West Nile Virus & Wetlands

Oregon Natural Resources Conservation Service

Quick Facts

Functioning wetlands can actually aid in the reduction of mosquitoes by increasing habitat for natural predators, including:

- Dragonflies
- Frogs
- Damselflies
- Water striders
- Backswimmers
- Diving beetles
- Topminnows

Mosquitoes can be further reduced by establishing habitat specifically for:

- Red-winged blackbirds
- Cliff swallows
- Marsh wrens
- Brown bats

How to prevent WNV:

- Reduce mosquito habitat
- Reduce stagnant standing water
- Stay indoors when mosquitoes are active
- Wear long sleeves and pants
- Fix screen doors and windows
- Apply insect repellent containing DEET

What is WNV?

West Nile Virus (WNV) is a viral disease spread to people by the bite of an infected mosquito. The first case of WNV occurred in the United States in 1999 and the disease has steadily moved westward. The virus is expected to arrive in Oregon and other western states in 2003-2004.

The West Nile Virus is carried by mosquitoes and can infect humans, horses, and birds. 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 or other animals when it bites them. People cannot contract WNV from another person or horse that has the disease. The risk to humans is relatively low and usually no symptoms develop as a result of infection. A few cases develop mild illness with flu-like symptoms. WNV infrequently results in severe illness causing encephalitis, and a small number of these cases have been fatal.

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A healthy wetland provides habitat for many unique animals -- including the natural enemies of mosquitoes. According to an Indiana Department of Natural Resources fact sheet, mosquito populations are held in check in healthy wetlands by certain birds, frogs, fish, and insects that feed on mosquito adults and larvae. Wetland restoration projects can actually decrease mosquito populations by providing proper habitat for such predators. For example, when Essex County, Massachusetts, restored a 1,500-acre wetland, the mosquito population dropped by 90 percent (Audubon Magazine, November-December 1996). Other states, such as New Jersey, have also been controlling mosquitoes by eliminating small stagnant breeding areas and using water management practices to increase mosquito predators. These natural methods reduced the cost of mosquito control by more than 97 percent over the traditional method of insecticide application.

When designing wetland restoration projects, considerations should be made up front for mosquito control. Projects with both deep and shallow waters that are connected are generally preferable. Projects should be designed with these criteria in mind to foster the development of a variety of plants and animals that will naturally include mosquito predators, such as dragonflies, damselflies, water striders, backswimmers, predaceous diving beetles, and topminnows. Mosquitoes can be further reduced by developing habitat including the installation of birdhouses that will attract insect-eating birds such as red-winged

blackbirds, cliff swallows, and marsh wrens. The addition of bat boxes is also a useful tool for mosquito control. A single small brown bat can consume 1,200 mosquito-sized insects in just one hour.

How Can I Prevent WNV?

These steps can help to greatly reduce mosquito populations. However, it is still important to take general precautions against WNV. Local and federal health experts recommend the best protection against WNV is to reduce mosquito habitat, prepare your home, and take personal protection measures. Mosquitoes lay their eggs in stagnant standing water. Water in items such as buckets, flowerpots, tires, birdbaths, wading pools, and rain gutters should be emptied or changed at least once a week. Consider staying indoors from dusk to dawn when mosquitoes are most active, wear long sleeves and pants, fix and install screen doors and windows, and wear insect repellent that contains DEET. Read the instructions on the repellent carefully. Repellent should not be applied to children under the age of two. For more information go to the Center for Disease Control website at http://www.cdc.gov/westnile.

For additional information:

Centers for Disease Control
http://www.cdc.gov/ncidod/dvbid/westnile/index.htm
1-888-246-2675

Oregon Department of Human Services
http://www.dhs.state.or.us/publichealth/acd/wnile/index.cfm

City of Portland Environmental Services
http://www.cleanrivers-pdx.org/clean_rivers/west_nile.htm

Ohio State University
What Farmers Should Know About West Nile Virus
http://ohioline.osu.edu/wmv-fact/1001.html

Oregon West Nile Virus Information Line
Toll-free 866-703-4636

NRCS Wetlands Science Institute
Billy Teels, Director
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