

Mosquitoes: A General Guide

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CITY OF NEW ORLEANS

Mosquitoes can act as annoying biting nuisances and are a public health concern for many in Louisiana and across the world. It is important for residents to understand the mosquito life cycle, the health concerns associated with mosquitoes, and the best methods of controlling and preventing mosquitoes.

Mosquito Identification

Mosquitoes belong to the scientific order Diptera which includes house flies, midges, and gnats. The most distinguishing feature of the order is a single set of functional wings, unlike butterflies and dragonflies. The majority of mosquitoes can be distinguished from other Diptera by their long, needle-shaped proboscis which is used to take blood meals from their hosts (Figure 1). **Only female mosquitoes take a blood meal.**

Overall, there are about 3,500 identified mosquito species in the world. The continental United States is home to about 170 species with at least 64 species in Louisiana. Each mosquito species prefers a particular host for their blood meal which can include birds, humans, or other mammals. Different mosquito species are active at different times of day and prefer to lay eggs in specific types of habitat, depending on the species.

The main species of concern in Orleans Parish are *Culex quinquefasciatus* (southern house mosquito), *Aedes albopictus* (Asian tiger mosquito; Figure 1), and *Aedes aegypti* (yellow fever mosquito; Figure 2).

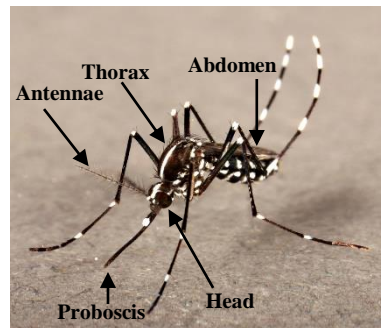


Figure 1. An adult female *Aedes albopictus*. The white line on the thorax is characteristic of the species.



Figure 2. An adult female *Aedes aegypti* taking a blood meal. The curved lyre-shape on the thorax is characteristic of the species.

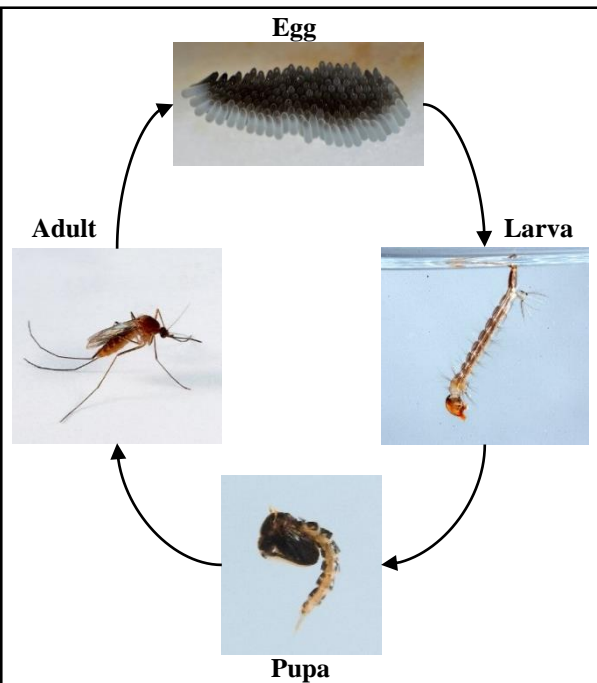


Figure 3. The mosquito life cycle.
 Egg – Larva – Pupa - Adult

Mosquito Life Cycle

The first stage of the mosquito life cycle is the egg (Figure 3), which can be laid on a variety of substrates. Some species prefer to lay their eggs in containers while others prefer standing water or wet ground. Some species like *Cx. quinquefasciatus* lay their eggs in rafts in standing water, while others like *Ae. aegypti* and *Ae. albopictus* lay their eggs singly in containers. After being exposed to water, larvae hatch from eggs.

All mosquito larvae must develop in water where they feed and grow through four different larval stages called instars. Mosquito larvae can often be found on top of the water surface where they use their siphon to breathe. Larvae usually prefer shaded, still water. After the 4th instar, mosquito larvae develop into pupae. Pupae are also aquatic, but do not feed.

When ready, the adult mosquito emerges from the pupa. **It takes a mosquito only 5-7 days to grow from egg to adult.** Once the adult female mosquito has mated and taken a blood meal, the mosquito will be ready to lay eggs and continue the cycle.

Mosquitoes & Public Health

A biting mosquito can also be a public health threat. The bite of a mosquito can potentially transmit various disease pathogens including West Nile virus (WNV), Eastern Equine Encephalitis (EEE), St. Louis Encephalitis (SLE), La Crosse encephalitis (LAC), chikungunya, dengue, Zika, and dog heartworm among others. Different species can transmit different disease pathogens as summarized below.

Mosquito Species	Common Name	Preferred Larval Habitat	Active Time	Associated Disease Pathogens
<i>Aedes aegypti</i>	Yellow Fever mosquito	Containers, tires	Daytime, dusk, dawn	chikungunya, dengue, Zika
<i>Aedes albopictus</i>	Asian Tiger mosquito	Containers, tires	Daytime, dusk, dawn	chikungunya, dengue, Zika, EEE, LAC, dog heartworm
<i>Culex quinquefasciatus</i>	Southern House mosquito	Standing water with organic matter, tires	Evening, dusk to dawn	WNV, SLE, dog heartworm

Mosquito Prevention & Control

There are many ways to protect yourself against mosquitoes and to prevent mosquitoes from breeding around the outside of your home. To prevent mosquitoes and mosquito bites:

- Empty and scrub, turn over, or cover containers that may hold water
- Tightly cover any water storage containers (buckets, rain barrels, etc.)
- Dispose of or recycle used tires and other trash that can hold water
- Cover containers that cannot be emptied with a fine wire mesh with holes smaller than an adult mosquito
- Use screens on windows and doors and keep them in good repair
- Clean clogged roof gutters
- Wear mosquito repellent
- Wear long pants and long-sleeve shirts
- Limit outdoor activity at dusk or dawn

Mosquito repellants recommended by the World Health Organization (WHO) include DEET, picaridin, oil of lemon eucalyptus, and IR3535. Wearing repellants may help reduce the number of mosquito bites, but dumping over containers and removing standing water will reduce mosquito breeding in your yard or neighborhood. Be sure to check any bottles, buckets, fountains, potted plants, pet dishes, rain barrels, tarps, or any other items that may hold water (Figure 4). **Mosquitoes only need a small amount of water to lay eggs.**



Figure 4. Potential mosquito breeding sites

For more information or to report mosquito problems, please contact:

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