Best Management Practices for Live Bee Removals in Florida: A Beekeeper's Guide

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I. **Introduction**

A. **BACKGROUND**

Feral colonies of honey bees can be found across the state of Florida. When these colonies nest in close proximity to humans or domestic animals, they can pose a stinging threat and may be considered a nuisance and possibly a threat to animal or public health. When a property owner or authorized agent finds a nuisance colony of honey bees, he/she must decide how to deal with it, through removal (bees are kept alive) or eradication (bees are killed). This decision to remove or eradicate lies entirely with the owner/authorized agent of the property on which the bees are found. It is important to note, however, that some municipalities and home owner associations have specific formal codes related to the removal of honey bees in natural setting and in structures. Moreover, honey bees may need to be removed or eradicated when they are found nesting in close proximity to places where humans or domestic animals frequent.

In 2013, Rule 5E-14.151 of the Florida Administrative Code was created to allow registered Florida beekeepers to perform live removals of nuisance honey bee colonies and swarms "for the production of honey and related products or the pollination of plants or crops" without the need for a pest control operator license. To operate legally in this capacity, a beekeeper must be registered with the Florida Department of Agriculture and Consumer Services pursuant to Chapter 586 of the Florida Statutes. Furthermore, they must maintain honey bee colonies. Beekeepers are only allowed to eradicate nuisance honey bee colonies if they are also certified pest control operators (PCOs). Eradicating honey bee colonies is considered pest control; it is illegal to perform pest control without a license (Chapter 482.165, Florida Statutes). As such, property owners can deal with nuisance honey bees via live removal (via a registered beekeeper) or eradication (via a licensed PCO). Clients or untrained personnel should not attempt to remove a honey bee colony themselves as the job may pose a risk to the individual as well as the community and surrounding areas if not handled properly.

B. **PURPOSE**

The purpose of this document is to serve as a reference for beekeepers who choose to perform live bee removal services in Florida. Best Management Practices for live bee removals by Florida beekeepers are detailed herein.

C. **TYPES OF REMOVALS**

There are three main ways in which a beekeeper may remove honey bee colonies. All three ways concern the removal of the entire colony of bees and are referred to as "live bee removal" or "bee removal" in this document.

- Swarm trapping
- Swarm removal/capture

- Colony removal

Swarm trapping, is a preventative measure used to keep honey bee colonies from becoming a nuisance. It is much easier and cost effective to capture a swarm than it is to remove an established colony from an enclosed area such as inside a wall. The other two methods, removal or capture of swarms and removal of established colonies, become relevant after the honey bee colony is already considered a nuisance, usually when it has nested on a client's property. For information on swarming and nesting behaviors of European honey bees, see Swarm Control for Managed Beehives and European Honey Bee *Apis mellifera* Linnaeus and subspecies (Insecta: Hymenoptera: Apidae).

D. **NOTES OF CAUTION**

While this document outlines the Best Management Practices for live bee removals, using/reading/following it is not a surrogate for receiving proper training. All beekeepers who choose to offer bee removal services, either privately or as a business, should 1) familiarize themselves with the contents of this document and 2) receive bee removal training. Training can be formal (take an in-depth course, participate in a workshop, etc.) or non-formal (find a mentor, work under a bee removal specialist, etc.), but should always include hands-on practice under expert guidance. Working with honey bees can be dangerous, especially for inexperienced individuals. Furthermore, working with feral colonies of unknown temperament and genetics in less-than-ideal conditions adds additional levels of risk. As you enter into this field, you are encouraged to exercise caution, gain experience from an expert, and always be prepared. Finally, if you have a known allergy to honey bee stings, you should never attempt to perform live bee removals.

i. **African(ized) Honey Bees**

Africanized honey bees (AHBs), a hybridization of an African (*A. mellifera scutellata*) and various European-derived honey bee subspecies, are established in southern Florida. Generally, African honey bees are more defensive than European-derived honey bees, and this heightened defensiveness is expressed often, but not always, in the Africanized hybrid. All honey bee colonies (African, European, and Africanized) are defensive when they have resources (honey, brood, pollen, etc.) and a nest to protect and defend, but are considerably less defensive when they are in a swarm state. In fact, honey bee swarms are often considered comparatively docile, though even they can have heightened defensive responses. All honey bees, whether in a swarm or established colony, European- or African-derived, should be approached with caution. More information about African bees can be found in the UF/IFAS Electronic Data Information Source (EDIS) subtopic, Africanized Honey Bee, particularly in the following documents: African Honey Bee, Africanized Honey Bee, Killer Bee, Apis mellifera scutellata Lepeletier (Insecta: Hymenopter: Apidae) and Living with the African Honey Bee.

II. **Best Management Practices**

A. **BEFORE REMOVALS**

i. **Receive training**

Bee removal training

Before performing a live bee removal, you should receive training under the direct guidance of someone with significant bee removal experience. There is no substitute for hands-on training and practice.

Safety Training

You should become certified by the Occupational Safety and Health Administration (OSHA) before you or your employees perform live bee removals, particularly if you will be using power tools, power lifts, ladders, working on roofs, etc. Visit the OSHA Training website, for information on OSHA certification and training options.

ii. **Set up Your Business for Success**

The removal of honey bee colonies comes with inherent risks. Consequently, certain precautions need to be considered to mitigate these risks effectively. Beekeepers should take the following steps before performing removal services.

Register as a beekeeper

According to Rule 5E-14.151, F.A.C., anyone conducting live bee removals must be registered as a beekeeper with the Florida Department of Agriculture and Consumer Services. This applies to any individual removing nuisance honey bee colonies, including employees removing honey bee colonies within a larger bee removal operation (i.e. anyone performing bee removals in that operation must be registered as a beekeeper). For more information on registering as a beekeeper, visit the FDACS Beekeeper Registration website.

Register your business

You should maintain a Florida business license regardless of the size of your bee removal operation (you may operate alone or manage a large team). For information on registering your business, visit the My Florida Business and the Florida Department of State, Division of Corporations websites. You may also decide to consult with a business expert, lawyer, and/or accountant to determine the licenses and registrations you will need.

Insurance coverage

If you are operating a bee removal business, large or small, you should carry General Liability insurance. Liability insurance can pay for the costs of injuries or property damage

that occurs while on the job. General Liability insurance should be considered a must for every bee removal operation, especially given bee removal is a high-risk profession dealing with live colonies of stinging insects located in and around people's homes and property. You may also consider other insurance outside of General Liability (e.g. commercial auto insurance, property insurance, etc.), depending on the size and structure of your operation.

Additionally, if you hire employees to work within your live bee removal business, you must provide workers' compensation insurance for those employees, or provide a Certificate of Election to be Exempt from Florida's Workers' Compensation Law. For details on workers' compensation and exemptions in Florida, visit the Florida Division of Workers' Compensation website.

Proper understanding of your insurance is crucial to being able to operate your business properly. Consultation with an insurance expert should always be a consideration.

iii. **Establish a Safe Work Environment**

You should always work to create a safe environment in which to operate. If you perform bee removals alone, you should leave your plan with someone who knows where you are going and when you plan to return. You can reduce risk and increase your likelihood of success through proper planning and open communication with your clients.

Protective gear

The first step in establishing a safe work environment is making sure that you have the right tools for the job. Regardless of the type of bee removal you will be doing, you should always have personal protective equipment (PPE) on hand including:

- Bee veil
- Bee suit and/or jacket
- Beekeeping (or other protective) gloves

You should at least wear a bee veil to protect your face from stings during bee removals. Other protective gear that you may wish to have on hand/wear during a bee removal include:

- Full coverage clothes (pants, long-sleeve shirt, close-toed shoes)
- Sun protection (water, unscented sunscreen, etc.)
- Smoker with fuel and lighter
- First aid supplies

For further lists of tools and supplies that you may need for various live bee removal procedures, see section B (Removal BMPS) in this document. A complete supply list can be found in Appendix A.

Gather information

Before beginning a bee removal, talk to the property owner/authorized agent about what, if any, previous work has been done to remove or eradicate the nuisance colony. This may provide you with valuable information about the temperament and condition of the colony, which can better prepare you for the job. Particularly, if eradication of the colony was previously attempted, the bees and comb may still contain pesticides that you as a beekeeper should not handle without the proper protection and training. Consider using a contract in which the client agrees that chemical controls have not been used on the bees/colony, to the best of their knowledge.

Before starting the removal, survey the removal site to determine the equipment that you will need and so that you can estimate the time it will take to complete the removal properly. It is best to survey during daylight hours and proper weather conditions so that you can see any obstructions that may pose a complication to the removal. Consider height, access points, multiple entrances, bushes, conduit, etc. It may help to have the client tell/show you where they have noticed bees. At this point, you should know whether you are dealing with a swarm or an established colony. If it is an established colony, look for flight patterns to and from the hive site. It is also good to note if you can see the bees bringing in pollen, as established colonies may be collecting pollen, while swarms will not be.

At this point, it is also a good idea to check with the local municipality, property association, or other regulatory groups in the area to confirm that no additional permits or approvals are required to remove bees in/on certain structures (consider historical buildings, protected tree species, etc.).

Control the surrounding area

When performing a bee removal, you will be purposefully disrupting a live honey bee colony. It is your responsibility to ensure that property owners, other passersby, etc. do not walk into the worksite during and immediately after the removal. The size of the area that you need to control will depend on where the removal is happening. In highly trafficked areas, for example, you may consider roping off a large area around the honey bee nest and posting signs and/or employees around the perimeter to warn passersby. In more contained environments, you may simply need to alert those present to clear the area. When dealing with bees in public places, it is always safest to be overly cautious to ensure that bystanders are not stung.

Set expectations with the client

Before beginning work, it is important to communicate with the client about expectations. In a written or verbal agreement, you should discuss your recommended course of action and the scope of the work to be performed. Consider having the client review a protocol checklist before beginning work.

The possibility of property damage associated with opening a cavity for easier access to the bee should be clear to the client before work beginss. Furthermore, unless you are a licensed and insured contractor, you as a beekeeper should never attempt to repair structures yourself after a bee removal. It is crucial that this be made clear to the client *before* commencing any work. It is equally important that your client understands that if the remaining cavity is not filled or properly repaired, another honey bee colony may soon take up residence in it, resulting in the need for subsequent bee removal(s).

The client must have clear expectations about the number of bees that may remain after the work is completed. It is not realistic to expect that all bees will be removed in a live bee removal, as some forager/scout bees may return to their nest after the removal is complete. There are ways of reducing these "straggler" bees as discussed in section B (Bee Removal) in this document; however, the possibility of bees being left behind should be made clear to the client before work begins. Encourage the client to allow a few days after the removal for lingering bees to return before scheduling maintenance or repairs.

Document before and after

When doing live bee removals, it is important to keep detailed records of the work that you have performed and that which may have been done before you arrived. You may want to document items such as damage to the house/property that was present before you arrived, the location of the nest, the condition of the bees, etc. The easiest way to document this type of information is by gathering photographic evidence either through still images or videos. Capture pictures and videos of the situation before you start your work, while you work, and after your work is completed. Consider including a photo release in the contract that you and your client agree on before work begins.

B) **REMOVAL BMPs**

Live bee removal can involve removing swarms, removing established colonies, and/or trapping swarms, as detailed below.

i. **Removal of Honey Bee Swarms**

Equipment Needed for Swarm Removals

In addition to the items listed above in section II.A.iii, the following list details the equipment that beekeepers should have on hand when collecting a clustered honey bee swarm. Not all items below may be necessary for every swarm removal; however, by having them on hand, you can be prepared for a variety of circumstances. A complete supply list can be found in Appendix A.

- Blanket/tarp
- Queen cage/catcher
- Empty hive box

- Frames
- Bee brush
- Bee vacuum (*see Appendix A for requirements surrounding bee vacuums)
- #8 hardware cloth (⅛ inch mesh), crafting foam, insulation, or other materials appropriate for closing the hive entrance
- Spray bottle with water

Swarm Removal Protocol

Once you have all the supplies that you will need, follow these steps for swarm removal.

1. **Consider laying out a tarp or blanket underneath the swarm if needed.**
   This provides a place onto which the bees can fall. It can also aid in the search for the queen.

2. **Gently smoke the swarm.**
   Smoking the bees can help to keep the swarm calm. The smoke masks the alarm pheromones that honey bees produce when they are agitated and defensive.

3. **Shake, brush, or vacuum* the bees into the hive box.**
   Move the bees into the new hive box. This can be done by shaking or brushing the bees into the box, or by using a bee vacuum. See Appendix A for requirements associated with using bee vacuums*. Misting the swarm with water using a spray bottle prior to moving it can help to keep the cluster contained while it is being relocated.

4. **Secure the bees in the box.**
   Close the entrance of the box. Appropriate items for entrance closure include, but are not limited to, #8 hardware cloth (⅛ inch mesh), crafting foam, and insulation. Do not completely seal the box; make sure that the bees cannot escape, but that they still have airflow.

ii. **Removal of Established Colonies**

Removal of established colonies should be done early in the morning or late evening as long as you have visibility. It is best to remove the colony before the foragers have left the hive for the day or after they have returned, but you still need to be able to see what you are working with and to be aware of your surroundings. This will not always be feasible, depending on the job at hand, but is considered best practice.

Equipment Needed for Colony Removals

In addition to the items listed above in section II.A.iii, the following list details the equipment that beekeepers should have on hand when performing a removal of an established honey bee colony. The items below may not be necessary for every colony

removal; however, by having them on hand, you can be prepared for a variety of circumstances. A complete supply list can be found in Appendix A.

- 5 gallon buckets or other containers
- Bee brush/feather duster
- Bee repellent
- Bee Vacuum(*see Appendix A for requirements associated with using bee vacuums)
- Borescope/snake camera or thermal imaging camera
- Broom and dustpan
- Camera (for documentation)
- Comb cutting tool (e.g. box cutter, knife, hive tool)
- Duct tape
- Extension cords
- Flexible plastic sheeting
- Hand tools (hammer, screwdrivers, pry bar, paint scraper, etc.)
- Hive box(es) with bottom board(s), lid(s), and frames
- Ladder
- Large rubber bands/string
- Non-spray insulation
- Portable generator
- Power tools (hole saw, circular saw, keyhole saw, angle grinder, reciprocating saw, drill etc.) with proper attachments (bits, blades, etc.)
- Queen catcher/queen cage
- Rags
- Red light flashlight
- Safety goggles/face mask
- Scissors for cutting other materials to size
- Serrated knife
- Spray bottle with water
- Staple gun, staples
- Straps (e.g. ratchet, tie down, plumbing hanger with screws)
- Wet wipes
- Window screening or hardware cloth

Colony Removal Protocol for Cut Outs

Once you have the needed supplies, follow these steps for colony removal via a "cut out" (i.e. the colony is "cut out" of the nest site).

1. **Locate the colony.**

Have the client indicate to you where he/she has noticed the bees. Look for flight patterns to and from the hive site to find the hive entrance (there may be more than one). If the colony is located inside a structure, you can further locate the nest by using a borescope, a thermal imaging camera, or a red-light flashlight. If the bee colony is inside a tree, you may need to seek assistance from a trained arborist. You may also need a ladder or heavy machinery to access the bees. If the colony is in a structure found along a property line, make sure to verify who owns the structure (your client or the client's neighbor). Remember to document the colony and/or nest entrance photographically before starting the removal.

2. **Smoke the entrance(s) to the colony.**
   Smoking the bees can help to keep the colony calm. The smoke masks the alarm pheromones that honey bees produce when they are agitated and defensive.

3. **Create access to the colony.**
   The location and size of the colony that you are removing will dictate how you are able to access the colony. You may need to cut open a wall or roof, enter a crawl space, open a container, or move equipment, among other actions. Make sure that you have all the tools that you will need for a given removal before beginning. Tools that you may need include: power tools with the proper attachments, extension cords, a generator, hand tools, goggles, a face mask, etc. Do not make excessive openings and be mindful of structural supports as well as electrical and water devices and conduits. Remember to document your work with photographs of the process.

4. **Locate and cage the queen.**
   Look for the queen as you move through the colony. If you find her, gently place her in a queen catcher or cage and put her in the empty hive box. This will keep the queen from flying away and will encourage the worker bees to stay in their new nest.

5. **Smoke the comb.**
   You will need to smoke the bees and combs diligently throughout the following steps.

6. **Remove the comb from the nest and hive the bees.**
   Cut the combs from the cavity and secure them to an empty frame with rubber bands or string in the combs' original orientation (top side up) and place the frames in an empty hive box. Brush or vacuum* any remaining adult bees into the hive box. Misting the colony with water from a spray bottle can help to keep the bees contained. Having multiple buckets or other containers on hand is useful in this step to sort combs and keep the workspace organized.

7. **Remove all nest contents from the cavity.**
   After removing the bees and combs, make sure to remove any remaining parts of the nest. Scrape the entire area to clean it of all comb and propolis. If you leave behind comb in a client's structure, secondary pests such as beetles, ants, cockroaches, and flies may move into the structure. The remaining contents may rot, ferment, and even leak into your client's home or property. The remaining cavity will also be attractive to other honey bee swarms.

9. **Patch any damage**
   You should always create a temporary patch over the hive cavity or entrance to prevent any remaining bees or a new swarm from reentering the nest area. An appropriate patch may be to fill the void with insulation (not spray insulation as the bees will chew through this) and provide a temporary seal with flexible plastic sheeting (such as visqueen), staples, and/or duct tape. Pursuant to Chapter 489, Florida Statutes, unless you are a licensed and insured contractor, you should not attempt to repair the structure yourself. This is something that you should have already discussed with the client before performing the live bee removal.

10. **Collect loose foragers**
    Leave the hive box with the relocated bees and comb at the removal site until nightfall. This will allow for any foragers bees that are away from the nest during the day to return to their colony before it is transported offsite. After nightfall, you can return to the removal site, close the hive box entrance with #8 hardware cloth, crafting foam, or insulation, and secure the hive for transport. Do not completely seal the box; make sure that the bees cannot escape, but that they still have airflow.

    It is important that your client knows before work begins that loose foragers may continue to return to the site for many days but will eventually dissipate. This will also be something to keep in mind when you and/or the client coordinate with contractors to make repairs.

Colony Removal via a Trapout (i.e. the colony is "trapped" out of its nest)

Trapouts are a good option for bee removal in situations where a cut out is not suitable, such as when colonies are found in a live tree or cinder block wall. The process for a trapout can take weeks, so it is important to mitigate the possibility of the colony becoming problematic during or after the trapout. You will need to schedule regular check-ups on the colony throughout the process, during which you look for secondary nest entrances that the bees may be using in the tree or structure. Whenever the trapout method is used, it is important to seal the hive entrance once the removal is complete. This will discourage honey bee swarms from taking over the newly vacant cavity.

iii. **Swarm Trapping**

Swarm Traps are a precautionary measure through which one captures swarms before they occupy a nesting site from which they may be difficult to remove. Swarm trapping is done by setting out traps in strategic locations and attracting nest-searching colonies with a lure.

If a client has had a recurring problem with nuisance honey bee colonies on their property, you may recommend that they have swarm traps installed. Swarm trapping may be a service that you as a beekeeper choose to offer to clients.

Equipment Needed for Swarm Trapping

In addition to the items listed above in section II.A.iii, the following list details the equipment beekeepers should have on hand when trapping honey bee swarms. All the items below may not be always be necessary; however, by having them on hand you can be prepared for any possible circumstance.

- Trap box: There are many trap options that beekeepers can use to collect honey bee swarms. The simplest of these is a small (3-8 frame) hive box or nucleus (nuc) box with a lid and bottom board. Any swarm traps that you use should be marked with your apiary firm number (see your Florida Beekeeping Certificate of Registration) as well as your contact information (name, phone number, email).
- Lure/bait: Lures attract swarms to the trap box. There are multiple lure options from which to choose. Many are commercially available, while others can be produced at home.
- L brackets
- Screws
- Power tool(s): The type of power tool(s) that you need will depend on the substrate into which you are drilling. Examples of tools that you may use include a drill, screw gun, hammer drill, masonry bit, etc.
- #8 hardware cloth, crafting foam, or insulation
- hive box
- bee vacuum (*see Appendix A for requirements associated with using bee vacuums)

Installation

You can install your swarm trap once you have the supplies that you will need. Generally, swarm traps should be placed along the perimeter of a client's property or in a place from which a honey bee colony has already been removed. The correct placement of traps allows for the bees to find the box easily while not inhibiting public access to any facility or structure. Attach the swarm trap in place using screws and L brackets. Place the L brackets

in such a way that you can secure the box on top of them. The substrate onto which you are installing a swarm trap will determine what type of tools you will need to use.

Servicing Traps

Swarm traps should be checked at least once a month during swarm season. Outside of swarm season, they should be checked at least every 90 days. The colony should be monitored for 7-14 days to allow time for the entire colony to move into the trap once bee activity is noticed in or around the trap. Occupied traps should be collected after sunset when the foraging bees have returned to the hive. When collected, temporarily seal the trap entrance with #8 hardware cloth, crafting foam, or insulation. Carefully remove the trap from the L brackets and, if desired, replace the box with an empty swarm trap.

A) **AFTER REMOVALS**

Your work is not finished even after you have removed honey bees from a structure. You must clean up the site, try to collect any loose bees, and transport the new hive to an apiary where it can be managed, all before a job can be considered complete.

i. **Clean up**

Clean up the work area as best you can once the colony has been removed from its nuisance location and any cavities have been temporarily patched. It is useful to have rags, wet wipes, a broom, and a dust pan on hand for clean up after bee removals.

ii. **Communication**

Your clients should always have a way of contacting you after you have performed a bee removal on their property. Make sure to leave your phone number and/or email address at the removal location.

iii. **Transportation**

Equipment Needed for Hive Transportation

- Straps (e.g. ratchet, tie down, plumbing hanger with screws)
- Window screening or hardware cloth
- Enclosed truck bed/trailer
- Hive net
- Red light flashlight
- Hive body(ies) marked with beekeeper firm number

After a live bee removal, the new hive must be properly secured for transportation. This can be done by strapping the hive parts (lid, hive body, bottom) together with a ratchet strap or other tie down strap, or with plumbing hanger straps with screws. You can seal the

entrance to the colony by covering it with hardware cloth or window screening. The relocated colony should be transported in an enclosed truck bed or trailer or covered with a hive net. By moving colonies at night, you will leave fewer forager bees behind, which are often away from the hive during the day. A red-light flashlight can help facilitate moving colonies at night.

Removed colonies should be relocated into boxes that have been marked with the FDACS firm number of the beekeeper to whom the relocated colony now belongs. The only time that a managed honey bee hive in Florida does not need to be marked with a beekeeper's firm number, is when the colony was produced (or removed) to be sold by a registered stock dealer. For more information on beekeeper registration, firm numbers, and Florida stock dealers, see the FDACS, Apiary Inspection website.

iv. **Establishing New Hives**

Once the new hive has been transported away from the removal site, it may be prudent to keep the relocated colony in a 'quarantine apiary' for some time to prevent the spread of honey bee pests and diseases into your beekeeping operation. You can always move the new colony into your established bee yard once you have controlled any pest and disease threats in the hive.

Open the entrance once the new hive is moved to its new apiary. One to three days later, the queen can be released from her cage. Colonies that have been removed in Florida should be requeened with a mated queen of known, European-derived genetic stock.

Nuisance colonies that are removed by beekeepers must at be put back into production, which includes the production of honey or other hive products and/or being used for crop pollination (Rule 5E-14.151, FAC). Keep detailed records of the state and location of any removed and relocated colonies to ensure that you comply with this rule.

Conclusion

Beekeepers and live bee removal experts play an important role in the maintenance of public safety and the continued growth of the beekeeping industry in Florida. The live removal of honey bee colonies itself is an essential and thriving industry. To maintain the integrity and effectiveness of this trade, standards of practice need to be widespread among beekeepers. The purpose of this document is to offer Florida beekeepers a set of Best Management Practices from which to work when performing live bee removals around the state. Beekeepers providing such services are encouraged to follow these practices before, during, and after the live removal of honey bee colonies to ensure safety for themselves and other beekeepers, for clients and other members of the public, and for the bees that they are removing and relocating.

Selected Resources

Division of Workers' Compensation: https://www.myfloridacfo.com/Division/wc/

Florida Department of Agriculture and Consumer Services Apiary Division

Apiary Inspection: https://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Bureaus-and-Services/Bureau-of-Plant-and-Apiary-Inspection/Apiary-Inspection

Beekeeper Registration: https://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Business-Services/Registrations-and-Certifications/Beekeeper-Registration

Bee Removal and Eradication in Florida: https://www.freshfromflorida.com/Consumer-Resources/Consumer-Rights-and-Responsibilities/Pest-Control/Bee-Removal-or-Eradication-in-Florida

My Florida Business: http://www.myflorida.com/taxonomy/business/

Occupational Safety and Health Administration: https://www.osha.gov/dte/index.html

University of Florida Extension Documents

Africanized Honey Bees, EDIS Subtopic: http://edis.ifas.ufl.edu/topic_africanized_honey_bee

Bee-Proofing for Florida Citizens: http://edis.ifas.ufl.edu/in741

Choosing the Right Pest Control Operator for Honey Bee Removal: A Consumer Guide: http://edis.ifas.ufl.edu/in771

Living with the African Honey Bee: http://edis.ifas.ufl.edu/in1205

Removal of Swarms and Colonies for Pest Control Operators: http://edis.ifas.ufl.edu/in778

Swarm Trapping for Pest Control Operators: http://edis.ifas.ufl.edu/in785

APPENDIX A. Tool and equipment list for live bee removals

Protective Gear:
Bee veil
Bee suit and/or jacket
Beekeeping (or other protective) gloves
Full coverage clothes (pants, long shirt, close-toed shoes)
Sun protection (water, unscented sunscreen, etc.)
Smoker with fuel and lighter
First aid supplies

Additional Swarm Removal Supplies:
Blanket/tarp
Queen cage/catcher
Empty hive box
Frames
Bee brush
Bee vacuum*
#8 hardware cloth (⅛ inch mesh), crafting foam, insulation, or other materials appropriate for closing the hive entrance

Additional Established Colony Removal Supplies:
5 gallon buckets or other containers
Bee brush/feather duster
Bee repellent

Bee vacuum (*see Appendix A for requirements associated with using bee vacuums)
Borescope/snake camera or thermal imaging camera
Broom and dustpan
Camera (for documentation)
Comb cutting tool (e.g. box cutter, knife, hive tool)
Duct tape
Extension cord
Flexible plastic sheeting
Hand tools (hammer, screwdrivers, pry bar, paint scraper, etc.)
Hive box(es) with bottom board(s), lid(s), and frames
Ladder
Large rubber bands/string
Non-spray insulation
Portable generator
Power tools (hole saw, circular saw, keyhole saw, angle grinder, reciprocating saw, drill etc.) with proper attachments (bits, blades, etc.)
Queen catcher/queen cage
Rags
Red light flashlight
Safety goggles/face mask
Scissors for cutting other materials to size
Serrated knife
Spray bottle with water
Staple gun, staples
Wet wipes
Window screening or hardware cloth

Additional Swarm Trapping Supplies:
Trap box
Lure/bait
L brackets
Screws
Power tool(s) Examples of tools that you may use include a drill, screw gun, hammer drill, masonary bit, etc.
#8 hardware cloth, crafting foam, or insulation
Hive box
Bee vacuum*

Colony Transportation Supplies:
Straps (e.g. ratchet, tie down, plumbing hanger with screws)
Enclosed truck bed/trailer
Hive net
Red light flashlight
Hive body(ies) marked with beekeeper firm number

*An unmodified “shop vacuum” is classified as a pest control device by the Florida Department of Agriculture and Consumer Services, Division of Agricultural Environmental Services. Use of this device, even for cleanup after a live bee removal, could be easily misinterpreted as performing pest control without a license. Thus, beekeepers who choose to use bee vacuums must either purchase a vacuum specified for that purpose or make the following modifications to a non-bee specific vacuum. The vacuum must have:

- a removable holding container,
- adjustable suction/regulator, and

- a short hose with a smooth (not ridged) interior.