



## ORANGE COUNTY VECTOR CONTROL DISTRICT VEGETATION AND SEDIMENT MANAGEMENT GUIDELINES FOR MOSQUITO CONTROL IN STORMWATER STRUCTURES AND WETLANDS

Implementation of the federal Clean Water Act (CWA) is increasing the number of water retention structures including: silt basins, mitigated wetlands, and other Best Management Practices (BMP). BMP's are being created throughout Orange County. The Orange County Vector Control District (District) anticipates that many water management structures will be built with new development and/or being added to existing areas. All of these structures that become overgrown with vegetation or retain water for more than 7 days may become breeding habitats for mosquitoes that can transmit West Nile virus and other disease agents. Abundant mosquito populations develop when cattails and/or bulrush become too thick and impenetrable for appropriate inspection and control measures. Excessive vegetation also hinders the movement of natural mosquito predators, such as mosquito fish and aquatic insects into mosquito breeding sites. Stormwater and excessive irrigation runoff carries sediment and debris from erosion into water management devices. The effects of the sediment build-up include: reduction in open water areas, increased shallow areas that become filled with emergent vegetation, outlet clogs, and reduced water pecculation rates into the soil.

The District has developed a set of vegetation and sediment management guidelines intended as a preemptive measure to reduce the potential of mosquito breeding in water management devices. A "Maintenance Plan" can be created and followed to minimize mosquito breeding, while maintaining a healthy ecosystem. All water management devices that hold water are subject to failure without periodic scheduled maintenance which includes routine sediment and vegetation controls.

Dense thickets of vegetation (cattail and bulrush) create the following problems:

- Decreases water movement and creating stagnant where mosquitoes breed.
- Prevents predatory mosquito fish (*Gambusia affinis*) from effectively penetrating dense vegetation and reaching mosquito larvae.
- Prevents shoreline access by District staff to adequately perform routine inspections for breeding, and hindering effective application of larvicides.
- Presents as impenetrable barrier that effectively blocks the spread of "biorational" larvicides necessary to achieve an acceptable level of control.

The District recommends the following wetlands vegetation and sediment removal guidelines to significantly reduce the potential mosquito breeding in stormwater management structures and wetlands, providing District staff access necessary to inspect and apply "biorational" larvicides" when needed.

### Vegetation Controls

- Periodically drain the basin to begin a rapid drying process that abruptly stops all breeding. Thin old vegetation so that new less dense, healthier growth can develop.