Stormwater Management and West Nile Virus

For more information, visit www.westnile.state.pa.us or call 877-PA-HEALTH

**What is West Nile virus?**

West Nile virus (WNV) is a mosquito-borne disease that can cause encephalitis, a brain inflammation. Infected mosquitoes pass the virus onto birds, animals and people. In 1999 WNV first appeared in New York and then spread into Pennsylvania in 2000. WNV can now be found in all 48 contiguous states. In Pennsylvania, cases of WNV usually occur in the mid-summer or early fall, although mosquito season is usually April through October.

The principal route of human infection with WNV is through the bite of an infected mosquito. Other methods of transmission, which represent a very small percentage of cases; include blood transfusion, organ transplantation and mother-to-child (ingestion of breast milk and transplacental).

**Who is most at risk?**

According to the Centers for Disease Control and Prevention (CDC), all residents of areas where virus activity has been identified are at risk of getting WNV; persons over 50 years of age have the highest risk of severe disease.

**What are the symptoms?**

People with mild infections may experience fever, headaches, body aches, skin rash and swollen lymph glands. People with more severe infections may experience high fever, headaches, neck stiffness, stupor, disorientation, coma, tremors, occasional convulsions and paralysis. If an individual has any of these symptoms they should contact a family physician.

**Is there treatment?**

There is no specific treatment for WNV infection. While most people fully recover from the virus, in some severe cases hospitalization may be needed.

**What is Pennsylvania doing to prevent mosquito production?**

A multi-agency effort led by the state departments of Health, Environmental Protection (DEP) and Agriculture has created a comprehensive, statewide plan to try to limit the impact of virus outbreak in the state.

One of the main objectives of the program is to reduce potential mosquito production across the state. Eliminating places for mosquitoes to live is an important part of an integrated pest management program, and whenever possible is the preferred solution to mosquito control. When source reduction is not possible, larval and adult mosquito control is conducted.

**Are stormwater catch basins significant production areas for WNV carrying mosquitoes?**

Catch basins can be important production areas for mosquitoes in the genus Culex (the primary vector of WNV in Pennsylvania). Many storm drain systems are designed to quickly direct water from impervious surfaces to nearby streams. Sometimes these systems can become clogged with debris, which can lead to standing water and mosquito production. Malfunctioning systems should be reported to local authorities for repair. Older catch basins were designed to trap debris and hold a small portion of the storm water after a rainfall event. These catch basins are a significant source of mosquito production and need to be treated for mosquito larvae on a regular basis. Some counties actively treat catch basins with mosquito larvicides to prevent mosquito production.

**Are residential stormwater retention basins significant production areas for WNV carrying mosquitoes?**

Most residential stormwater retention basins are designed to drain in less than four days, which prevents mosquito larvae from completing their development. Mosquitoes need at least four days of larval development to reach adulthood during the summer. Storm water retention basins that contain water for more than a week following a rain event should be reported to the county West Nile coordinator.

**Are stormwater retention wetlands/ponds significant production areas for WNV carrying mosquitoes?**

Stormwater retention wetlands and ponds may provide appropriate habitat for mosquitoes and mosquito larvae. Mosquito populations are often significantly reduced by the presence of natural predators such as fish and predaceous aquatic insects. When mosquito production is a problem, mosquito larval control should be added to the normal maintenance of debris removal, slope maintenance, removal of invasive vegetation and sediment removal. Larval
control is relatively inexpensive and should be performed from June through October to coincide with the peak of the WNV season in Pennsylvania.

Remember…….

The county West Nile coordinator works closely with DEP regional WNV biologists to monitor and control mosquito populations throughout the commonwealth. Those concerned about WNV are encouraged to visit www.westnile.state.pa.us for regular updates on WNV activity within the state. This website also has a list of the county West Nile coordinators who can assist with the monitoring and control of mosquitoes in your area.

How can individuals protect themselves?

It is not necessary to limit any outdoor activities, unless local officials advise otherwise. However, try to reduce the risk of being bitten by mosquitoes. In addition to reducing stagnant water in the yard, make sure all windows and doors have screens, and that all screens are in good repair. If WNV is found in the area:

- Take normal steps to prevent insect bites.
- Wear shoes, socks, long pants and a longsleeved shirt when outdoors for long periods of time, or when mosquitoes are most active.
- Consider the use of mosquito repellent, according to directions, when it is necessary to be outdoors. Wash all treated skin and clothing when returning indoors.

Remember, electromagnetic devices, ultrasound devices and Vitamin B are not effective in preventing mosquito bites.

Where is there more information?

Visit the West Nile website at www.westnile.state.pa.us, or call 717-346-8238 or contact DEP at the appropriate regional office below.

DEP Regional Offices

Northwest Region
230 Chestnut St.
Meadville, PA  16335-3481
Waterways and Wetlands: 814-332-6945

Counties: Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren

Southwest Region
400 Waterfront Drive
Pittsburgh, PA  15222-4745
Waterways and Wetlands: 412-442-4000

Counties: Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland

North-central Region
208 W. Third St., Suite 101
Williamsport, PA  17701-6448
Waterways and Wetlands: 570-327-3636

Counties: Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union

South-central Region
909 Elmerton Ave.
Harrisburg, PA  17110-8200
Clean Water/Waterways and Wetlands: 717-705-4700

Counties: Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York

Northeast Region
2 Public Square
Wilkes-Barre, PA  18701-1915
Waterways and Wetlands: 610-861-2070

Counties: Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming

Southeast Region
2 East Main St.
Norristown, PA  19401-4915
Clean Water: 484-250-5900

Counties: Bucks, Chester, Delaware and Montgomery

For more information, visit www.dep.state.pa.us, keyword: West Nile.