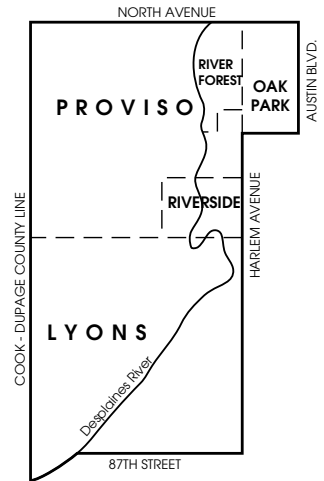




THE DESPLAINES VALLEY Mosquito Abatement District encompasses a 77 square mile area in the western suburbs of Chicago. The District is comprised of Lyons, Oak Park, Proviso, Riverside, and River Forest townships and includes thirty-one villages.

The District is an independent municipality, established in 1927. Our goal is the reduction of mosquito annoyance and potential disease transmission by the mosquito, using the safest and most environmentally sound methods available.



Disease Vector Control

The District takes the threat of mosquito-borne diseases seriously and utilizes a number of control strategies to abate mosquitoes capable of disease transmission. These include:

1. storm water curbside and off-road catch basin treatments,
2. general larval control operations encompassing vector and nuisance mosquito control,
3. discarded tire collections,
4. a variety of public education efforts to minimize vector mosquito breeding around their property.

The Desplaines Valley Mosquito Abatement District wants and needs your help in controlling mosquitoes. Follow the suggestions in this pamphlet and contact us if you have questions or wish to notify us of areas of standing water.

Call us at 708-447-1765

or visit our web site at
www.desplainesvalleymad.com

**Prepared by the Desplaines Valley
 Mosquito Abatement District**

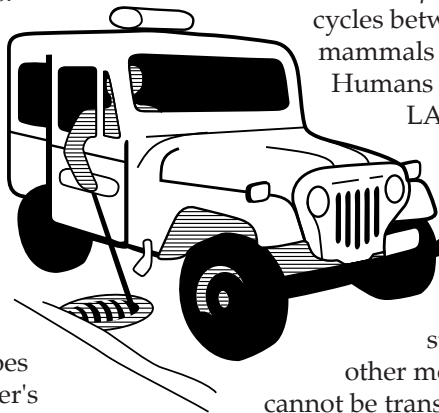
Mosquito-Borne Diseases

Mosquito-borne diseases have been a serious, destructive force around the world throughout history. In northern Illinois, two primary diseases are of concern to the District. These are West Nile Virus (WNV) and the closely related St. Louis Encephalitis (SLE).

West Nile Virus (WNV)

WNV was first found in northern Illinois in 2001. In 2002, an epidemic of WNV in Illinois resulted in 884 human cases of the disease with 66 deaths. WNV is caused by a virus that cycles between mosquitoes and birds, with occasional spill-over into humans and other mammals. The virus can have a high mortality in certain bird species while having little effect on other bird species. Crows and Blue Jays are extremely susceptible to the virus, as are eagles, hawks, and other raptors. Humans are considered a dead-end host for the virus, which cannot be transmitted from person to person. WNV affects the central nervous system causing an inflammation of the brain. Most human infections are subclinical (mild and not diagnosed). Symptoms associated with mild cases of WNV are low fever, headache, body aches, and swollen lymph glands. Less than 1% of people infected with WNV will develop severe illness. In more severe cases, symptoms can be high fever, neck stiffness, muscle weakness, stupor, coma, tremors, paralysis, and in 3-15% of severe human infections, death. People of all ages are susceptible to WNV and are at risk.

Mosquitoes from the genus *Culex*, in particular the species *Culex pipiens*, can spread WNV from birds to birds and birds to humans. These mosquitoes deposit their eggs directly on the water's surface. They are most abundant in periods lacking rainfall when areas of stagnant water prevail. They are well adapted to many habitats including curbside storm water catch basins, off-road storm water catch basins, discarded tires, buckets & other artificial containers, rain gutters, bird baths, unused swimming pools, ditches, ponds, etc.



Anywhere that water can stand for more than a week can become a potential breeding site for *Culex* mosquitoes. The adult mosquito is a not an aggressive biter with feeding primarily confined to evening or night hours. It seldom travels more than ½ mile from its breeding grounds. The *Culex* mosquitoes can have many over-lapping generations each season and over-winter as adults.

St. Louis Encephalitis (SLE)

As with WNV, SLE cycles between birds and mosquitoes with humans being a dead-end host. SLE cannot be transmitted from person to person. Unlike WNV, SLE has little effect on birds that are infected. Most human infections are subclinical (mild and not diagnosed) exhibiting flu-like symptoms. More severe cases can exhibit high fever, nausea, headache, personality changes, paralysis, and in 2-20% of severe cases, death. The elderly are most susceptible to SLE. An epidemic of SLE within Illinois occurred in 1975, with a few cases reported in recent decades.

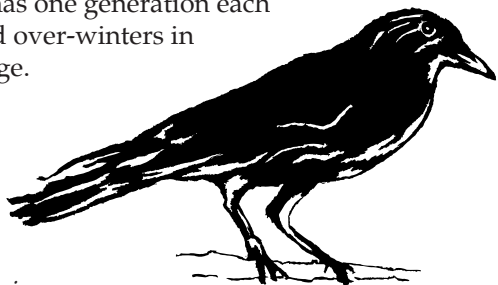
The mosquitoes that transmit (vector) SLE are the same as WNV, with description under that category.

Other Encephalitis Viruses

LaCrosse Encephalitis (LAC) is caused by a virus that cycles between mosquitoes and small mammals as chipmunks and ground squirrels. Humans are considered a dead-end host.

LAC is endemic in Illinois with 5-15 cases per year, primarily occurring in small areas of central and northwestern regions of the state. The majority of LAC cases are mild and subclinical. Children under the age of 16 are most susceptible to this virus. As with other mosquito-borne encephalitis, LAC cannot be transmitted from person to person. The eastern tree hole mosquito, *Ochlerotatus triseriatus* is the vector of this disease. This mosquito normally develops in water filled rot cavities in trees (tree holes), but has adapted well to many man-made habitats as discarded tires, buckets, and other artificial containers.

The adult mosquito is an aggressive biter that feeds all day long, and generally stays within the vicinity of its source. The *Ochlerotatus triseriatus* has one generation each season, and over-winters in the egg stage.



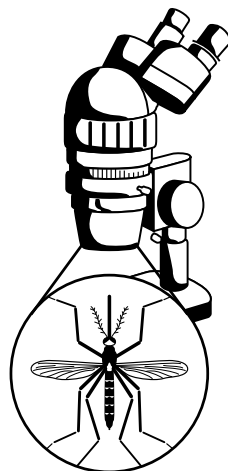
Western Equine Encephalitis (WEE) is similar to SLE, cycling between birds and mosquitoes with rare spill-over to the human population. WEE primarily affects horses, and is typically found west of the Mississippi River, but has also been found in Illinois. The primary vector of WEE is *Culex tarsalis*, and possibly *Culex pipiens*. The *Culex tarsalis*, like other *Culex*, lay eggs directly on the water's surface. The mosquito can be found in sunlit sources with high organic content as ditches and artificial containers. The mosquito seldom travels more than 1 mile from its source, however has been known to travel up to 10 miles. This species has multiple, over-lapping generations each season, and over-winters as adults.

Eastern Equine Encephalitis (EEE) is another virus that cycles between birds and mosquitoes with horses and humans as dead-end hosts. Human infections of EEE can range from mild to severe, with more than half of diagnosed severe cases resulting in death. Fortunately, human cases of EEE are rare. No human cases of EEE have been reported in Illinois, although the virus has been found regularly in bird populations. The primary vector of EEE is *Coquillettidia perturbans*, a mosquito found in wetlands. They lay their eggs directly on the water's surface. The mosquito is an aggressive biter and a strong flier, feeding during the evening or night. This species usually has one generation each season, and over-winters as larvae attached to the stems of cattails or similar aquatic plants.

Other Mosquito-Borne Diseases

Malaria is a disease caused by a protozoan parasite transmitted from person to person via the mosquito. At one time, malaria was prevalent in Illinois, especially in the southern part of the state. Although the mosquito which carries the disease, *Anopheles quadrimaculatus*, is still found in the area, mosquito control efforts in the 1920's have eliminated the risk of malaria in Illinois.

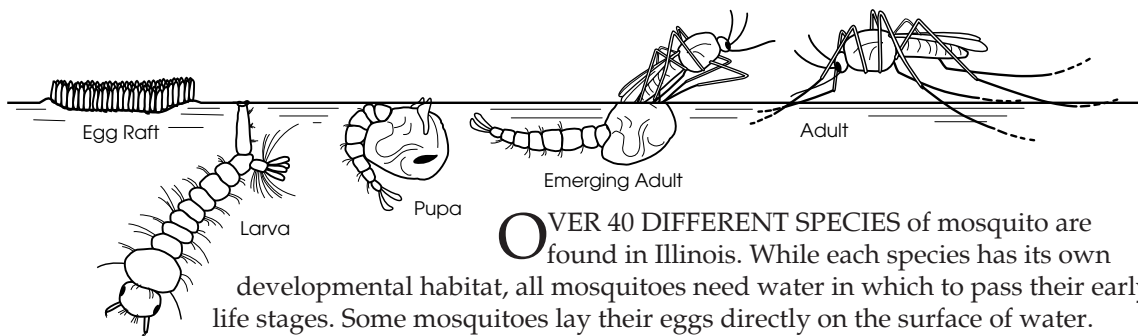
Dengue and Yellow Fever are both diseases caused by viruses that are transmitted by mosquitoes. They are common in the Caribbean, South America, Asia, and Africa, but are unlikely to occur in Illinois.



Canine (Dog) Heartworm is a disease affecting dogs that is transmitted by mosquitoes. It is caused by a roundworm, *Dirofilaria imitus*. The *Culex pipiens* and possibly *Aedes vexans* are the vectors in our area. The disease is ongoing and best controlled by prevention. Veterinarians typically prescribe drugs to prevent the roundworm larvae development in dogs.

HIV in Mosquitoes

Mosquito-borne viruses must be able to multiply and infect the salivary glands of the mosquito. This does not occur when HIV is ingested by mosquitoes. Studies have concluded that mosquitoes do not transmit HIV virus.



OVER 40 DIFFERENT SPECIES of mosquito are found in Illinois. While each species has its own developmental habitat, all mosquitoes need water in which to pass their early life stages. Some mosquitoes lay their eggs directly on the surface of water. Other mosquitoes lay their eggs in areas that will eventually fill with water. Once eggs come in contact with water, they hatch into larvae within several days. Mosquito larvae undergo four stages of growth and development called instars. Larvae feed on organic material and microorganisms in the water and return to the surface of the water to breathe. Larval development may be as rapid as 5-7 days in warm weather. After the larval stages are complete the larvae shed their skins and emerge as comma-shaped pupae. Pupae are very active and dive vigorously if disturbed. Pupae do not feed while they undergo metamorphosis to the adult stage. The adult mosquito emerges from the pupal skin and rests on the water's surface until it dries.

Both male and female adult mosquitoes feed on plant nectar, but only the female bites to get the blood needed for the development of eggs. Although not all species of mosquito transmit diseases, many species throughout the world can carry (vector) diseases to humans and other warm-blooded animals. In our area, there are several species that are of primary concern regarding the transmission of diseases.

How you can help

Since disease carrying mosquitoes develop in stagnant water, places that can hold water for more than a week are potential sources of mosquitoes. Many potential breeding sites can be found around the home. These include old tires, buckets, wheelbarrows, clogged rain gutters, childrens' wading pools, etc. In addition, disease carrying mosquitoes are "home bodies" and tend to stay near their breeding sites. Residents can take the following simple steps to eliminate potential sources for these mosquitoes.

- Throw away all trash that can hold water (cans, jars, tires, etc.).
- Clean rain gutters and downspouts to prevent water from standing in gutters or on flat roofs.
- Change water in bird baths, wading pools, etc. at least once a week. Maintain swimming pools properly.
- Keep ditches and streams on or around property free of grass clippings, garbage, and other debris to insure proper flow.
- Stack pails, barrels, tubs, wheelbarrows, and similar containers
- Stock ornamental ponds with goldfish or other surface-feeding fish to control mosquito production.
- Clean out and fill tree holes.

