

Best Practices Subcommittee Draft Recommendations

The Best Practices Subcommittee is sharing this living document of draft recommendations to the Mosquito Control for the 21st Century Task Force. These topics will likely be the subject of recommendations from the subcommittee, for consideration by the full task force. Please note that the recommendation text presented here is still under development by the subcommittee and may not represent the ultimate majority opinion of the subcommittee.

Directive: (i) Facilitating the use of integrated pest management

- 1. Improving Consistency in the Implementation of Integrated Pest Management**
- 2. Limiting Ground-Based Applications of Adulticides**
- 3. State-Wide Mosquito Surveillance**
- 4. Improving Consistency in MCD Staffing**
- 5. Statewide Education on Mosquito Management**
- 6. Prohibit Aerial Applications of Adulticides**

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

- 7. Online Reporting for Private Applicators**
- 8. Communication with Public Water Systems**
- 9. QA/QC Testing of Chemicals Used in Mosquito Control**
- 10. Protection of Receptor Areas from Pesticide Run-Off**
- 11. Reduce Pesticide Applications for Nuisance Control**
- 12. Monitoring and Evaluations After Spraying**
- 13. Protect Vulnerable Populations and Non-Target Species**

Directive: (iv) Protecting organic agriculture from pesticide use

- 14. Agriculture Opt-Out**
- 15. Protected Status of Certified Organic Farms**

Directive: (i) *Facilitating the use of integrated pest management*

1. Improving Consistency in the Implementation of Integrated Pest Management

Recommendation

The implementation of IPM should follow the science-based guidelines and protocols established in a new statewide Mosquito Management Plan to promote more consistent use of all components of IPM across the state. The Board overseeing mosquito control in the Commonwealth of Massachusetts should direct the preparation of the Plan. The Plan should provide operational guidance and best practices for state agencies and MCDs including a) implementation guidance on each IPM component; b) rationale and thresholds for each IPM component; c) guidance for flexibility in implementing IPM; d) a summary of actions taken, lessons learned, and program data analysis since the prior report; e) evaluation of effectiveness and non-target impacts (i.e. human health and ecological impacts) of each IPM component as deemed appropriate and practical by the Board; and f) a summary of new developments in all aspects of IPM for mosquito control using best available information and new data. Additionally:

- As defined in Chapter 132b, the Plan should involve a combination of “multiple pest control measures to reduce the need for reliance on chemical pesticides.” In other words, activities including but not limited to surveillance, public outreach and education, and source reduction, when applicable, should be prioritized over the usage of chemical pesticides.
- The existing MDPH MA Arbovirus Surveillance and Response Plan and the MDAR MA Operations Response Plan for Mosquito-Borne Illness would be incorporated into the Plan.
- The Plan should include flexibility in mosquito control responses tailored to differences such as in geography, habitats, disease risk levels, season and weather conditions, mosquito species and abundance, and density of residences.
- Updates should include input from the public as well as the involvement of [list relevant state agencies]. All components of the Plan should be updated at a minimum of once every [three years]. Stakeholders should convene annually to determine whether individual components need to be updated more frequently.

Recommendation Components Still Under Consideration

The subcommittee is considering if there are other recommendations that fit into this one.

Background and Rationale

Integrated Pest Management (IPM) is defined in the Massachusetts Pesticide Control Act (Chapter 132b) as “a comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but is not limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.” Although the principles of IPM underlie the practice of mosquito control in Massachusetts, there is a) a lack of consistency in the implementation of IPM across the state and b) no statewide system for documenting mosquito control actions and associated results. Inconsistent application of IPM and lack of efficacy information for IPM components may result in an increase in the amount of pesticide released into the environment without a commensurate benefit in the reduction of mosquitoes or of mosquito-borne diseases.

Considerations for Implementation

How often can this Plan feasibly be updated, taking into account all parts of the update process (including public input and revisions)? Evaluating efficacy and non-target impacts (item e) may not always be feasible, financially or otherwise.

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2. Limiting Ground-Based Applications of Adulticides

Recommendation

MCDs should conduct ground-based adulticiding applications **only** when alternative methods (e.g., source reduction, water management, or larviciding) are not feasible or have been insufficiently effective, and when clear thresholds for spraying are met. These thresholds should be determined by consideration of mosquito surveillance data that demonstrate elevated disease risk **or the aggregation of significant number of complaints**. Thresholds may be tailored based on factors such as geography, habitat, season, weather conditions, mosquito species and abundance, and density of nearby residences. **Individual property-based applications in response to complaints (as opposed to demonstration of elevated disease risk) should be limited to municipally owned sites, such as parks and schools, and at the request of the municipality.**

Recommendation Components Still Under Consideration

Highlighted words above are currently being discussed by the SC. What constitutes a “significant number of complaints”? How can there be flexibility tailored to what each community wants? Would the aims of this recommendation be accomplished under the IPM directive?

Background and Rationale

In progress

Directive: (i) *Facilitating the use of integrated pest management*

3. State-Wide Mosquito Surveillance

Recommendation

The legislature is encouraged to authorize and fund an enhanced monitoring network to include areas of the Commonwealth that are not currently served by a regional MCD. The goals would be to increase the spatial coverage of monitoring mosquitoes that are particularly relevant as vectors of disease agents, and to perform surveillance for those vector-borne agents. Surveillance will be guided by a protocol that includes standards for implementation and analysis. Areas to be monitored should be selected on ecological and epidemiological bases rather than on political boundaries. A state-wide agency should be responsible for overseeing this program to ensure procedural and analytical consistency. Said agency can partner with qualified entities as appropriate.

Recommendation Components Still Under Consideration

Is there a minimum acceptable amount of surveillance that should be conducted in municipalities that aren't part of an MCD, municipalities that have never had EEE cases, etc.? Should this be specified more precisely in the recommendation since there is already state-wide surveillance in place, albeit less uniform/consistent than desired?

Background and Rationale

Monitoring of mosquitoes and surveillance of agents of mosquito-borne disease are essential components of mosquito management in the Commonwealth of Massachusetts. The accumulated data and analyses of trends can inform decisions as to the manner of any intervention and public educational messaging. Current monitoring efforts are performed mainly by personnel from Mosquito Control Districts (MCDs), and such activities are primarily limited to communities that support their regional MCD. Therefore, there has historically been limited data available from communities that are not part of MCDs, which limits evidence-based risk assessment and decision-making in those areas resulting in an incomplete understanding of mosquito species distribution, populations, and disease risk at the state level necessary for a comprehensive statewide control strategy.

Considerations for Implementation

This recommendation will likely require an expansion of an existing state-wide agency's capabilities, as well as an expansion in MCDs' responsibilities. Both would require funding.

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4. Improving Consistency in MCD Staffing

Recommendation

Each MCD should employ an entomologist to identify mosquitoes, and a wetland biologist/permit specialist to evaluate/oversee habitat modification efforts.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee.

Background and Rationale

Newer and/or smaller MCDs may not have an entomologist and wetland biologist/permit specialist on their staffs. This may result in a lack of standardization in the collection of objective data for spraying or for habitat modification decisions across the state.

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5. Statewide Education on Mosquito Management

Recommendation

The state should be principally responsible for statewide education on mosquito management.

Recommendation Components Still Under Consideration

Assess if this recommendation is already being addressed by the Local Engagement Subcommittee.

Background and Rationale

Educational outreach regarding mosquito management is currently fragmented and uncoordinated in the Commonwealth. Further, no MCD has access to the platform that is available to state officials to get out a consistent and repeated message of wide concern

Directive: (i) *Facilitating the use of integrated pest management*

6. Prohibit Aerial Adulticiding

Recommendation

The aerial application of adulticides should be prohibited.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee.

Background and Rationale

There is a lack of proven efficacy of aerial adulticiding in preventing human disease. At the same time, there is likely harm to human and ecological health due to spraying.

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

7. Online Reporting for Private Applicators

Recommendation

Develop an online reporting system so that pesticide application records from private applicators for mosquito control can be analyzed to understand the situation and develop possible recommendation for limiting use.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. What locational information should be part of the online data entry? How frequently should reporting happen?

Background and Rationale

There is a lack of understanding of the scale of private pesticide applications

Considerations for Implementation

If information on the location of the pesticide application is included, how will confidential business information be protected? Funding will be necessary for developing and maintaining this system.

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

8. Communication with Public Water Systems

Recommendation

Establish a system where SRBs, MCDs and private applicators execute clear and active communication practices with public water systems throughout the adulticiding season so that the water systems can incorporate best management practices (e.g., temporarily shutting pumps, altering surface water intake, minimizing demand, etc.)

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee.

Background and Rationale

Currently there is insufficient communication with public water systems about aerial spraying events. This means that public water systems may not be able to adequately prepare for the impacts of these events.

Considerations for Implementation

The specifics of this communication system have not been agreed upon, although it will likely be an electronic system through which information can be shared.

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

9. QA/QC Testing of Chemicals Used in Mosquito Control

Recommendation

Develop a statewide QA/QC testing program that incorporates testing for chemicals used for aerial spraying events and MCD applications.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. Assess if this recommendation is already being addressed by the Pesticide Selection Subcommittee.

Background and Rationale

In progress

Considerations for Implementation

There are challenges for implementation due to the lack of testing lab capacity in the state. There may also be logistical challenges since chemicals are sometimes received right before spray events.

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

10. Protection of Receptor Areas from Pesticide Run-Off

Recommendation

Develop procedures to protect receptor areas (e.g., lakes and streams) that might be receiving run-off from pesticide applications

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. How will this recommendation differ from the 500 ft. buffer already in place for surface water bodies that provide drinking water?

Background and Rationale

In progress

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

11. Reduce Pesticide Applications for Nuisance Control

Recommendation

In consultation with MCDs, consider ways to reduce or restrict the number of individual requests for nuisance controls.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. This recommendation might be covered under the IPM consistency recommendation (Recommendation #1).

Background and Rationale

In progress

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

12. Monitoring and Evaluations After Spraying

Recommendation

MCDs should do monitoring and evaluations after spraying, and if there are more refined standards for evaluating human health and ecological impacts from mosquito spraying, those should be used. (e.g., there may be criteria from EPA available).

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. The subcommittee is considering if this recommendation could be covered under the IPM consistency recommendation (Recommendation #1).

Background and Rationale

In progress

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

13. Protect Vulnerable Populations and Non-Target Species

Recommendation

Determine procedures for protecting vulnerable populations and non-target species even when pesticide application is warranted.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee. The subcommittee is considering separating this into two separate recommendations, one covering vulnerable populations and one on non-target species. Assess if the recommendation by the Local Engagement subcommittee covers the non-target species part of this recommendation.

Background and Rationale

In progress

Directive: (vi) Developing procedures to protect human and ecological health and minimize non-target impacts of mosquito pesticides, including, but not limited to, effects on persons with respiratory or immune system illnesses, drinking water supplies, pollinators and aquatic life

8. Criteria for Declaring a Public Health Emergency

Recommendation

The declaration of a public health emergency re. EEE and WNV should be based on published, research-based, quantifiable criteria established by a board set up to advise the DPH in this regard.

Recommendation Components Still Under Consideration

This recommendation is still under discussion by the subcommittee.

Background and Rationale

In progress

Directive: <i>(iv) Protecting organic agriculture from pesticide use</i>
14. Agriculture Opt-Out
Recommendation Offer the current opt-out option to commercial farms.
Recommendation Components Still Under Consideration This recommendation is still under discussion by the subcommittee. The subcommittee has not determined who exactly should be covered by this recommendation; perhaps “commercial farms” isn’t the best category.
Background and Rationale In progress
Considerations for Implementation A clear definition/determination is needed to make this recommendation feasible since having a patchwork of opt-out zones is a problem for spray efficacy.

Directive: <i>(iv) Protecting organic agriculture from pesticide use</i>
15. Protected Status of Certified Organic Farms
Recommendation Codify the current protected status for certified farms in legislation, not just in policy.
Recommendation Components Still Under Consideration This recommendation is still under discussion by the subcommittee.
Background and Rationale In progress