

## Department Of Environment

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"Protecting and Restoring Our Environment"



# West Nile Virus, Wetlands and Stormwater Ponds Frequently Asked Questions

West Nile Virus is here in Southeastern Michigan. The Department of Environment is one among the many agencies trying to help answer questions about West Nile.

## Background

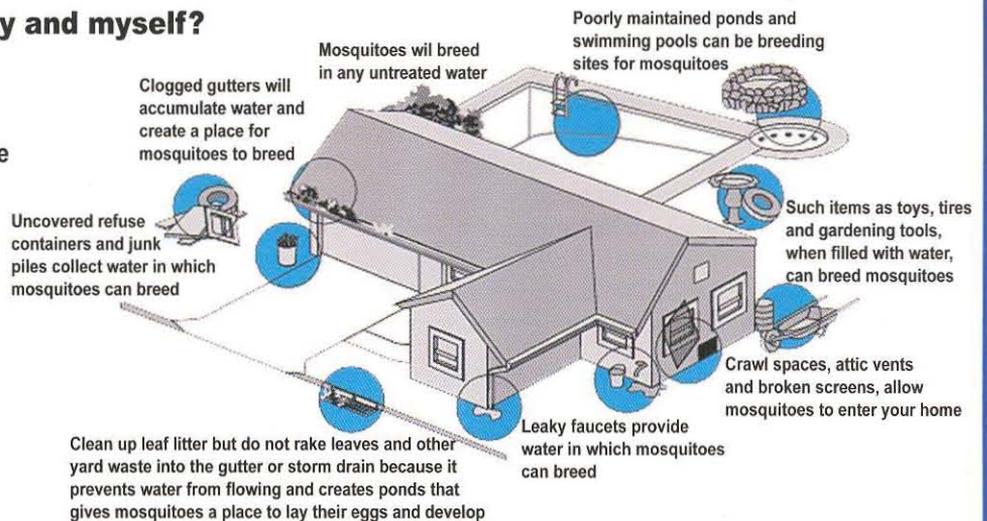
Mosquito borne illnesses in the United States were largely eliminated as a health risk in the first half of the 20th Century. Consequently, Americans have not regarded mosquito-borne diseases as a major domestic public health threat for a long time. With the introduction and rapid spread of the West Nile Virus across the country this perception has changed. This heightened concern has focused the attention and resources of public officials on the habitat, control, eradication, and prevention of mosquito populations.

In 2004, WNV infected 2,282 people, and killed 77. Every year the flu infects between 10%-20% of the US population (approximately 28-56 million people), and kills approximately 20,000. There is currently no test for WNV infection, no specific medication or therapy exists to treat it, and no vaccine is available to prevent it. The Food and Drug Administration has approved a clinical test to detect WNV and the National Institutes of Health forecasts a vaccine may be ready by late 2005.

Wayne County citizens have been asking about what they can do to protect themselves and their families from WNV and about wetlands and storm water ponds in relation to WNV. Answers to some commonly asked questions are described below.

## What can I do to protect my family and myself?

Local and federal health experts recommend avoiding contact with mosquitoes by staying indoors during peak mosquito activity (e.g. evening and early morning), wearing protective clothing and mosquito repellants containing "DEET" when outdoors. In addition, experts recommend eliminating places where water can stagnate in containers such as buckets, flowerpots, tires, landscaping plastic, and pool covers because mosquito species need only small puddles or depressions to breed. Change water regularly in birdbaths, clean clogged rain gutters, and put mosquito screens on rain barrels.



## Why not drain wetlands near homes?

Healthy wetlands provide minimal habitat for mosquitoes in that water conditions, water quality, and natural predators deter mosquito use and minimize larval success if egg laying occurs. Predators including other aquatic insects, amphibians, bats and birds heavily feed on any mosquitoes present. Wetlands are a critical element in a healthy ecosystem that benefits people, water quality and wildlife. Wetlands clean and slowly release rainwater and provide flood protection and wildlife habitat. Many wetlands recharge groundwater critical for local drinking water supplies and prevent streams from drying up during the summer. Draining wetlands will not eliminate mosquitoes. In fact, mosquito populations could actually increase because draining a wetland may destroy the mosquito's natural predators. With approximately 80% of Wayne County's wetlands already destroyed by human activities, additional wetland loss is not desirable.

## Why can't we put fish in ponds, wetlands and creeks with standing water to kill the mosquito larvae?

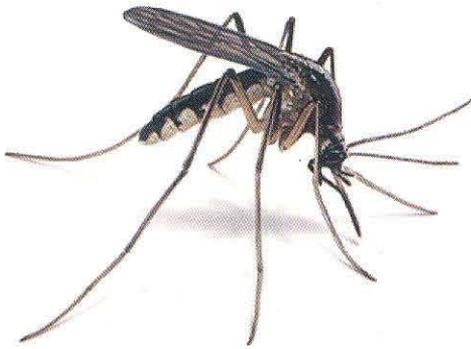
Natural wetlands and creeks do have native fish, amphibians (i.e. frogs, toads, newts and salamanders) and other aquatic invertebrates that are voracious predators of mosquitoes and their larvae. Moreover, it is illegal to deliberately introduce a non-native species into local waters without a permit from the Michigan Department of Natural Resources. Non-native species often create additional problems. They can proliferate forcing out native, beneficial species of fish and other wildlife and often they carry exotic diseases that kill and harm native species. Many ponds and wetlands dry out during the summer and any fish introduced would not survive.

## Why does the county have stormwater ponds?

When land is developed to create homes and other improvements, the natural system of trees and dense vegetation over spongy soil is replaced with hard surfaces and lawns over compacted soil. Consequently less of the rainwater that falls is soaked up and more of it runs off at a faster rate. In addition, there are more pollutants in the rainwater runoff due to human activities such as vehicle use and lawn care.



Stormwater ponds detain and slow the rate of runoff from developed areas and remove pollutants that are collected in the runoff. They are commonly used throughout the United States and the rest of the world. In doing so, the ponds reduce flooding, erosion, and pollution, all of which are essential to protecting public and private property, public health and safety, and water quality. These ponds are a vital element of Wayne County and local community programs to improve water quality, meet federal and state water quality laws and to preserve and protect our valuable natural resources.



## Is someone going to spray for mosquitoes?

Spraying is a way to control adult mosquito populations. Because of concern about WNV in 2004, it is likely that some communities will begin or increase mosquito spraying (and/or abatement) programs this year. The MDA and other State agencies believe that local governments that conduct mosquito abatement programs should consider a comprehensive and integrated plan that includes public education, personal protection, source reduction and appropriate intervention to prevent or reduce mosquito populations. If a community is going to spray for adult mosquitoes, there are specific MDA requirements that must be followed. Extensive information on mosquito control methods including spraying for adult mosquitoes can be found on the State of Michigan's West Nile Virus Website at <http://www.michigan.gov/westnile>

## What other mosquito control methods are being used? Are they dangerous?

Besides spraying for adult mosquitoes, there are many control methods that target mosquitoes before they become adults. These methods, called larvicides, specifically affect the larvae of the mosquito and prevent them from developing into adults. Various products containing the naturally occurring bacteria *Bacillus thuringiensis israelensis* (B.t.i) and *Bacillus sphaericus* (B.s.) are being used for the control of mosquito larvae. These bacteria are considered ideal for mosquito larvae management because of their specificity to mosquitoes and it's non-toxicity to humans, birds, pets, fish and desirable insects. B.t.i. and B.s. are added to water as either a wettable powder, spray concentrate, liquid concentrate, dust, bait or time release ring, where larval stage mosquitoes ingest it. B.t.i and B.s. are naturally occurring pathogens that readily break down in water, soil and on vegetation.

Methoprene based products are also being used for the control of mosquito larvae. Methoprene is an insect growth regulator that interferes with the development of mosquitoes, not allowing the larvae to develop into adults. Methoprene is non-toxic to both humans and pets. However, some research indicates that methoprene, in combination with other factors, is slightly toxic to some species of fish and may cause amphibian mutations and deformities. Because of this, methoprene should only be applied where fish and amphibian species are protected from contact. It should not be directly applied to surface waters that contain fish or amphibian species.

The Michigan Department of Environmental Quality (MDEQ) requires the submittal of certification forms from any person or entity that intends to treat surface waters with mosquito control products. Certification forms and information can be found at the MDEQ website [www.deq.state.mi.us/documents/deq-wd-mosquito-generalcert001.pdf](http://www.deq.state.mi.us/documents/deq-wd-mosquito-generalcert001.pdf)



For more information on West Nile virus, visit Public Health - Wayne County's West Nile Web page at <http://www.waynecounty.com/hhSvc/disease/wnile.htm>

The web page will be kept up-to-date as new information becomes available.

Or you can call Wayne County Department of Environment's 24-Hour Environmental Hotline to get answers for any of your environmental questions at

**1-888-223-2363**

References:  
Rapid Spread Of West Nile Virus & Clean Water Act Barriers For Mosquito Control To Be Focus Of Congressional Hearing. Press Release October 8, 2002, U.S. House Committee on Transportation and Infrastructure, U.S. Rep. Don Young, Chairman.  
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