Focus *on Mosquitoes*

WASHINGTON STATE DEPARTMENT OF ECOLOGY

General Permit for Insecticides Advocates Larvae Control to Halt Spread of West Nile Virus

Issue

The West Nile virus, one of many mosquito-borne diseases, was first found in the northeastern United States in 1999. The virus can cause encephalitis in humans and some animals. Cases of encephalitis range from mild to very severe illnesses that, in a few cases, can be fatal.

West Nile virus is most commonly spread by the bite of an infected mosquito and can infect many types of birds as well as horses and people. The virus is not believed to be spread from person to person or from animal to person. Mosquitoes pick up the virus by feeding on an infected bird. This fall, a dead raven tested positive for West Nile virus in the Newport area, just north of Spokane near the Idaho border.

Homeowners, local government officials, and other members of the public are wondering what is being done to halt the spread of the virus and what, if anything, they can do. The state departments of Ecology, Health, Agriculture, Fish & Wildlife and Natural Resources have been working together to provide a coordinated response. The Department of Health (DOH) has taken the lead to develop an emergency response plan and is coordinating surveillance activities designed to detect the West Nile virus. Washington's surveillance is part of a nationwide effort spearheaded by the federal Centers for Disease Control and Prevention to track the spread of West Nile virus. Steps that homeowners can take and other links can be found on the DOH website; their website address is provided below.

The application of insecticides is regulated by the Washington State Departments of Ecology (Ecology) and Agriculture (WSDA). WSDA oversees label compliance and issues professional licenses to those who apply pesticides, while Ecology issues permits for uses of aquatic pesticides to assure water quality is protected. *Note: Ecology's permit provides that a state or local health officer, in agreement with Ecology, may order temporary suspension of permit conditions to protect public health in the event of a mosquito-borne disease outbreak.*

Under most controlled circumstances, emergency provisions will not be necessary. This Focus sheet clarifies Ecology's role in permitting the use of insecticides as Washington attempts to control and minimize the effects of the West Nile virus.

Mosquito Control Management

Mosquitoes are best managed on an area-wide basis by public agencies that are either components of local health departments or are independent districts organized specifically for controlling mosquitoes. In Washington, there are approximately 15 mosquito-and vector-control districts (a vector is an organism that carries pathogens from one host to another), mostly in eastern Washington. Some districts are small and have responsibility for mosquito abatement in an area covering several square miles, while the activities of others may encompass an entire county or more.

Under Ecology's general permit, using insecticides to control mosquitoes in surface waters of the state of Washington is subject to the provisions of integrated pest management plans (IPMs), and Ecology works with mosquito districts to develop these plans. Management efforts aim to control, not eradicate, mosquitoes.

A good integrated pest-management (IPM) program can control mosquitoes effectively and reduce pesticide exposure to humans and the environment. Under an IPM, insecticides are dispersed only where mosquito larvae are present and not indiscriminately, providing good source control and minimal exposure to non-target species, which is why larvaciding is better than adulticiding (killing adult mosquitoes).

Under Ecology's general permit, using insecticides to control mosquitoes in surface waters of the state of Washington is subject to the provisions of integrated pest management plans (IPMs). Ecology works with mosquito districts to develop these plans and advocates its IPM mosquito control policy as a model. The underlying philosophy is managing the mosquito habitat and controlling the immature stages before the mosquitoes emerge as adults. This policy reduces the need for widespread pesticide application in urban areas. The model IPM includes the use of pesticides, but only after systematic monitoring of mosquito populations indicates a need. The policy begins with identifying and controlling common rearing sites (tires, puddles at construction sites, flower pots, bird baths, livestock waters, etc). After that, biological controls, then bacterial controls, then growth interrupters, then surface film oils and finally, in health emergencies, organophosphates (malathion and temephos) are considered. Ideally, an IPM program considers all available control actions, including no action, and evaluates the interaction among various control practices, cultural practices, weather, and habitat structure. Thus, this approach uses a combination of resource management techniques to control mosquito populations with decisions based on surveillance and impacts to the environment. Fish-and-game specialists and natural-resource biologists should be involved in planning control measures whenever delicate ecosystems could be affected by mosquito control practices.

Because of the coordinated efforts and technical expertise needed to effectively maintain surveillance and control over mosquitoes, Ecology recommends that communities actively support the formation of mosquito control districts. For more information about establishing a district in your area, please contact your local health department or district.

For More Information

To learn more about **Ecology's mosquito-control general permit,** please visit our website at **http://www.ecy.wa.gov/programs/wq/pesticides/index.html** or contact Kathleen Emmett by telephone at 360-407-7478, fax 360-407-6426, e-mail kemm461@ecy.wa.gov or regular mail at PO Box 47600, Olympia, WA 98504-7600.

To learn more about the **West Nile virus and Washington's concerted response efforts,** visit **Department of Health's** website at **http://www.doh.wa.gov/ehp/ts/Zoo/WNV/WNV.html** or contact the Office of Environmental Health and Safety, PO Box 47825, 7171 Cleanwater Lane, Olympia, WA 98504-7825, telephone 360-236-3380 or 888-586-9427.

Ecology is an equal opportunity agency. If you have special accommodation needs, please call Donna Lynch at (360) 407-7529. The TTY number is 7-1-1 or 1-800-833-6388. Email may be sent to dlyn461@ecy.wa.gov.