



Culex tarsalis. Image courtesy of Joseph Berger, University of Georgia, Bugwood.org

C. tarsalis and *C. pipiens* (not pictured) are among the most frequent vectors of West Nile virus nationwide. Populations peak between July and September. Females breed in a variety of temporary, shallow water habitats, ranging from wetlands to polluted water in a tin can. The larvae of both are fairly tolerant of polluted water or water with high organic content; *C. pipiens* is the most pollution-tolerant and tends to dominate in urban areas.



Figure 2. *Aedes vexans*. Image courtesy of Perry Babin (©2006)

Aedes vexans is one of the most abundant mosquito species in Oregon and Washington. They bite most often at dusk and throughout the evening on warm summer nights. Eggs are laid in moist soil in areas that flood or are irrigated or in standing water. Eggs are resistant to freezing and drying.

This mosquito is known for breeding in floodwater habitats (from agricultural irrigation to flooded streams), but is also very common in urban areas. As many as 500 larvae can be found in just 2 ½ cups of water.¹ Adult females may disperse up to 29 miles.²

Mosquitoes are a natural part of the environment we live in, but they are a nuisance and can be a health threat because of their ability to transmit several diseases.

MOSQUITO LIFECYCLE AND HABITATS

The adult male mosquito consumes nectar and other sugary fluids, whereas the adult female mosquito requires a protein-rich meal that she acquires from the blood of humans, horses, birds, and other animals. She uses a needle-like mouthpart to obtain her blood meal from a host animal. While feeding, she may also transfer pathogens she may be carrying, such as West Nile virus.

Mosquitoes go through four developmental lifestages—egg, larva, pupa and adult. The adult female mosquito lays eggs in aquatic or very damp environments typically in the spring and summer. The eggs hatch and the larvae, also called “wigglers”, develop in the water and are filter feeders. The pupal lifestage of the mosquito is also aquatic. Mosquitoes can develop from egg to adult in as little as seven days depending on the species and temperature.

Over 50 mosquito species may be found in Washington and Oregon. Mosquito species from the genera *Culex* and *Aedes* dominate regional populations in both Oregon and Washington. Depending on the mosquito species, eggs may be laid in habitats ranging from storm sewers and mud puddles to the water left in a tin can, or the drip tray beneath your potted plants. In natural areas, mosquitoes may breed in marshes, streamside pools formed from spring floods, irrigated agricultural areas, marshes and tree hole cavities of hardwoods.

Adult mosquitoes are notoriously difficult to manage because they can fly great distances, and they rest in protected areas that reduce their exposure to widespread pesticide fogging. However, there are several simple options for reducing mosquito populations in your area.

FACTS ABOUT WEST NILE VIRUS

West Nile virus (WNV) is a form of encephalitis—a virus that attacks the nervous system.

- About 1 in 5 people who contract WNV show at least mild symptoms (nausea, dizziness, headaches, lethargy)¹. Severe symptoms are rare, but may include tremors and paralysis.
- *Culex tarsalis* and *Culex pipiens* are the most abundant WNV vectors during peak mosquito season, July through September.
- Humans and horses are “dead end” hosts for WNV; they cannot re-transmit it to another mosquito if bitten. Birds infected with WNV may re-transmit the virus to other mosquitoes that bite them.
- WNV monitoring occurs throughout Oregon (since 2001) and Washington (since at least 2002). WNV was first reported in humans in Oregon in 2005 and in Washington in 2006.³
- Preventing mosquito breeding habitat and managing populations at the larval stage is the most effective approach to reducing mosquitoes and transmission of WNV.

WHAT CAN YOU DO?

Help prevent mosquito-breeding habitat and reduce your chances of being bitten.

1. From spring through summer, keep an eye out for standing water (bird baths, tires in play areas, flower pots, trash) in the area and either empty the water once a week or remove the receptacle.
2. Report recurring puddles, standing water, and problematic sprinkler heads to your school facilities department.
3. Exclude adult mosquitoes from indoor environments. Repair window screens. Don't prop doors open.
4. Avoid the outdoors during dawn and dusk during peak mosquito months (from July through September). If outside, wear long-sleeved clothing.
5. *Bacillus thuringiensis israelensis* (or *Bti*) is a bacterium with insecticidal properties. It may be placed in aquatic habitats to kill larval mosquitoes. *Bti* is a pesticide and should be applied by the proper personnel.
6. Read the label carefully before applying mosquito repellents to yourself or a child.

FOR MORE INFORMATION

- ¹Robinson, William H. (2005). *Urban Insects and Arachnids*. Cambridge: Cambridge University Press.
- ²Bowen, M. F. 1991. *The Sensory Physiology of Host-Seeking Behavior in Mosquitoes*. *Annual Review of Entomology* 36:139-158.
- ³Oregon Department of Public Health and Washington State Department of Public Health.
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit <http://npic.orst.edu>.*



FOR MORE INFORMATION

Urban.IPM@wsu.edu | schoolipm.wsu.edu

WSU Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, and national or ethnic origin; physical, mental, or sensory disability; marital status or sexual orientation; and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through your local WSU Extension office.



FOR MORE INFORMATION

jennifer.snyder@science.oregonstate.edu
[www.ipmnet.org/Tim/IPM_in_Schools/
IPM_in_Schools-Main_Page.html](http://www.ipmnet.org/Tim/IPM_in_Schools/IPM_in_Schools-Main_Page.html)

This publication will be made available in accessible formats upon request. Please call 541-737-4411 for further information.

Funding for this project was provided by grants from:

