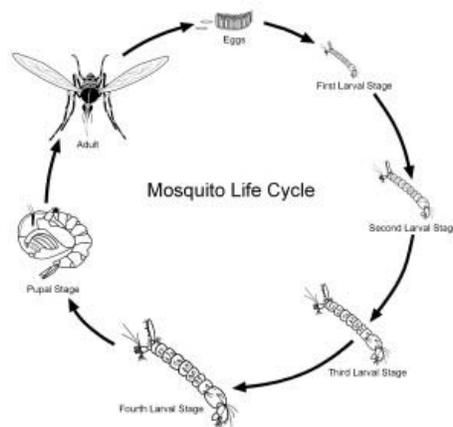


Some Common or Important Kentucky Mosquitoes
By Lee Townsend, Extension Entomologist

Kentucky is home to more than 50 species of mosquitoes. This publication provides information on some of our most common or important species. Some are common and can be found in most every county while others require very specific breeding sites and are rare. A few species with painful bites are significant nuisances, while some can carry diseases that can infect humans and animals.

Mosquito Life Cycle



(Drawing: North Shore Mosquito Abatement District)

The mosquito life cycle consists of four distinct stages: egg, larva (wiggler), pupa (tumbler), and adult. Larvae and pupae must develop in the water so the female mosquito lays her eggs directly on the water surface or in areas that will become flooded. After egg hatch, mosquito larvae feed on small aquatic organisms. Stagnant water usually provides an excellent breeding site. During the summer they can develop rapidly through a series of larval stages, transform to an active pupa, and emerge as an adult in just a few days. Female mosquitoes blood feeders. They may live for weeks and feed several times, laying a batch of eggs a few days after each meal. Males feed only on nectar and live just a few days.

An understanding of the biology of the main types of mosquitoes is necessary in order to locate and reduce or manage breeding sites. Generally, it is more effective to control larvae in focused breeding sites than it is to control adults that have dispersed and are hiding in vegetation.

Common or Important Species

Asian tiger mosquito *Aedes albopictus* This accidentally introduced species was first found in central Kentucky 1987, now it occurs over most of the state. The larvae need only very small accumulations of

water (as little as 1/4 inch deep) in artificial or natural containers. Discarded tires are a common breeding site but crushed aluminum drink cans are suitable, too.



Asian tiger mosquito (Photo: San Gabriel Valley Mosquito & Vector Control District)

This mosquito has several generations each year and feeds on humans, mammals, and birds. Consequently, the species poses a serious potential public health threat. It is an aggressive day biter that is most active in early morning and late afternoon. Usually, it moves only 100 to 300 yards from its breeding site. The Asian tiger mosquito is a potential vector of Dengue virus, Zika virus, and St. Louis, LaCrosse, and West Nile encephalitis. Also, it is associated with the transmission of dog heartworm.

Woodland pool mosquito *Orchlerotatus canadensis* This mosquito is a common early spring species in most of the eastern US. It spends the winter as eggs laid singly on the ground on or above the water line of woodland pools. The eggs hatch when spring rains flood low areas filled with dead and decaying leaves. This serious woodland pest can feed throughout the day in shaded areas and also is active at night. There is one large brood each year but additional generations can occur during rainy years. Adult females live for an extended period of time and feed on a wide range of large and small mammals, birds, reptiles, and humans. The species is considered a secondary vector of La Crosse encephalitis in Ohio and has tested positive for West Nile virus in the field.

Tan saltmarsh mosquito *Orchlerotatus sollicitans* is a medium-sized golden brown mosquito. Its eggs are laid in moist soil in low areas. Examples of breeding sites include brackish water in potholes, depressions, disposal sites for dredged materials, mine tailings or old mining sites, or wastewater from food processing operations. It has been a significant and chronic pest in western Kentucky.

Adult females are most active in the spring and fall but can be found throughout the year. They are strong fliers that feed primarily on mammals and to a lesser extent on birds. This mosquito easily can move 5 to 10 miles from its breeding site, up to 40 miles with help from winds. Migration and feeding flights are made during early evening and the adults are attracted to lights. They rest on vegetation in relatively open areas during the day and will attack people or animals that move through there during the day. This saltmarsh mosquito is a vector of dog heartworm. It has tested positive for West Nile virus in the field.

Black salt marsh mosquito *Orchlerotatus taeniorhynchus* This dark mosquito with a painful bite attacks birds, mammals, and humans. Eggs are laid on ground in low areas that flood seasonally. The larvae can be found in salt marsh or brackish waters. Females generally feed in the evening but not after dark. They generally remain within 2 to 5 miles of their breeding site but winds may move them 30 miles or more.

The black saltmarsh mosquito can transmit St Louis encephalitis but not a major vector. It is an important vector of dog heartworm and has tested positive for West Nile virus in the field.

Treehole mosquito *Orchlerotatus triseriatus* This woodland mosquito typically breeds in tree holes. However, it will use artificial containers, especially discarded tires in shaded locations. Larval

development takes about a month and there are several generations each year. Adults have a painful bite but generally remain near their breeding site. They are relatively cold-hardy mosquitoes that are active early and late in the season.

The treehole mosquito prefers chipmunks and squirrels but will feed on a wide variety of mammals, humans, and sometimes birds. Chipmunks and squirrels become infected with LaCrosse and can infect other mosquitoes that feed on them. This species is the most important vector of La Crosse encephalitis in Ohio. It also has tested positive for West Nile virus in the field.

Flood water mosquito *Orchlerotatus trivittatus* This is a persistent, aggressive mosquito that gives a very painful and irritating bite. The larvae can be found in most any collection of freshwater from open pools to temporary rain pools. They appear first in late spring and continue to breed during the summer. Adults bite mainly in evening, resting in shaded grasses and other vegetation during the day. They are not considered to be important disease vectors.

Inland floodwater mosquito *Aedes vexans* This is one of the most widespread pest mosquitoes in the world. A floodwater species, it can breed in most any ground pool following flooding of the eggs. It is a significant and chronic pest in western Kentucky. There are several generations each year. Adults rest on vegetation and shaded grass during the day and become vicious biters at dusk and after dark. They can live for several weeks and may migrate 10 miles or more during that time. The vexans mosquito is a potential vector of St Louis encephalitis. It is a vector of dog heartworm in some areas of the US and has tested positive for West Nile virus in the field.

Dark ricefield mosquito *Psorophora columbiae* This large dark mosquito with white or yellow markings is a serious nuisance to humans and livestock. The eggs are laid on moist soil and the larvae develop rapidly in temporary freshwater pools such as grassy roadside ditches.

Gallinipper mosquito *Psorophora ciliata* Large erect scales on the legs of this large yellow-brown mosquito give it a shaggy-legged appearance. The gallinipper is a vicious biter both during day and night but are not known to carry human diseases. Gallinippers are able to fly long distances from their breeding sites.

Common malaria mosquito *Anopheles quadrimaculatus* This mosquito is also known as the Aquad because of the four dark spots on each wing. Females lay single eggs on the surface of permanent freshwater pools, ponds, swamps, and slow-moving streams. They prefer water with aquatic vegetation or floating debris. Females feed at night on a variety of mammals and humans. They have a limited flight range but commonly enter buildings and shelters to feed. During the day they rest in cool, dark, damp places, such as under bridges or in buildings. There are several generations each year. This species was the most important vector of malaria in the southeast and is a major carrier of dog heartworm. It has tested positive for West Nile virus in the field.

Mottled-wing mosquito *Anopheles punctipennis* The larvae are found mostly in clear shaded pools along creeks and streams. Adult females feed on a variety of warm blooded animals and humans, primarily in the early evening. They also have a limited flight range and are unlikely to enter buildings. This species is a good carrier of dog heartworm.

Cattail mosquito *Coquillettidia perturbans* The dark and light scales on the wings of this mosquito give it a peppered appearance. It breeds in permanent water, especially marshes with emergent vegetation.

Typically, there is one large emergence in May with smaller numbers present during the rest of the summer. These mosquitoes feed on mammals and humans and can be a nuisance. The cattail mosquito is a good flier and can be found far from its breeding site. It has tested positive for West Nile virus in the field

House mosquito *Culex pipiens* This light brown mosquito is a common and important species throughout Kentucky, causing problems in both urban and rural areas. The larvae can be found in storm sewer catch basins, clean and polluted ground pools, ditches, animal waste lagoons, effluent from sewage treatment plants and other water with a high organic content.

Eggs are laid in rafts which float on the surface of the water surface. The life cycle can be completed in 8 to 12 days so there are several generations each year. Adults usually stay within 1,000 yards of their breeding sites and feed at night. They rest in and around shelters during the day. This mosquito commonly enters structures in search of a blood meal. They prefer to feed on birds but will feed on mammals and humans. This species can carry St. Louis encephalitis virus, dog heartworm, and may be the primary vector of West Nile virus..

White dotted mosquito *Culex restuans* This species medium-sized mosquito is very common in the eastern US. It can breed in water ranging from nearly clear to very polluted, including temporary ground water, road side ditches, tire ruts, hoof prints, discarded buckets, tires, catch basins, sewage effluent and septic seepage. This mosquito can be common from early spring through late fall, appearing to feed primarily on birds. It may be an important vector of West Nile virus among birds.

(Note that the genus name *Aedes* has been changed to *Orchlerotatus*. The former name can still be found when searching for information in other resources.)

Mosquito species	Feeding time	Common flight range*
Asian tiger mosquito (<i>Aedes albopictus</i>)	Day	100 to 300 yards
Woodland pool mosquito (<i>Orchlerotatus canadensis</i>)	Dawn, Day, Dusk	about 1/4 mile
Saltmarsh mosquito (<i>Orchlerotatus sollicitans</i>)	Dawn and dusk, during day if disturbed.	5 to 10 miles per night
Black saltmarsh mosquito (<i>Orchlerotatus taeniorhynchus</i>)	Dawn, Dusk	2 to 5 miles
Treehole mosquito (<i>Orchlerotatus triseriatus</i>)	Day	2 to 1 mile
Floodwater mosquito (<i>Orchlerotatus trivittatus</i>)	Night, Day when disturbed, often in swarms	about 2 mile
Inland floodwater mosquito (<i>Aedes vexans</i>)	Dusk, will bite during day if disturbed.	5 to 20 miles
Gallinipper mosquito (<i>Psorophora ciliata</i>)	Day and night	2 miles or more
Dark ricefield mosquito (<i>Psorophora columbiae</i>)	Day and night	6 to 8 miles
Common malaria mosquito <i>Anopheles quadrimaculatus</i>	Dawn, dusk	2 to 1 mile
House mosquito <i>Culex pipiens</i>	Dawn, dusk, night	1/4 to 2 mile

Psorophora howardii	Dawn, dusk, night	1 to 2 miles
Psorophora ferox	Dawn, dusk, night	1 to 2 miles

* These distances are only for relative comparison. Weather conditions, especially steady breezes, can move mosquitoes over longer distances. Species that can move several miles generally require a county - or area- wide control programs rather than a very localized approach.

Mosquito borne diseases

Dog heartworm is a filarial worm that can affect all breeds of dogs. Immature filarial worms circulate in the blood of infected dogs and can be picked up as mosquitoes feed. The worms undergo develop in the mosquito and are transmitted by the mouthparts when the mosquito feeds again.

Encephalitis is a viral infection that causes inflammation of the brain. Arthropod borne viruses are those which are moved from host to host by a variety of arthropods, including mosquitoes. St Louis encephalitis and West Nile encephalitis are viral infections that are maintained in nature by a bird-mosquito-bird cycle. A spill over into human and mammal populations can occur in some years. La Crosse encephalitis is a viral disease spread from mammals, such as chipmunks and tree squirrels, by mosquitoes in the hardwood forest areas in several mid-western and mid-Atlantic states, including Kentucky. Children are particularly at risk to La Crosse encephalitis.

Arthropod-borne viruses are public health issues that are dealt with through control programs directed at the mosquito species that carry the viruses. Individuals can protect themselves through the exclusion of mosquitoes from homes and buildings by screened doors and windows, elimination of mosquito breeding sites, and careful use of repellents.

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