



## GENERAL SECTION

### West Nile Virus

During the summer of 1999, a mosquito-borne viral disease made its first known appearance in the United States. The West Nile virus can cause a potentially fatal inflammation of the brain in humans that starts with flu-like symptoms. The West Nile virus also affects birds and other warm-blooded wildlife. Authorities promptly began spraying pesticides (malathion) in the usual places mosquitoes' congregate...wetlands. Late summer and early fall are the most active times for transmission of the West Nile virus. A citizen's group sued the City of New York, in 2000, for the unlawful release of toxic chemicals that may be linked to breast cancer, skin irritation and neurological disorders. Last year, commercial fishermen sued the manufacturer of malathion-based pesticides, alleging they contributed to a severely limited lobster harvest in Long Island Sound.

### CLEAN WATER ACT PERMITTING

Earlier this year the U.S. Court of Appeals for the Ninth Circuit in Oregon ruled that aquatic pesticides could not be applied without a Clean Water Act permit. The ruling, in favor of a citizen's group, found that weed killers applied in the Talent Canal caused fish kills in downstream natural waters (*Headwaters, Inc. v. Talent Irrigation District*, 9<sup>th</sup> Cir. No.99-35373, 3/12/01).

The implication of this decision is that any municipality or company applying even an EPA-labeled or -approved pesticide or herbicide product to "navigable waters" must have a National Pollutant Discharge Elimination System (NPDES) permit. This would include spraying of rivers, streams, lakes, reservoirs, and wetlands.

Last year, the Center for Disease Control (CDC) reported the West Nile virus in 12 states with 21 known human infections. On October 4, the CDC confirmed 25 human infections of West Nile Virus along the east coast including the death of a woman in Atlanta, Georgia. Wild dead birds and sentinel birds (chickens) have tested positive for West Nile virus along the east coast, throughout the Midwest and in California. Although other animals can be exposed by mosquito bites, some, like horses, don't become infected and will not pass the disease on to others.

### INTEGRATED PEST MANAGEMENT

The best way to protect yourself, your family and coworkers is to eliminate mosquito-breeding habitats on your property, such as discarded tires, buckets or drums that can hold rainwater for the four-day life cycle of the average mosquito. Empty and change the water in wading pools, birdbaths, rain barrels, and potted plant trays every week. Make sure that gutters and ditches are not clogged and all windows screens are bug-tight. Mosquitoes are known to use odor when locating a blood meal, thus light traps are not effective mosquito-control devices. Personal protection should include insect repellent containing DEET. However, these products must be used with care on infants and children. If you venture into areas with high mosquito populations, such as salt marshes, use a head net, long sleeves and long pants.

If you own or manage a pond, retention basin or marsh, adding insect-eating fish to your pond will reduce mosquito populations; so will establishing deep water habitats in wetland areas to promote fish passage into mosquito habitats. Artificially manipulating water levels in ponds and marshes can limit mosquito populations by temporarily drying out or flooding breeding areas. These biological controls can be used as part of an integrated mosquito management program with selective application of narrow-spectrum pesticides. Larvicides are the most effective pesticides and *Bacillus thuringiensis israelensis* (Bti), a bacteria that inhibits insect growth, is the safest. Light mineral oil will suffocate the larvae and will quickly volatilize from the waters surface. Adulticides may be necessary in some cases. However, excessive use of any single control method will result in resistance over time.

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