



RECOMMENDATIONS FOR IMPROVEMENT OF MOSQUITO CONTROL IN MASSACHUSETTS

Many of the recommendations outlined below require funding, studies, and/or legislative changes to the organizational structure of mosquito control practices in Massachusetts. Nevertheless, there are steps that municipalities can take immediately, without incurring direct financial costs.

Municipalities are faced with a dilemma under the existing mosquito control framework. They can join a mosquito control district and risk receiving pesticide applications, wetland ditching, and/or nuisance control activities they may not want or need; or they can stay out of the district and have inadequate capacity to monitor for or respond to West Nile Virus (WNV) or Eastern Equine Encephalitis (EEE). **Mass Audubon recommends that communities request that their local mosquito control district sign a binding agreement to provide only those services that are fully consistent with the Department of Public Health's [Massachusetts Arbovirus Surveillance And Response Plan](#).** Several of the mosquito districts offer “menu-based” services that allow municipalities to select the types of services that will be provided. We encourage local officials to work with the districts to reach such agreements, based on a proactive approach that emphasizes practices that maximize public health benefits and protect the environment. This will help ensure some measure of control over how the money municipalities are contributing to mosquito control is spent, while focusing limited resources on a public health based approach to mosquito control.

In order to more effectively protect the public health and environment, we urge that communities consider this option and the other recommendations outlined below.

Organizational and General Focus Recommendations

- ❖ **Re-organize mosquito control in Massachusetts to focus on public health protection as the primary goal.** The State Reclamation and Mosquito Control Board should be re-constituted and re-named, with the Department of Public Health providing oversight and Department of Fish and Game providing expertise in ecological management for mosquito control. The regional districts should be continually improved and coordinated, with enhanced roles for local boards of health, other municipal representatives, and experts. Nuisance control should be de-emphasized and nontarget and wildlife exposures due to mosquito control pesticides applied for nuisance control purposes should be reduced.
- ❖ **Scientifically based, statewide Integrated Pest Management (IPM) strategies need to be continually updated and refined for Massachusetts mosquito control.** A strong IPM strategy includes the following components:
 - Monitoring protocols for both efficacy and nontarget impacts,
 - Action thresholds,
 - Best Management Practices (BMPs),
 - Record keeping standards and systems (mandated to provide consistent and publicly accessible data on all mosquito control activities and results), and
 - Adaptive management, providing for continual improvements to mosquito control practices based on monitoring program results and evolving techniques.
- ❖ **Wetlands and Stormwater BMPs should be employed.** The State Reclamation and Mosquito Control Board has prepared a Best Management Practices (BMP) [manual](#) and [supplement](#) for freshwater wetlands mosquito management practices to guide ditch cleaning and other mosquito district activities in wetlands. The BMPs include measures to avoid and minimize adverse impacts to sensitive areas (e.g. rare species habitats, fish bearing waters, vernal pools, and water supply areas). BMPs also need to be developed to improve targeting of other mosquito control activities to focus on

measures that will have the greatest public health benefit and to deemphasize spraying on demand in response to nuisance complaints.

We also recommend that mosquito control districts develop cooperative programs with local departments of public works, planning boards, conservation commissions, and boards of health to ensure that stormwater systems are designed and maintained to minimize mosquito breeding and promote habitat for fish and other mosquito predators. Low Impact Development techniques such as vegetated swales and rain gardens for stormwater management rather than catch basins and detention ponds provide benefits for water quality and fish habitat while reducing mosquito habitat. Regular cleaning of catch basins and proper maintenance of detention basins reduces mosquito breeding while also protecting water quality. Mosquito districts should also conduct systematic roadside surveys, in cooperation with local officials and MassHighway, to identify and reduce sources of erosion and sedimentation from roadways

- ❖ **Menu-based Services.** Mosquito control projects should provide municipalities with only the services they want, allowing them to select from a “menu” that includes the right to refuse certain activities such as routine spraying of chemicals for nuisance control. Municipalities should be able to access Massachusetts Department of Public Health surveillance services without joining a mosquito control district.
- ❖ **Stormwater Management and Mosquitoes.**

Data Gaps:

- ❖ **Additional studies on the effects of mosquito control pesticides on humans and other nontarget organisms and ecosystems are needed.** In particular, the long term, subtle effects of pesticide exposure on endocrine and immune systems, behavior, and cancer, as well as indirect food chain and other ecological effects are not adequately understood. Studies of this type are difficult and take many years. Federal agencies such as the EPA or Centers for Disease Control that study pesticides and disease management at the national level would be the most likely entities to undertake this work.
- ❖ **Efficacy studies** are needed to better understand the effectiveness of various approaches to mosquito control in reducing human health risks from WNV and EEE.
- ❖ More **field research**, as opposed to laboratory research, is needed to account for possible ecological and synergistic effects of mosquito control practices, particularly the use of adulticides. Field research should focus on improved documentation of nontarget organism impacts (e.g. testing for mortality of nontarget invertebrates through the use of drop cloths and caged insects placed in spray areas prior to spraying). Standardized and centralized reporting systems should be implemented for tracking all complaints of possible human or nontarget organism exposures to mosquito control applications.
- ❖ **The US Environmental Protection Agency (EPA) should require comprehensive, nontarget impact testing for registration of new mosquito control pesticides.** Although this is not an issue that the Commonwealth can address directly, Massachusetts officials should be aware of and take into account deficiencies in the EPA pesticide registration process when developing statewide BMPs. For example, the lack of data on health and ecological effects of “inert ingredients” and the cumulative effects of multiple chemical exposures in the environment should be considered when establishing state policy and procedures.

Funding:

- ❖ **Adequate funding** should be provided to continue to refine BMPs, monitoring protocols, and computerized recordkeeping to form an integrated and efficient statewide system.

For more information, contact Heidi Ricci, Senior Policy Analyst, 781-259-2172 or hricci@massaudubon.org.

May 2011