# Mosquito Control & Honey Bees



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#### **Honey Bee Facts**

Honey Bees are not native to our area, they were introduced in the 1600's from Europe.

Honey Bees are social insects that employ a cast system featuring workers, drones (males), and a queen.

Like mosquitoes, the honey bee's life cycle pass from egg - larva - pupa - adult.

A strong colony contains 40,000 - 80,000 bees.

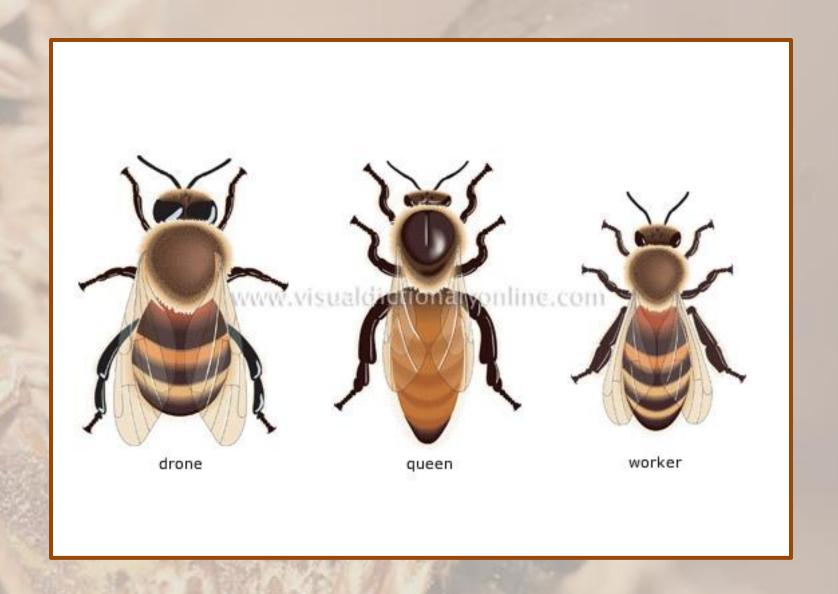
Honey Bees are important pollinators of many fruits and vegetables.

Honey Bee Keeping is a business to some and a hobby to others.

#### Problems faced by honey bees:

- >Arthropods (other insects and mites)
- ➤ bacteria, viruses, fungi
- **≻**Pesticides
- ➤ Colony Collapse Disorder

## A typical hive will contain thousands of worker bees, hundreds of drones, but usually only a single queen



## During the warmer times of the year bee hives contain all stages of immature and mature bees. However, egg production slows during the fall







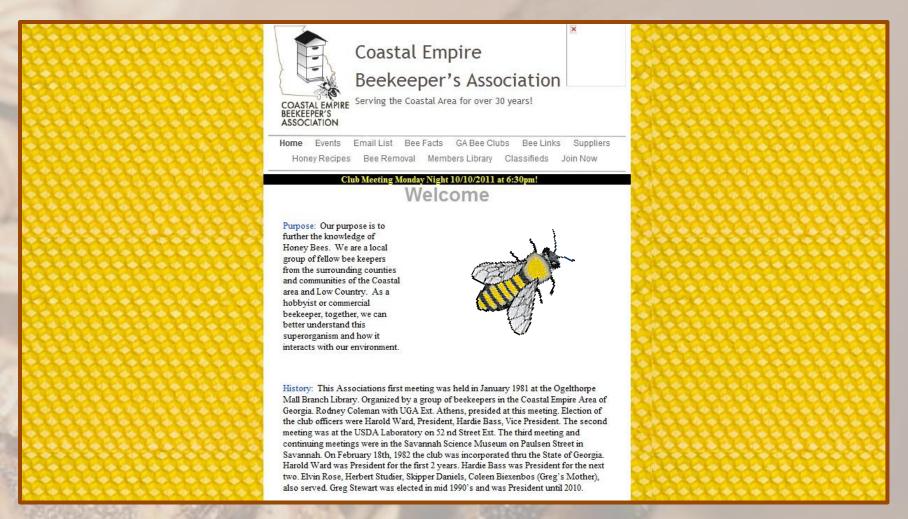
## In Chatham County there are both commercial bee keepers, as well as backyard enthusiasts.







#### **Coastal Beekeeper's Association**

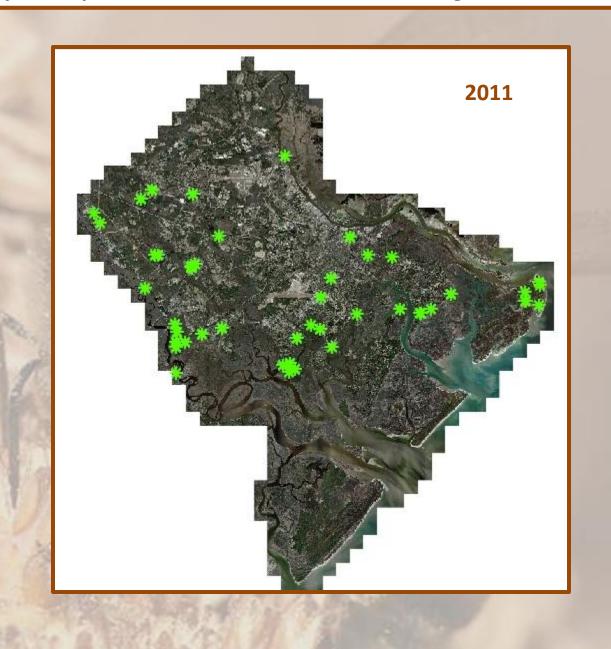


http://www.cebeekeeping.com/

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Honey bees are for the most part diurnal, and bees return to the hive in the early evening. Although our ULV truck sprays are timed after dusk or before dawn, aircraft missions generally are conducted prior to sunset, and at times could conflict with foraging bees.

#### **Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic invertebrates and shrimp. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate water when disposing of equipment wash waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow drift when bees are actively visiting the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquitoborne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

During the spring and early summer months honey bees may swarm, and swarms of bees are particularly vulnerable to sprays during such events. However, swarms are generally short-lived and are probably not affected by normal mosquito operations.



Some concern has been raised by bee enthusiasts about pesticide residuals collected by foraging bees and transported to the hive. In one study 312 of 340 wax samples contained pyrethroids



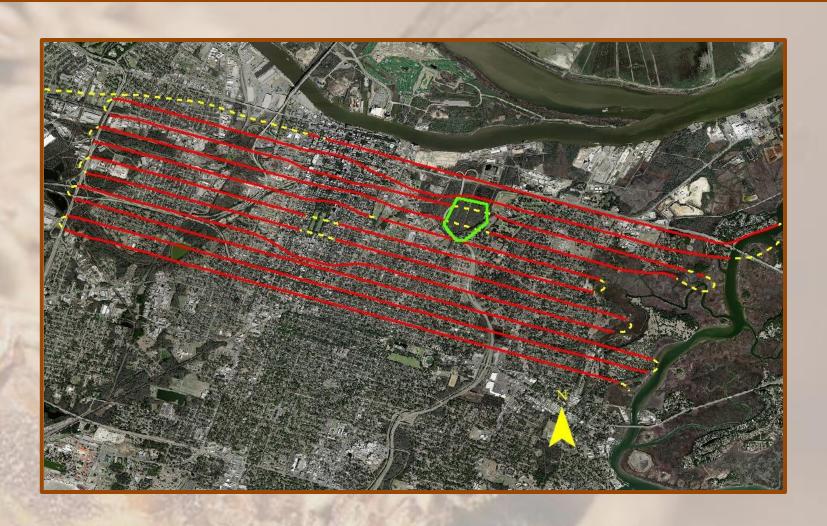
Unfortunately, during the warmer times of the year many of the worker bees spend much of their time outside the bee hive, leaving them susceptible to mosquito sprays



We have an extensive courtesy call list, whereby beekeepers are informed of pending spray missions within Chatham County.



We are glad to visit local beekeepers and suggest ways of preventing bee kills related to our spray missions. When possible we may form "No-Spray Zones" which exclude aircraft or ULV trucks from going past certain points, or canceling missions because of wind direction.



For most backyard beekeepers, simply placing hives in protected areas, either by using shrubs or making a structure with a "curtain" can prevent most problems.







Sometimes covering hives is the only option available to protect hives from possible mortality, although covering hives is not always an easy accomplishment.







Equipment used by mosquito control agencies are calibrated to deliver small particles of pesticide that are lethal to mosquitoes, but not larger sized insects. However, even at this small droplet size, if enough fall upon a honeybee, death will result.





### Some states have legislature that prohibits pesticide application within areas known to contain bees.

#### **Protecting Honey Bees**

Ohio Use and Applicator Law Regulation Ag-6567.01 requires that "No pesticide which is required to carry a special warning on its label, indicating that it is especially toxic to honey bees, shall be dispensed over an area of one-half acre or more in which the crop plant is in flower unless the owner or caretaker of any registered apiary located within one-half mile of the treatment site shall be notified no less than 24 hours in advance of such intended treatment; provided, however, that these locations are registered and identified as required by Section 909.02 of the Revised Code of Ohio, and that such apiary locations have been posted with the name and telephone number of the owner or caretaker."

"Since ULV and thermal fog applications are not residual type applications to crops, notification of beekeepers prior to the application is not required. Many mosquito control agencies, however, will notify beekeepers in the area and publish their adulticiding schedule regardless."

"Applications of pesticides which are hazardous to honey bees shall be made at times when pollinating insects are not actively working in the target area; however, application of calyx sprays on fruits and other similar application may be made."

The Ohio law also states that records of all pesticide applications are required to be maintained for a period of three years from the date of the pesticide application. In addition, applicators and operators must be licensed through the Ohio Department of Agriculture to apply pesticides.

