

Standard Operating Procedures for Bees and Wasps



Mosquito Management Services Health and Human Services

**Eric Schreiber Ph. D., Lyman Roberts Ph. D., John
Eaton, Brian Burke and Chris Oliver**

June 2009

Authorization



- **Chapter 586 Florida Statutes, the “Honey Bee Law”, specifically defines rules regarding honey bees with numerous references to feral honey bees.**
- **Chapter 388 Florida Statutes, the “Mosquito Law”, allows for the removal of arthropod pests of nuisance and public health concern.**
- **County IPM Procedural Guidelines include methods and materials for all pest management activities by county staff or contractors.**
- **Sarasota County Risk Management has delegated to MMS the task of determining relative risk to people from stinging insects.**

Standard Operating Procedure

- *Standard operating procedures for stinging insects* were developed by Mosquito Management Services (MMS). MMS is the designated business center for coordinating Sarasota County's Integrated Pest Management (IPM) program.
- MMS will respond to service requests for bee or wasp “pests” *associated with county-owned or maintained property.*
 - Upon request, MMS may offer advice regarding stinging insect problems on private property based on public risk and time constraints.
- Trained MMS staff will assess risks pertaining to the aggressiveness of individual hives.

Service requests for stinging insects problems has increased significantly in Sarasota County. MMS's top priority remains mosquito abatement and will respond to stinging insect inspections as time permits.



Private Property Owners

- **Upon request and time permitting, MMS will identify, evaluate and advise on management solutions to reduce risk to people from stinging insects on private property.**
- **If highly defensive honey bees or yellow jackets are the problem, the owner is responsible for contacting a private pest control operator (PCO). Sarasota County does not endorse any one PCO.**
- **If requested, MMS can provide a list of PCO's willing to manage bee or wasp problems.**

Over the counter products may not be effective against large colonies.

It is strongly recommended that professionals be called.

Protocol for Stinging Insect Investigations on County-owned Property





Initiating a Service Request

Sarasota County Call Center (861-5000) service requests must include all of the information listed below:

- 1) The *exact* location - an address plus the actual site, e.g. “5531 Pinkney Avenue, large nest high in tree at northwest corner of main building” (or provide GPS coordinates)**
- 2) A point of contact and telephone number**
- 3) Time and date of problem**
- 4) Other pertinent information e.g., anyone stung, property access (locked gate, pets), known hazards**



Risk Assessment

- **To resolve stinging insect problems, the species must first be identified.**
- **Following identification of the target pest an assessment will be made of the relative risk.**
- **On-site assessment of the problem by trained, certified and properly equipped personnel is essential.**

Proper Personal Protective Equipment

Do not go near any nest of stinging insects without proper PPE.



Some Commonly Encountered Bees & Wasps

Honey Bee



Eastern Yellow Jacket



Sand Wasp



Paper wasp



Solitary Wasp



Halictid or Sweat Bee

Some Commonly Encountered Bee or Wasp Structures

Carpenter bee nest



Mud dauber



Paper wasp nest



Mud dauber nest



Organ pipe wasp nest



Potter wasp nest

Behavior of the Target Pest

Mud daubers, sand wasps and carpenter bees may fly around people when:

- (1) Wasps or bees may be provisioning their nests;**
- (2) People enter the territorial boundaries guarded by male wasps or bees are seeking mates.**



Carpenter
Bee

These wasps and bees are not a threat to humans, and no control action is necessary.

Bee Behavior



- **Of potential concern is human contact with aggressive “feral” (wild) honey bees.**
- **Depending upon the situation and time of year, bees may be non-aggressive or aggressive.**
- **Reliable identification of bees must be performed in a laboratory.**
- **Defensive behavior of feral bees will be determined using one of two methods:**
 - **The smoke method**
 - **The leather patch method**
- **Trained/licensed MMS personnel will evaluate the defensive behavior of the bees.**

Smoke Test



Patch Test



Control of Paper Wasps

- Paper wasps will sting and are a nuisance easily controlled by removal of the paper combs. The use of chemicals is unnecessary if proper personal protective equipment and timing are used.
- Destruction of wasp nests by MMS will be considered based on proximity to humans. Nests at bus stop stations, picnic tables & school grounds are examples of sites where people may be stung.
- In some cases the use of an aerosol spray is warranted for paper wasps but not honey bees. Some of the aerosol sprays contain:
 1. Pressurized boric acid (35.5%);
 2. Cyclohexene (10%);
 3. Pyrethrin (12% Allethrin). **Ck that these are on the IPM approved list.**The above products are currently registered in the state of Florida for yellow jackets and wasps **and are on the Sarasota County IPM approved pesticide listing**

Yellow Jacket Control: Leave to MMS or Contractor

- Yellow Jackets can form large colonies within structures or in the soil. They defend their nests aggressively and can sting repeatedly.
- They are easily aroused to attack even when foraging in picnic areas and trash receptacles.
- *MMS does not recommend use of aerosol sprays by untrained personnel to control colonies of yellow jackets.* Risk of multiple stings to people could be high. Control efforts will not work unless most of the wasps and queen(s) are exposed to the spray.



Control of Yellow Jackets by MMS Personnel

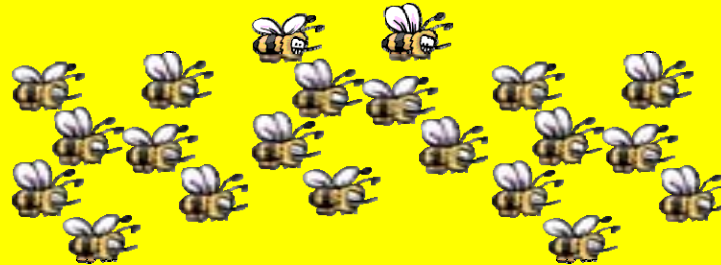
- **The size and location of the colony is important in choosing control methods. A repellent can work for small colonies with a single queen and less than 100 workers; the colony will evacuate the immediate area and reestablish elsewhere.**
- **Large colonies require greater time and effort for elimination.**
 - **Example: underground nests along county easements. Excavation of the nest is often necessary to eliminate the colony. The least toxic materials, e.g. soapy water or vegetable oil, will be used.**
- **Colonies that require immediate attention (in parks, nature trails, adjacent to school grounds, etc.) are treated with the least toxic practical means: soapy water or in some instances by a synthetic pyrethroid. One or more follow-up visits are usually needed.**



Excavation of a Large Yellow Jacket Colony



Swarms of Feral Bees



- **If left alone for 24-72 hrs, bees will typically leave the area and are not a risk for people/pets.**
- **If immediate management is required, MMS will collect and freeze or treat the swarm with soapy water.**



Aggressive Feral Bee Hives

- **There are two options:**
 - 1) **Elimination by chemical means**
 - 2) **Sealing bees inside their hive.**
- **The chemical control method of choice is to apply soapy water or insecticidal dust directly into the open hive. (e.g. in the utility box pictured) In most instances one application is sufficient.**
- **Sealing the bees in their hive is the method of choice for hives with entrances/exits in tree holes and structures.**
- **Re-application of the treatment is usually required to eliminate foragers returning to the hive after treatment.**

For optimal results hives should be treated at night or very early morning. Follow up within several hours may be necessary to treat for stragglers.

Strategies for Bees in Electrical Equipment

- Hives in electrical equipment are usually small but can pose a significant risk to residents and county staff.



- Examples include junction boxes or telecommunication boxes, power equipment, pad-mounted air conditioning and electrical transformers. Management is by:

- 1) Vacuuming up a swarm or collecting the queen and workers on the hive proper, then freezing it or dousing thoroughly with soapy water away from the electrical outlet;

- 2) Use of an insecticidal treatment such as an impregnated tag.

When such hives are discovered, uncertified staff or residents should call 861-5000 for assistance.

Aggressive Feral Hive in a County Structure:

Sometimes the methods, equipment and necessary certification are outside the scope of county staff and will be handled by private pest control operators.



Management Methods For Swarms of Honey Bees Near People

- **Waiting may be an option. Swarms of honey bees are not defensive unless provoked and will usually move on to establish a hive within 3 days or less.**
- **Collect the swarm and freeze it.**
- **Collect the swarm, place it in a trash can and spray the bees thoroughly with soapy water.**



Note: MMS does not recommend the use of aerosol sprays. Aerosols do not provide rapid knockdown of bees and are not on the IPM approved pesticide list for swarm management.

Personnel and the public may be at risk of stings during application.

Application of Smoke and Soapy Water



Summary- Management for Feral Bee Hives:



- **Elimination by soapy water application**
- **For hives in structures or tree holes, seal the entrances and spray with soapy water or apply insecticidal dust**
- **Follow-up visits to the site are usually required.**

Remember to:

- **Call 861-5000 to initiate a service request for a bee or wasp problem**
- **Provide detailed information on the location of the problem**
- **Leave management to certified, trained and properly equipped personnel to limit risk**

