



Extension FactSheet

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Wetlands and West Nile Virus

What is West Nile Virus?

West Nile Virus (WNV) is a viral disease that can cause encephalitis or meningitis, infection of the brain and the spinal cord or their protective covering. Prior to 1999, the disease was found only in Africa, Asia, and southern Europe. Over the past several years, WNV has caused disease in the United States. In 1999, at least 62 people became seriously ill, and seven of those died. Since then, WNV has rapidly spread throughout North America. During the year 2000, 21 human cases of WNV encephalitis were reported in the United States, with two deaths. In 2001, there were 66 cases with nine deaths. In 2002, 4,156 human cases of WNV encephalitis or WNV fever were reported with 284 fatalities. During 2003, almost 10,000 human cases of WNV encephalitis and fever were reported from 46 states, with 264 fatalities. Since 2003, WNV cases and fatalities have continued to remain fairly high. The yearly number of cases and number of fatalities have fluctuated depending on the weather conditions throughout the nation. It is expected that WNV will continue to be a serious disease threat well into the future.

West Nile Virus is spread to people by the bite of an infected mosquito. The principal transmitter of West Nile Virus is the Northern House Mosquito (*Culex pipiens*). Mosquitoes first become exposed to the virus when they feed on birds that are infected with WNV. Once the mosquito is infected, it may transmit the virus to people

Year	United States		Ohio	
	Cases	Deaths	Cases	Deaths
1999	62	7	0	0
2000	21	2	0	0
2001	66	9	0	0
2002	4,156	284	441	31
2003	9,862	264	108	8
2004	2,539	100	12	2
2005	3,000	119	61	2
2006	4,266	177	48	4
2007	3,623	124	23	3

or other animals when it bites them. Many birds can be infected with WNV, but crows and blue jays are most likely to die from the infection. Horses, too, are prone to severe WNV infection. People cannot get WNV from another person or horse that has the disease.

Continued spread of this disease among wild birds and mosquitoes is anticipated. State, federal, and local agencies are working together to address the health risks of WNV to Ohio families and their animals. Ohio public health officials test for WNV in many species of birds, mosquitoes, and horses. Once infected areas are identified, mosquito control efforts are increased in those areas to protect people from the disease.

Prepared by:



Ohio Department of Health • Ohio Department of Agriculture • Ohio Department of Natural Resources

The Ohio State University • Ohio Environmental Protection Agency • Association of Ohio Health Commissioners

Ohio Mosquito Control Association • Ohio Environmental Health Association • United States Department of Agriculture

If I'm hiking or walking in an area with wetlands, how can I protect myself from West Nile Virus infection?

WNV infections usually peak in late summer and early autumn, before mosquito numbers are reduced by hard freezes. If you hike or walk out of doors during this period, you should wear long-sleeved shirts, long pants, and apply insect repellents to clothing and skin, following the label directions, to prevent mosquito bites.

What is the value of a wetland?

Wetlands are among the most biologically productive habitats in the world. Before European settlement, Ohio's wetlands covered 18.9% (5 million acres) of the state. As settlers moved west, they drained the wetlands for timber and farming, thus eliminating 87% of the state's original wetlands. Wetland-dependent wildlife species have been severely impacted by this significant reduction in the amount and quality of wetland habitat. Wetlands are highly productive. They warm quickly in spring and produce abundant quantities of food for amphibians, reptiles, shorebirds, migrating birds, and waterfowl. Even small sites, much less than an acre, can produce hundreds of frogs, toads, and salamanders. They also provide critical links to other habitat types and wildlife populations.

Should wetlands be drained to control mosquitoes?

Because the *Culex* mosquito can breed in very small amounts of water, eliminating temporary standing water in plastic containers, discarded tires, or other water-holding containers around one's property can greatly reduce breeding areas. Any stagnant water in rain barrels, irrigation ditches, clogged gutters, backyard home septic systems, and

road-side ditches can serve as breeding sites. The difference between these water-holding places and wetlands is the presence of mosquito-eating predators. Wetlands are home to a host of mosquito-eating beetles, backswimmers, water striders, dragonfly larvae, etc., making them significantly less ideal breeding sites for *Culex* mosquitoes.

Can wetlands be drained or are there regulations that protect them?

Wetlands are afforded protection from draining under the authority of the Ohio Environmental Protection Agency in several sections of Ohio Administrative Code 3745. Under this authority, the hydrology necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on the wetlands. A person cannot alter the water levels of the wetland, which also includes groundwater recharge and discharge.

What is the status of WNV in Ohio?

WNV has been confirmed in Ohio every year since 2001. Infected mosquitoes, birds, horses and humans have been found in all Ohio counties. Therefore, the virus is present throughout the state. Contact your local health department in your area, or visit one of the web sites.

For the current status on WNV in Ohio and for more information, you can log on to the following web sites:

The Ohio State University:
<http://vet.osu.edu/1516.htm>

Ohio Department of Health:
<http://www.odh.ohio.gov/odhprograms/idc/zoodis/wnv/wnv1.aspx>

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