Larval Mosquito Control: Fresh-water Environments

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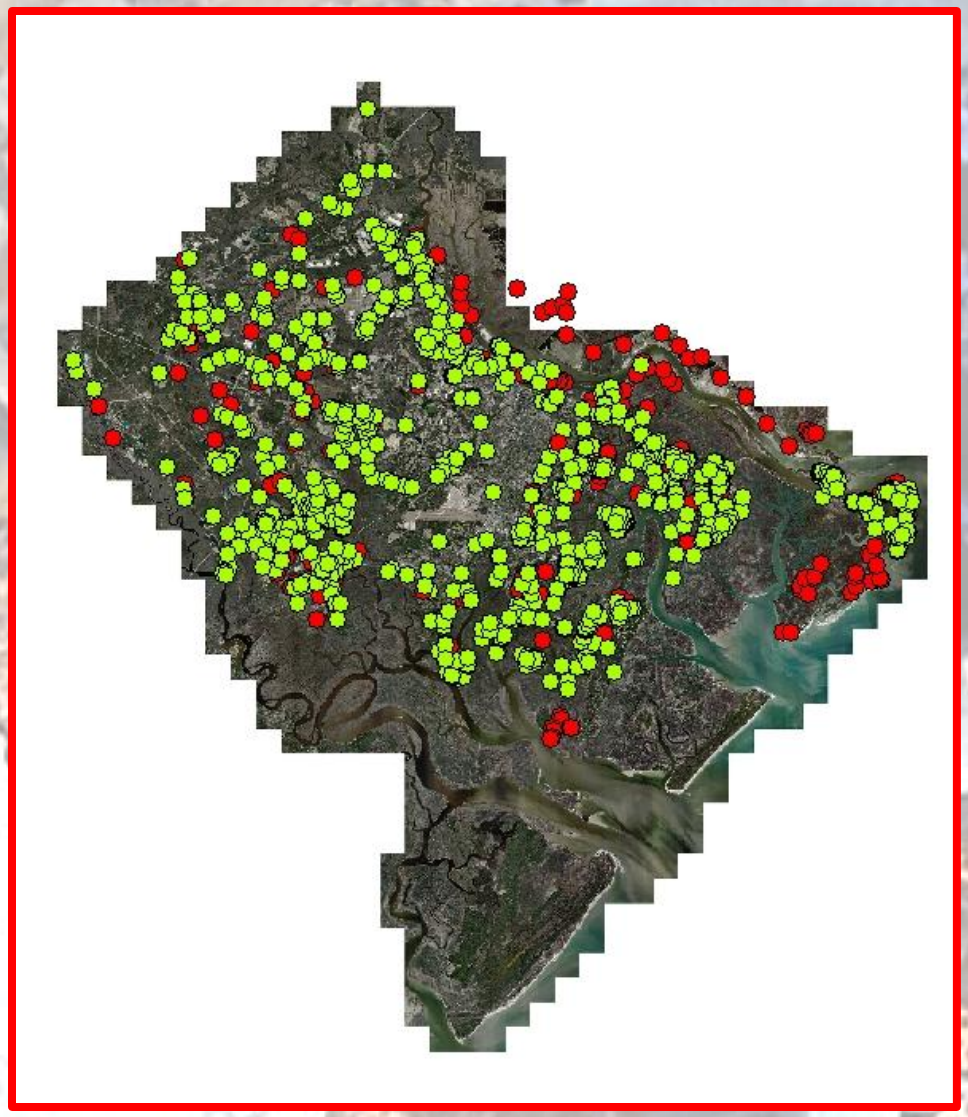
CHATHAM
Mosquito Control
COUNTY

Computer Software:



We currently use various computer software various abatement needs, such as mapping sites for treatment. In Chatham County a total of 1191 larval sites are regularly inspected for larval activity. In addition, crews treat over 13,000 storm drains on a monthly basis during the mosquito season.

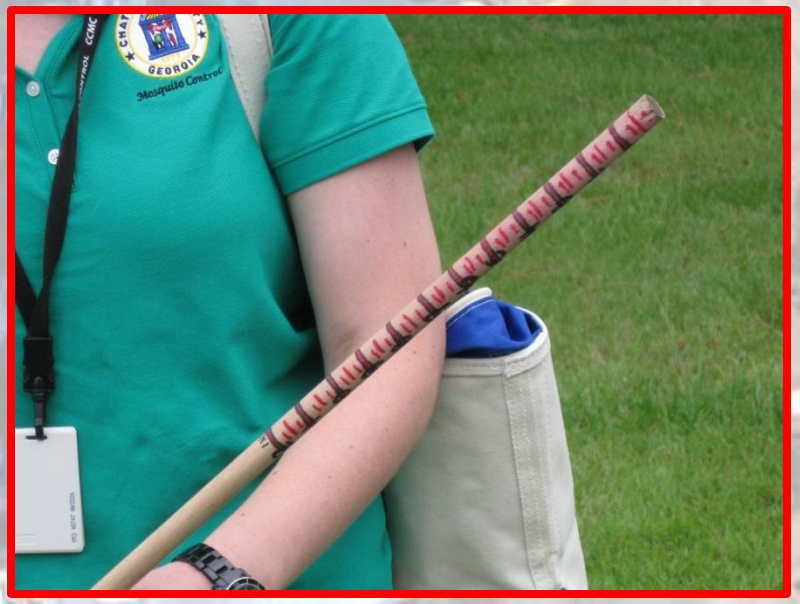
Laboratory Equipment:

In order to properly identify larval mosquitoes, both dissecting scopes and compound microscopes are necessary. However, even with these scopes, small larvae are impossible to accurately identify.

Surveillance Equipment:

There is no substitute for a well-equipped technician. Standard equipment needed by field personal include specimen containers, preservative, data tags, and pen/pencil.

Surveillance Equipment:



Probably the most important tool to field investigators is the standard mosquito dipper. They not only catch mosquito larvae for identification purposes, but are effective density estimators, and can also be used to help determine water depth.

Surveillance Equipment:

Rain gauges although not necessary to conduct surveillance can be very beneficial. Simple rain gauges are easily and cheaply obtained, while more elaborate remote rain gauges can save tremendous amounts of time in less accessible areas.

Surveillance Equipment:

Cooking basters are often used to sample from fissures, tree holes, tires, and other hard to reach areas. Other “homemade” items may be situational pieces of equipment used in the field for specific objectives.

Treatment Equipment:

Hand sprayers and high pressure sprayers are used by our staff in treating small to moderate sized sites. The truck-mounted systems do require annual calibration on an individual basis. We also have a system used in our helicopters.

Treatment Products:

Biodegradable oils and monomolecular films are particularly effective in controlling mosquito larvae, and remain effective even on late 4th instar larvae and pupae.

Treatment Products:

Insect growth regulators (methoprene) are used in various formulations by CCMC. It is our primary product of choice for treating large sites, such as old rice plantations and DMCA's. For such areas, we currently use a liquid formulation mixed with sand as a carrier.

Treatment Products:

Biological mosquito larvicides like Bti or Bsph can be applied by hand or air depending on the circumstances. We currently alternate such products with growth hormones in our catch basin treatment program.

Treatment Products:

Another biological form of larval control we use at times is mosquito fish (*Gambusia*). Our on-site retention pond actually doubles as our own mosquito fish reservoir.

Fresh-water environments which support mosquito larvae can be divided into two broad categories, namely natural and man-made.

NATURAL:

- woodland pools & depressions
- ponds & lakes
- tree-holes and cavities
- animal burrows
- river & creek floodplain
- springs & seeps
- cattail areas

MAN-MADE:

- borrow pits
- ditches & canals
- pastures
- clear-cuts
- rice fields
- storm drains & catch basins
- retention & detention ponds
- containers

Woodland pools & depressions

Aedes vexans
Culex nigripalpus
Ochlerotatus atlanticus/tormentor
Oc. infirmatus
Psorophora ferox

Gum ponds & cypress ponds

Aedes vexans
Culex nigripalpus
Cx salinarius
Ochlerotatus atlanticus/tormentor
Oc. infirmatus
Psorophora ciliata
Ps. ferox

Tree-holes & cavities

Culiseta melanura
Ochlerotatus triseriatus
Toxorhynchites rutilus

River & Creek floodplain

Aedes vexans
Anopheles cruciens
Anopheles quadrimaculatus
Coquillettidia perturbans
Culex nigripalpus
Cx. Salinarius
Culiseta melanura
Ochlerotatus atlanticus/tormentor
Oc. infirmatus
Psorophora ferox

Springs & Seeps

Anopheles cruciens
Culex coronator
Cx. salinarius

Cattail areas

Coquillettidia perturbans

Borrow Pits

Anopheles cruciens
An. quadramaculatus
Culex restuans
Cx. salinarius

Ditches & Canals

Aedes vexans
Culex coronator
Cx nigripalpus
Cx quinquefasciatus
Cx salinarius
Ochlerotatus taeniorhynchus

Pastures

Aedes vexans
Culex quinquefasciatus
Ochlerotatus atlanticus/tormentor
Psorophora ciliata
Ps. columbiae
Ps. ferox

Clear-cuts

Newer clear-cuts tend to create ideal conditions for *Culex* mosquito larvae, later as the area re-vegetates, *Aedes vexans* and *Psorophora* species may replace these.

Storm Drains & Catch Basins

Aedes albopictus
Culex quinquefasciatus
Cx. restuans

Buckets, trash cans, birdbaths, & other containers

Aedes albopictus
Culex quinquefasciatus

Tires

Aedes albopictus
Culex quinquefasciatus
Toxorhynchites rutilus

Rice Fields

Culex salinarius
Ochlerotatus taeniorhynchus
Oc. sollicitans
Psorophora columbiae


Thank You