

MOSQUITO ABATEMENT – FEMA PUBLIC ASSISTANCE PROGRAM AND POLICY

June 30, 2016



Overview

- Mosquito Abatement: FEMA Policy and Procedures - Valerie Rhoads, FEMA Region IV Public Assistance Branch
- Mosquito Control and Surveillance Practices – Dr. Janet McAllister, CDC Division of Vector-Borne Diseases
- Environmental Planning and Historic Preservation Compliance and Documentation Requirements– Dr. Stephanie Madson, FEMA Region IV Office of Environmental Planning and Historic Preservation
- Q&A



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MOSQUITO ABATEMENT: FEMA Policy & Procedures

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FEMA Public Assistance Program

Public Assistance provides grants to states, local governments and certain nonprofit groups for debris removal and emergency protective measures and to restore and rebuild public systems and facilities.

After a Public Assistance major or emergency disaster declaration, Public Assistance can provide funds for mosquito abatement as an emergency protective measure, if the disaster related increase in mosquito population is determined to be a health and safety threat.



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Public Assistance Eligibility

Statutory Authority

Robert T. Stafford Disaster Relief and Emergency Assistance Act

Regulation

44 CFR Part 206

General Eligibility

Legal Responsibility of an eligible applicant

Declared Area

Caused by the declared event

Category (B) Specific Eligibility

Emergency Protective Measures taken to protect from a health and safety threat.



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Public Assistance Eligibility

Public Assistance Program and Policy Guide (PAPPG)

FP 104-009-02/January 2016

Appendix G: Mosquito Abatement

“After a Declaration, FEMA may provide reimbursement for mosquito abatement measures at the written request of the State, Territorial, tribal or local public health officials after FEMA consults with the Centers for Disease Control and Prevention (CDC)”

PAPPG-Appendix G: Mosquito Abatement

Eligibility through demonstrated evidence of:

- Higher levels of disease transmitting mosquitoes in the disaster area following the event.
- A significant number of disease carrying mosquitos in the area due to the increase in event-related standing water.
- The potential for disease transmission and human exposure to disease carrying mosquitoes based on the detection of arboviral diseases in sentinel organisms in the impacted area prior to the storm event, discovered during surveillance as part of mosquito abatement activities or reported human cases in which transmission occurred prior to the storm event.



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PAPPG-Appendix G: Mosquito Abatement

Eligibility through demonstrated evidence of: (Continued)

- A determination that a significant increase in the mosquito population and /or the change of biting mosquito species poses a threat to emergency workers who are required to work out-of-doors, thereby significantly hampering response and recovery efforts
- Verification from medical facilities within the affected area that an increase in the general public's exposure to mosquitoes has directly resulted in secondary infections, especially among those with weakened immune systems such as the elderly, the very young or the sick.



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PAPPG-Appendix G: Mosquito Abatement

Documentation:

- Mosquito population density estimates pre- and post- disaster including information about species composition
- Arbovirus transmission activity indices.
 - Infection rates in mosquitoes
 - Seroconversions in sentinel chickens
 - Equine cases
 - Human Cases
- The amount and type of flooding
- Extent and location of damage to housing
- Extent, location and anticipated duration of power interruptions
- The anticipated extent and duration of cleanup and recovery operations
- Type of mosquito management required. And duration of application to reduce the threat and the areas where the interventions are needed.

Eligibility Review

Project Worksheet Development - includes complete and accurate scope of work, costs, and supporting documentation as outlined in Appendix G of the PAPPG

FEMA's Project Worksheet review includes:

- Review of the Centers for Disease Control concurrence with state or local determination of public health threat (review of species and population data)
- Review of costs and work to ensure they meet criteria for reimbursement (includes contracting and procurement criteria, reasonable costs, etc)
- Review for compliance with all Federal, State, Tribal, and Local laws, regulations, and executive orders (including **Endangered Species Act**)

Mosquito Control and Surveillance Practices

Janet McAllister - CDC DVBD
Fort Collins, CO



Isaac 2012



Irene 2011

Emergency Support Function 8

● Public Health and Medical Services

- Sanitation and hygiene concerns due to crowded shelters, lack of utilities, or unsafe water.
- Spread of disease carried by insects, rodents, or other vectors.
- Measures to control infection, including prompt treatment of infections and immunizations.
- Supplies of medical equipment and products, including drugs, medical devices, blood, and blood products.
- Environmental health measures to ensure the safety of residents and response workers.
- Behavioral health needs of community members and response workers.
- Veterinary medical needs for service and companion animals.
- Mass fatality management, including the decontamination and identification of remains.
- And access to needed health care, including displaced individuals who need help managing chronic diseases.

The Department of Health and Human Services (HHS)

- Office of the Secretary
- Administration for Children and Families
- Administration on Aging
- Agency for Healthcare Research and Quality
- Agency for Toxic Substances and Disease Registry
- Centers for Disease Control and Prevention
- Centers for Medicare and Medicaid Services
- Food and Drug Administration
- Health Resources and Services Administration
- Indian Health Service
- National Institutes of Health
- Substance Abuse and Mental Health Services Administration

Sliding scale of programs

● Spray Program

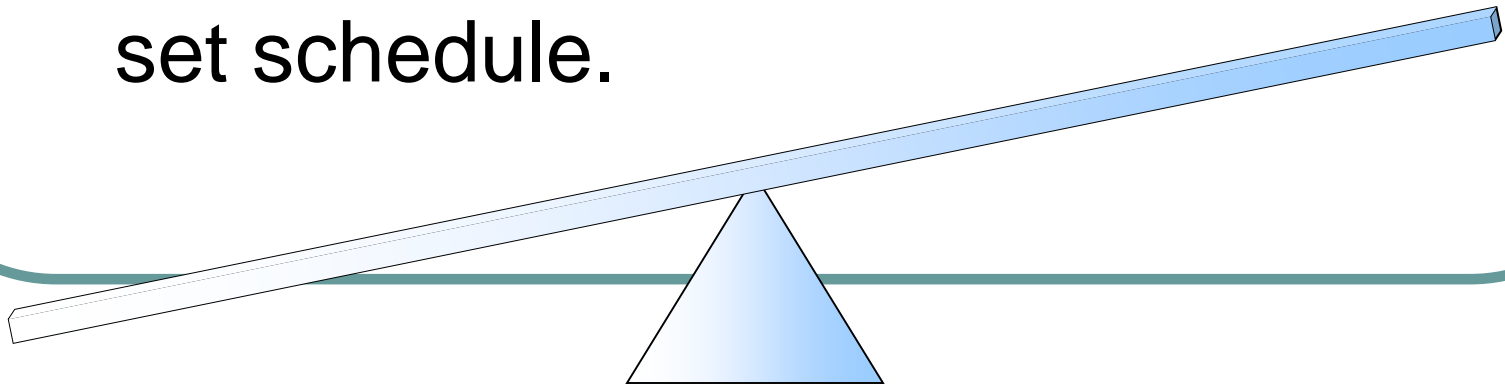
Program

- Relies mainly on use of chemicals applied on a set schedule.

● Control Program

Program

- Uses Integrated Mosquito Management



Who does vector control?

- State Boards/Commissions/Departments
 - Tribal Nations
 - County Mosquito Boards (independent taxing districts)
 - Local Departments of Health/Environment
 - Individual Cities/Townships
 - Neighborhood Associations
 - Pest Management Professionals
- The bigger the area covered the more effective the program.



Missions vary-
Nuisance biting vs. Disease vectors

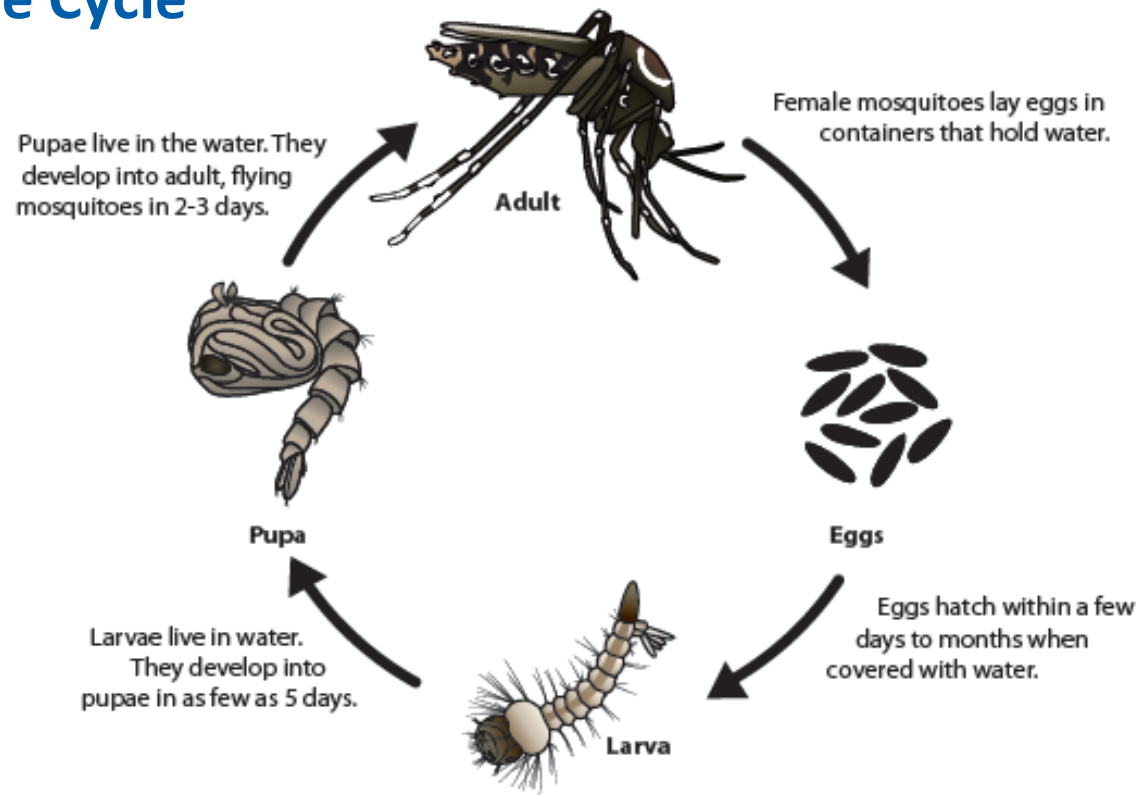
Components of IMM

- Surveillance –
 - Disease surveillance
- Data Management
- Biological control
- Physical control
- Chemical Control
 - Resistance management
- Education and Outreach
- Legal Control



General Life Cycle of a Mosquito - > 250 species

Aedes aegypti Life Cycle



KNOW YOUR MOSQUITO

Aedes aegypti*/*Ae. albopictus

- Mostly bite during the day, but can also bite at night
- *Ae. aegypti* prefers to feed on people
- *Ae. albopictus* will feed on people and animals
- Prefers to lay eggs in man made containers that may dry out completely
- BG Sentinel traps and ovicups for surveillance



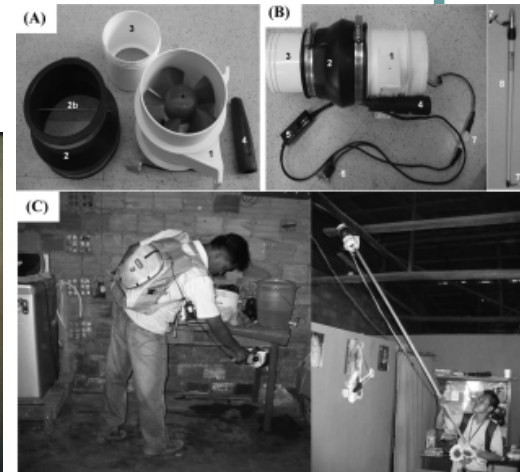
Culex pipiens*/*Cx. quinquefasciatus

- Night biter
- Prefers birds
- Lays eggs in standing water with a lot of organic material (lakes, ditches, gutters, neglected pools)
- CDC gravid and light traps for surveillance



Vector Surveillance Tools- Aedes

- Ovitrap (presence/absence; eggs/trap)
- Electromechanical aspirators
- Sticky traps for gravid mosquitoes
- Electromechanical traps for adult mosquitoes



A Whole New Animal



Bare bones program capabilities needed

- Surveillance
- Means to act on the surveillance results
 - adulticiding
 - larvaciding
- Communication
 - Disaster officials and political structure
 - General Public
 - What you are doing and why
 - How they can help protect themselves

Surveillance



2 most common traps

- **CDC gravid trap**

- Samples egg laying segment of the population meaning they have taken at least one blood meal.
- Very attractive to *Culex quinquefasciatus*



- **CO₂ baited light traps**

- Samples host seeking segment of the population.
- Very attractive to a wide variety of species including flood water species.



Types of Surveillance Data

- Trap data
 - Variety of traps can be used
 - Species may or may not be identified
- Landing rates
- Dipping
- Arbonet reporting

Control methods must be adjusted

- New breeding sites created
- Impassible road systems
- Canyon effect created by debris cleanup
- Human population dynamics



Common problems



Control

- Unusual issues
 - Disruption of navigation/communication
 - Drivers/pilots unfamiliar with area
 - Training issues
 - Canyon effect
 - Safety – unlit streets and towers
 - Impassible streets



EHP Compliance & Documentation Requirements

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MOSQUITO ABATEMENT

May be eligible for Public Assistance Program reimbursement as emergency protective measures when:

There is a serious health hazard.

The threat has been verified by public health officials.

Only short-term abatement costs that are in-excess of usual costs may be reimbursed.

Eligible costs are calculated by comparing the disaster-related costs to the most recent three non-disaster years.



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DOCUMENTATION REQUIREMENTS

Trap data, landing rates, or dip data

Verification from local medical facilities

EPA-approved chemical, registered for use in state

Chemical, concentration, application method

Spray or larvicide area maps*

Endangered, threatened or critical habitat consultation*

Dates of application

*Contact State Public Assistance Officer or FEMA Environmental Historic Preservation Advisor at Joint Field Office for pre-approved spray block maps; areas outside of the approved spray block maps will require additional consultation



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ELIGIBILITY REVIEW

Request for Public Assistance

Develop project worksheet (includes complete and accurate scope of work, costs, supporting documentation)

Policy requires Centers for Disease Control concurrence with state or local determination of public health threat (review of species and population data)

Compliance required with all Federal, State, Tribal, and Local laws, regulations, and executive orders (including **Endangered Species Act**)

Costs and work meet criteria for reimbursement (includes contracting and procurement criteria, reasonable costs, etc)



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ENDANGERED SPECIES ACT

Purpose of the ESA (passed in 1973) is to protect and recover imperiled species and the ecosystems they use

Administered by US Fish and Wildlife Service (terrestrial and aquatic species and ecosystems) and the National Marine Fisheries Services (marine species and ecosystems only)

Section 9 makes it unlawful for anyone to “take” listed animals

Section 7 requires federal agencies to determine effect of actions on species and consult with Services

For more information:

https://www.fws.gov/endangered/esa-library/pdf/ESA_basics.pdf



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TIME FRAMES

Floodwater mosquitoes usually do not emerge until approximately one week after an event

BEFORE SPRAYING

Collect data on increase of mosquito populations (trap data, landing counts)

Identify spray exclusions areas due to presence of endangered or threatened species or critical habitat

AFTER SPRAYING

Submit required documentation for FEMA to determine eligibility

FEMA consults with CDC



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BEST PRACTICES

Do not delay: if anticipate requesting FEMA assistance, then follow documentation requirements (see state-specific Fact Sheets)

Collect species and population data (count, trap, or dip) **before** spraying (preferably multiple days in a row, same time of day, same method)

If more than 14 days between data collection and spray date, collect new species and population data

Request technical assistance (State, FEMA, or USFWS)

Early planning and coordination

Interagency Memorandum of Understanding (MOU)



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QUESTION & ANSWER