

**EASTERN EQUINE ENCEPHALITIS EMERGENCY RESPONSE PROTOCOL**  
(2006 Revision)

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**BACKGROUND**

**MONITORING**

The responsibility for monitoring the mosquito population in Rhode Island falls under the purview of the Office of Mosquito Abatement, located in the Department of Environmental Management, Bureau of Natural Resources, Division of Agriculture and Resource Marketing (DAG). The staff of this office collects mosquito samples from around the State, to be tested at the URI's Rhode Island Public Health Partnership Lab

(RIPHPL) for the presence of the Eastern Equine Encephalitis (EEE) virus. Once a positive find is reported, numerous responses are made, depending on the mosquito species, time of year, and other factors.

## DECISION MAKING

The decision to apply pesticide, to control mosquitoes possibly infected with the EEE virus in a particular area of the state, is made by the EEE Advisory Committee. This group consists of officials from the Department of Environmental Management (DEM), the Department of Health (HEALTH), the Rhode Island Mosquito Abatement Board, the University of Rhode Island (URI), and the Governor's Office.

If the test results from the RIPHPL warrant action, they are presented to the EEE Advisory Committee along with relevant, available recommendations from the Centers for Disease Control (CDC). With this information, the committee determines the most scientifically sound, safe and effective way to reduce the numbers of potentially infected mosquitoes, while minimizing any public health risk due to the application. Once this plan is formulated, it is turned over to the DAG for implementation. The protocol, on the following pages, should be used as a guide to assure a successful and safe operation.

## STATE / MUNICIPAL INTERACTION

### RESPONSIBILITIES

If the EEE threat has escalated to such a degree that the State has declared a public health emergency, the State of Rhode Island will be coordinating the response effort. This fact should be made clear to the cities and towns affected by the crisis. The declaration is not to impede local participation but to clarify that the State will be coordinating the response effort and will require local cooperation to succeed. Protocols will be established to address specific situations and problems, and local assistance may be required to set them in motion and follow them to fruition. Administratively, a lot of paperwork will be required in a short period of time, some of it routine and some of it created specifically for the situation. Municipalities will not be able to respond independently or implement a response plan that is exclusively their own. In a public health crisis such as this, an integrated, cooperative effort is required and the State of Rhode Island is prepared to lead the response with the cooperation and assistance of local government.

## AERIAL LARVICIDE AND ADULTICIDE APPLICATIONS

### PREPARATION

Although time will be short in an emergency situation, many operations will have to be completed rapidly. With the cooperation and support of the Department of Administration, some procedures may be expedited or suspended altogether. Whichever the case, the primary objective is to work in a swift and efficient manner to make all the proper arrangements, so that operations will run smoothly, with a minimum of glitches. Otherwise, responders will face unnecessary problems. The following

protocol should be used as a guideline for both larvicide and adulticide applications, including rotary as well as fixed wing aircraft.

## AERIAL COORDINATOR

During the application, staff of the Mosquito Abatement Office will continue to monitor Rhode Island's mosquito population in order to assess the efficacy of the operation. Staff should also be expanding their trapping area to evaluate the situation and detect possible migration of the infected mosquito population. With this in mind, the Chief of the DEM DAG should appoint one of DAG's senior staff to be Aerial Coordinator.

The Aerial Coordinator is responsible for all aspects of the pesticide application and should be on-site during all flight operations. Staff from the DAG will be assigned to various duties and locations, and all normal and routine DAG business should be suspended. Only emergency situations requiring immediate attention will be accommodated.

The aerial coordinator will be responsible for the following duties:

- Solicit quotes from appropriate application companies, and make sure that they will be able to apply the selected pesticide at the rate designated by law.
  - Get at least three quotes. DO NOT get separate quotes for the pesticide and the application. In the long run, a single quote for both the pesticide and application will greatly simplify financial administration.
  - The quote should also contain provisions for the contractor to provide:
    - Personnel to load the material onto the aircraft, if multiple flights are necessary;
    - A spotter plane, in which a member of DAG staff may observe the application;
    - The establishment of a landing zone;
    - Rental of a space, of DAG's choosing, at the state airport, a site from which to base the application, the proper disposal of empty pesticide containers, and adequate spill-containment equipment;
    - Proper disposal of any waste material resulting from clean-up of a pesticide spill.
- Once the vendor is approved by the Department of Administration, make a follow-up contact with the contractor to assure coordination of operations. At this time, discuss the location needs for a base of operations, such as the amount of space required for a base of operation and a specific airport site that would be preferred.
- Get copies of the application company's current and valid certification:
  - Operating Certificate (Part 135 Certification, a document from the Federal Aviation Administration certifying that the operator has met the requirements of the Federal Aviation Act of 1958 and is authorized to operate as an Air Operator);
  - State Registration of aircraft;
  - Appropriate DAG Pesticide certification, including a Rhode Island Pesticide Applicator License and an affidavit of insurance.

- Complete and submit an application, on behalf of the State of Rhode Island, to conduct an aerial application of pesticide. (Forms are available from the DAG.)
- Contact the Rhode Island Airport Corporation to arrange for the designated state airport to provide an appropriate base of operations. (Note: A private company handles management of the state's airports. In 2005, the vendor was Landmark Aviation and the contact person was Steve St. Onge, Operations Manager. Phone: 295-5020, ext. 3009.)
- Contact the State Aviation Inspector's Office to share information on the proposed operation, including copies of the contractor's operating certificate, specifications of the equipment to be used, and any other information that the Inspector may require. (In 2005, the contact person was Al Moder, Chief Aeronautics Inspector, phone 737-4000, ext 229, or Jim Warcup, at ext. 227.)
- Get enough cellular phones and pagers to send and receive reports concerning all aspects of the operation. Most importantly, set up a system to keep immediate superiors apprised of what is going on.
- Maintain a record of all incidents, good and bad, during the application.
- Meet with the pilots to determine the best flight plan for a particular day. These meetings should take place prior to each flight and, as necessary, during the actual application.
- Meet after each flight to review the application and to identify problems. Information garnered from these post-flight meetings should be reported to the Chief and Associate Director of DAG as well as others whom the DAG Chief may designate.
- Assist the application crew with any other arrangements and needs they have while they are in the application area.
- Establish a Communication Headquarters to provide a clearinghouse for all application-related communication and information.
- Establish a procedure for communicating with the representatives of the city or town to be treated so that the information about the application can be readily passed to the affected public. It may be wise to have on-scene a city or town representative who is familiar with the area to be treated and who might offer insights on application strategy.

## COMMUNICATIONS OFFICER

The Aerial Coordinator should select a Communications Officer to be the primary contact for all information regarding the pesticide application. This person should be situated at the Mosquito Abatement Lab in Wakefield, where adequate phone and Fax lines may be installed in a relatively short period of time. He or she will be responsible for keeping the offices of the DEM Director, the DAG Chief, the Governor, local officials and the media

informed on a daily basis about activities, problems, and developments associated with the application. In addition, he or she will be responsible for the following:

- Coordinate with the city or town in which the treatment area is located to be sure that the abutting property owners are notified of the specifics of the application, including the pesticide to be used, the anticipated time of the application, and precautions that they should take.
- Assemble and train personnel to staff telephones and provide information during the crisis, including evenings and weekends, as needed.
- In the general area of the application, post clearly visible signs announcing the anticipated pesticide application, along with appropriate precautions and a phone number for the public to get additional information.
- Be sure that the information provided by the HEALTH's Risk Assessment Office is disseminated among area residents.
- Contact local fire and police departments to alert them to the proposed activities, so that they will be prepared for a potential rash of calls reporting something being dropped from an aircraft.
- Keep the local fire department informed about the anticipated flight times to assist in any rescue efforts, if they become necessary.
- Notify the nearest State Police barracks about all flights and related activities.
- Coordinate with the media, including print and broadcast, to get the pertinent information about the application to the public. The following news media **MUST** be contacted by the Communications Officer, 12 hours prior to the initiation of the spray application, each and every time an application is made:
  - All local radio stations
  - Channel 10 Phone: 401-455-9105 Fax: 401-455-9140
  - Channel 12 Phone: 401-438-3310 Fax: 401-431-1012
  - Channel 6 Phone: 401-453-8044 Fax: 401-331-4431
- Update and disseminate maps and related information depicting EEE trapping and test result data.

## GROUND CREW

The Aerial Coordinator should have enough personnel on the ground at the airport to be able to handle any contingency. In responding to a threat, it is always better to have too many than too few responders.

To insure that appropriate, accurate information is disseminated to both the public and the media, **THE GROUND CREW SHALL REFER ALL REQUESTS FOR INFORMATION REGARDING THE OPERATION TO THE AERIAL COORDINATOR. AT NO TIME SHOULD MEMBERS OF THE GROUND CREW COMMENT ABOUT THE OPERATION TO ANYONE ELSE.**

The Aerial Coordinator will assign members of the Ground Crew to the following tasks:

- Designate a Safety Officer whose job is to set up the safety perimeter and ensure that only authorized personnel cross it. The area inside the perimeter should be strictly restricted to necessary Ground Crew personnel. **THERE ARE TO BE NO EXCEPTIONS WHEN AIRCRAFT ARE OPERATING.**
- Designate a Spotter whose job is to oversee the application from a circling aircraft. Direct the Spotter immediately to report to the Safety Officer any problems or potential problems, so that corrective measures may be taken, as needed.
- Designate one person as the Division Photographer to document the operation, from start to finish.
- Designate one person to be responsible for keeping track of all flight times and the amount of material applied during the operation.

## EQUIPMENT

- Outfit the Ground Crew with portable radios to facilitate communication anywhere on the airport grounds.
- Have available weather balloons and helium, in case the pilots need them to demarcate the area to be treated.
- Have adequate and appropriate hearing and eye protection available for the Ground Crew, as needed.
- Provide yellow caution tape and signs to demarcate an area that will be "off limits" to all but authorized personnel.
- Have aerial photos and topographical maps on hand for pilots and for others to refer to the treatment area.

## ADMINISTRATIVE OVERSIGHT

### GOVERNOR'S OFFICE

With an operation of this magnitude and importance, the Governor's Office will be involved in its planning and execution. Regular communication with the Governor's Office must be maintained throughout the operation. In particular, the power and authority of the Governor's Office may be required to expedite or suspend normal administrative procedures.

The importance of consultation with DAG should also be stressed to the Governor's Office. In particular, such consultation should precede any announcements of State EEE response strategies, to ensure that they are sound, workable, and in compliance

with State and Federal guidelines governing a pesticide application. Through communication between DAG and the Governor's Office, the planned response is apt to be more effective, safe and economical.

## DEM ADMINISTRATION

Since the Division of Agriculture and Resource Marketing will be implementing any plan outlined by the EEE Advisory Committee and the Governor's Office, DAG staff will, as always, work through the chain of command. The Associate Director of DAG will serve as the link from DAG staff to the DEM Director and the Governor as well as other state agencies. Once underway, a EEE response operation normally requires advice and consent of both the Office of the Directors of DEM and the Governor. Since the Associate Director oversees overall DAG operations, he or she is normally the appropriate conduit.

A daily conference call or briefing should be set up to discuss and formulate strategies prior to the operation and to report progress once the plan is implemented. The call should include:

- Governor's Office
- DEM Director's Office
- DEM Associate Director for Natural Resource Management
- DEM Communications Officer
- Chief of the DEM Division of Agriculture (DAG)
- Deputy Chief of the DEM DAG
- DEM DAG Pesticide Section Supervisor
- DEM DAG Mosquito Abatement Coordinator
- Department of Administration (DOA) Director's Office
- Aerial Coordinator

This call is to be mandatory and should be made at an assigned time each day. All participants should have some form of communication available to them, so that no matter where they are during the operation, they can participate in the call.

During the actual application, the Aerial Coordinator shall keep the DAG Associate Director, DAG Chief, and Communications Officer apprised of each segment of the operation. Through regularly scheduled consultations, issues that might emerge and require attention at a higher administrative level can be referred up the chain of command, without an adverse effect on the timeliness of the operation itself. This is especially helpful if circumstances change in a way that requires urgent decisions or arrangements that are beyond the authority of responders on-site.

## GROUND LARVICIDE AND ADULTICIDE APPLICATIONS

### BACKGROUND

Ground applications are divided into three categories: Backpack Spraying, Larviciding and Truck-Mounted Spraying. These activities are normally managed by the Rhode Island Mosquito Abatement Board, which stipulates that any city or town wishing to undertake any mosquito control activities must first be a Registered Mosquito Abatement District and must get Board approval for such applications. Each municipality normally

supplies the funds for the treatment that it wishes to undertake, whether it be from a grant or from the municipality's treasury. In an emergency situation, such as the EEE outbreak in 1996, these requirements have been suspended, and the State of Rhode Island stepped in to control the situation. The State supplied the training and testing necessary for applicators who were not previously certified in the correct category as well as the material to be applied.

## PERSONNEL

Under some circumstances, as in 1996, once aerial applications are complete, the Aerial Coordinator may become the Ground Spray Coordinator. However, in other circumstances, it may be appropriate to maintain two separate and distinct Coordinators. With the exception of the Ground Crew, who can move among areas related to ground application, personnel and their duties remain unchanged once aerial applications are complete. The Ground Coordinator works closely with the Communications Officer to keep the administration and public apprised of the situation and upcoming activities. The Ground Coordinator will forward daily reports about activities of the previous night or anticipated in the near future to the DAG Chief, and the Offices of the Director of DEM, HEALTH, the Governor.

## ADMINISTRATIVE CONTROLS

For each of the three categories of application, essentially the same administrative controls and approvals apply. Each municipality must submit an application to the DEM DAG outlining the intended activity. Generally this application shall include listing the applicator, the proper pesticide category certification and certification numbers, the location of the application, a brief description of the application operation, the name and EPA registration number of the material as well as the name of the manufacturer and the application rate. Upon DAG approval of the application, the material will be distributed, and the application may begin.

The State will normally supply all the material to be applied. The material is stored and distributed from a pesticide storage facility located at the University of Rhode Island. All disbursements must be approved by the Supervisor of the Pesticide Section of DAG.

Prior to, and immediately following each application, the municipality will file with DAG a report appropriately outlining the intended activity as well as the results of the application. This report will include the time and place of the application as well as the amount of material applied. Specifics of each application type will be listed in the appropriate section.

## TRUCK-MOUNTED SPRAY APPLICATION

The Office of Mosquito Abatement owns two Ultra Low Volume (ULV) Truck-Mounted Sprayers and will loan them out to municipalities, on an as-needed basis. These rigs will be on-loan for the duration of the single application for which it was borrowed. In this way, DAG is able to get the equipment to the maximum number of towns with a bona fide need for it.

The EEE Advisory Committee will determine if a positive find is worthy of a Truck-Mounted pesticide application and will delineate the appropriate treatment area. Only



that specific area is to be treated. Approval will be denied for any areas outside the boundaries that were specified by the EEE Committee. If, for some reason, the municipality wishes to spray outside that area, then the municipality will have to supply its own equipment, material, and personnel and will have to gain approval from the Mosquito Abatement Board.

Whenever a trap site yields a positive EEE isolate in human-biting mosquitoes, ground spraying may be authorized (depending on the particulars of the isolation) in the following locations and according to the following protocol:

- Populated areas, including residential and public, within an area specified by the EEE Advisory Committee, may be treated with ground spray equipment.
- Spraying should take place after dark and before dawn.
- The affected public must be notified of the spray schedule.
- Open water areas must not be sprayed, and all label directions must be strictly followed.
- The DAG shall be notified of the start date and time of the application by calling 222-2781, ext. 4509.
- Notification of the news media is required each and every time an application is made. The news media should be provided with the same information regarding the treatment program as is provided to the residents, including the name and telephone number of the Truck-Mounted Spray Program Contact Person for the city or town.

The following news media **MUST** be contacted by the city or town 12 hours prior to the initiation of the spray application.

- All local radio stations
  - Channel 10    Phone: 401-455-9105                      Fax: 401-455-9140
  - Channel 12    Phone: 401-438-3310                      Fax: 401-431-1012
  - Channel 6     Phone: 401-453-8044                      Fax: 401-331-4431
- Contact the local police department prior to the initiation of each application.
  - The daily report form must be submitted via Fax to DAG no later than 9:00 AM of the day following the application.

## LARVICIDE APPLICATION

The larviciding of mosquito production habitats with *Bacillus thuringiensis israelensis* (Bti) in the form of Mosquito Dunks or Briquets has proven to be an effective and biologically sound method of reducing the numbers of mosquito larvae in an area. Treatment of these specific wet habitats reduces the numbers of adult mosquitoes that will subsequently emerge, thereby reducing the number of adult mosquitoes that could become infected with EEE and the overall risk of EEE infection.

Larvicide applications will not eliminate risk, but may assist in reducing risk. Local communities that have an existing mosquito population that may present a threat during the EEE situation are authorized to conduct biologically sound larviciding in accordance with the following protocol:

- Larviciding can be done only in accordance with label instructions and following the submission and approval of a plan to DEM.
- Training in habitat identification and larvicide application techniques will be provided by the DEM.
- Only mosquito habitat with the potential for larval production can be treated with a Bacillus larvicide.
- The DEM will provide larvicide to communities within a treatment area to be specified by the EEE Advisory Committee.
- Affected property owners are to be contacted by the local municipality.
- The DAG shall be notified of the start date and time of the application by calling 222-2781, ext.4509.
- News media MUST be contacted prior to the initiation of the larviciding program. The news media should be provided with the same information regarding the treatment program as is provided to the residents, including the name and telephone number of the Larvicide Program Contact Person for the city or town.

The following news media MUST be contacted by the city or town at the inception of the program, though not each and every day that larvicide is applied:

- All local radio stations
  - Channel 10    Phone: 401-455-9105                      Fax: 401-455-9140
  - Channel 12    Phone: 401-438-3310                      Fax: 401-431-1012
  - Channel 6     Phone: 401-453-8044                      Fax: 401-331-4431
- Contact the local police department prior to the initiation of the larvicide program.
  - The daily report form, including information on the larviciding program, must be submitted via Fax to DAG no later than 9:00 AM of the day following the application.

## BACKPACK APPLICATION

When public health and safety is threatened, the protection of children is a paramount concern. To that end, schoolyards may be treated to lessen the population of mosquitoes in those areas and thereby reduce the risk of children being bitten by a mosquito carrying EEE. Pesticide handling and safety procedures are extremely important aspects of the operation. Local cities and town can treat schoolyard areas safely and with a minimum of unwarranted environmental impacts by following the following protocol:

- A Mosquito Ground Spraying Plan specific for the treatment of schoolyard areas must be submitted to and approved by the DEM.
- The DEM will only approve an appropriate pesticide for use at an Ultra Low Volume (ULV) rate and application via a backpack-type sprayer. A motorized backpack-type sprayer must be a kind that is equipped to apply ULV pesticide.
- Notices describing the planned spraying, along with the identification of the local contact person for the schoolyard spraying must be provided to parents of the schoolchildren before the first backpack-type pesticide application begins.
- The pesticide applicator must be properly licensed and certified.
- The pesticide application must be completed at least two hours before school opening in order to minimize aerosol contact by schoolchildren.
- All applications are to be in accordance with labeled directions, and loading areas are to be secure.
- The DAG shall be notified of the start date and time of the application by calling 222-2781 ext. 4509.
- Notification of the news media is required each and every time an application is made. The news media should be provided with the same information regarding the treatment program as is provided to the residents, including the name and telephone number of the Backpack Spray Program Contact Person for the city or town.

The following news media **MUST** be contacted by the city or town 12 hours prior to the initiation of the spray application:

- All local radio stations
  - Channel 10    Phone: 401-455-9105                      Fax: 401-455-9140
  - Channel 12    Phone: 401-438-3310                      Fax: 401-431-1012
  - Channel 6     Phone: 401-453-8044                      Fax: 401-331-4431
- Contact the local police department prior to the initiation of each application.
  - The daily report form must be submitted via Fax to DAG no later than 9:00 AM following the day of application.

## CONCLUSION

The most important responsibility of the Coordinator(s) and the operation as a whole is communication. During an EEE crisis, daily conference calls among the Governor's Office, HEALTH, and the DEM Offices of the Director, Associate Director for Natural Resources, Mosquito Abatement, DAG Division Chief, Supervisor of the Pesticide Section, Communications Officer and the Coordinator(s) are the key to ensuring that proper and complete information pertaining to the response is understood and shared by all. These calls can also serve as brainstorming sessions for future control activities. Successful response to an EEE emergency requires not only communication but also hard work, ideally supplemented with good fortune, such as an early, hard frost.