exhibit more severe symptoms, such as encephalitis, and may require medical treatment. There were no confirmed cases of JCV in New Jersey, in 2023. Across the state, 8862 mosquito samples were tested for JCV and 5 tested positive. Atlantic County submitted 447 samples with zero testing positive. During 2023, there were 8 cases of Chikungunya, 48 cases of Dengue, and 64 cases of Malaria reported in New Jersey. All of these cases were reported by individuals who had travelled to areas outside of New Jersey, where active transmission of these pathogens had been reported.

Dog heartworm is an ever-present threat to your pet's life and is costly to treat once it has been contracted. Horses can contract EEE and WNV, both of which can be fatal. However, there are now EEE and WNV vaccines that offer effective protection. Contact your veterinarian for more information.

EEE and WNV are also responsible for deaths in several species of birds. Exotic birds such as ostriches and emus are particularly susceptible to EEE. And some native birds, including corvids and raptors, are particularly susceptible to WNV. Regular surveillance of birds in the state has been discontinued but is available upon request from PHEL.

Q. How does Atlantic County control mosquitoes?

A. Atlantic County's Mosquito Control program, first organized in 1912, carries on a program of Integrated Pest Management (IPM), based on a comprehensive surveillance program involving inspections, biological and chemical controls, water management and public education, coordinated with the NJ DEP, the NJ Agriculture Experiment Station, and the Atlantic County Division of Public Health. Our goal has been to control mosquitoes to eliminate disease and enhance the quality of life for residents and visitors of Atlantic County.

Early efforts in Atlantic and other coastal counties involved constructing a series of ditches to drain the salt marsh and freshwater wetlands, and chemical control efforts directed at adult mosquito populations. Today we focus on controlling the larval, or the aquatic stage of the mosquito where it is more concentrated and accessible than the adult mosquito.

Larval control involves applying pesticides using hand sprayers, truck mounted power sprayers, or aircraft targeting mosquito larvae at their source (in water) and are based on inspections of breeding areas. Larvicides are applied in either liquid, granular or briquet formulations. Inspections of known breeding areas are made routinely from late March through October. Complaints are also an important surveillance tool as they direct us to new or previously unknown breeding areas.

Our water management program targets mosquito larvae by physically altering breeding sites to remove the standing water which prevents them from completing their life cycle or providing access and habitat for mosquito predators. With the use of modern equipment and the techniques of Open Marsh Water Management, mosquito breeding salt marshes are altered to reduce mosquito breeding habitat, to enhance the tidal food chain, and to reduce the amount of pesticides needed to control those mosquitoes. Limited water management activities for mosquito control using low ground pressure excavating equipment are also carried out in freshwater wetlands following "Best Management Practices for Mosquito Control in Freshwater Wetlands".

FACT: Mosquitoes cause more human suffering and economic loss than any other insect or animal.

Cleaning ditches to promote flow, removing surface water or the simple removal of a tire for recycling are also effective water management tools for mosquito control. In the winter, hand crews are actively doing this type of water management for mosquito control.

Further larval mosquito control is accomplished by stocking "Mosquito Fish" (Gambusia affinis) and other mosquito predacious fish in appropriate mosquito breeding areas. These fish are made available by the N. J. Division of Fish & Wildlife as part of the State Mosquito Control Commission's bio-control program.

Atlantic County runs a comprehensive adult mosquito surveillance program which keeps us abreast of mosquito populations around the county and provides information used to measure the effectiveness of our control activities. The program utilizes a series of "NJ Light Traps" and landing rate counts to determine the size and species composition of our mosquito populations. As part of a statewide vector surveillance program in conjunction with the Rutgers University - Mosquito Research and Control program, mosquito collections are made around the county for virus testing.

Occasionally it becomes necessary to control adult mosquitoes because of very high populations or because of the presence of disease in local mosquito populations. Adult mosquito control is accomplished by applying pesticides targeting adult mosquitoes at ultra low volumes (very fine droplets) using truck mounted power equipment or, when mosquito populations are wide spread, using aircraft to make the applications.

Q. What pesticides are used to control mosquitoes in Atlantic County?

A. The products used are chosen from a list of pesticides recommended for use by the New Jersey Agricultural Experiment Station/Cook College. These products are registered with both the US EPA and NJ DEP, which means they are legal to use in New Jersey. Pesticides used by Atlantic County for controlling larval mosquitoes include Bacillus thuringiensis israelensis (Bti), brand names Teknar, Vectobac, Aquabac; Methoprene, brand names Altosid or Metalarv; Bti and Methoprene, brand name VectoPrime; Bacillus sphaericus, brand name VectoLex; mineral oil, brand name BVA.

Pesticides used for controlling adult mosquitoes include Etofenprox, brand name Zenivex; Sumithrin, Prallethrin and PBO, brand name Duet HD; Malathion, brand name Fyfanon; Pyrethrins, brand name Merus. The

adulticide materials are applied using ultra low volume equipment, from either truck or aircraft. For additional information, refer to the attached NJ DEP approved fact sheets.

Q. What can the homeowner do?

A. Mosquito control begins at home! Mosquitoes will breed in anything that holds water for more than a few days. Eliminating potential breeding sites can include emptying buckets, cans, unused wading pools or toys, removing used tires, regularly changing bird baths or pet dishes, cleaning rain gutters, or putting mosquito eating fish in ornamental ponds. Also, pool owners should keep pool covers free of debris and standing water and open pools should be properly maintained. Crawl spaces and cellars should also be monitored for standing water.

Keeping adult mosquitoes out of one's house is another step. Repair window and door screens and make sure they close securely.

A wide variety of repellents are available that can provide relief from mosquito and other insects, the repellents are effective but caution should be used and directions followed carefully. Please - read the label!

Q. What do I do if there are adult mosquitoes or possible mosquito breeding area around my house?

A. Contact the Atlantic County Office of Mosquito Control at (609) 645-5948 during the office hours of 7:00 AM - 3:30 PM, Monday-Friday. If an on site inspection is necessary an inspector will be dispatched to investigate the situation promptly.

Q. Where do I find more information?

A. Visit our web site - www.atlantic-county.org/mosquito-control for additional information on mosquitoes and their control, as well as updated adult mosquito spraying information and schedules. You can also call the county "Mosquito Control and West Nile Virus Information Line" at 1-877-6-4-FACTS for adult mosquito spraying information and West Nile virus health information, or the Division of Public Health at 645-5971 for health-related inquiries. Also included in this packet is a sample spray notice that is distributed to the media. You have the right to be notified by us with specific information prior to planned adult mosquito control pesticide applications.