

# **Africanized Honey Bees**

## **Bee aware ... look, listen, run**



**Based on  
“Understanding  
and Responding to  
AHB” Presentation**

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*With modifications by Raymond Zerba.  
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**UF** | UNIVERSITY of  
**FLORIDA**  
*The Foundation for The Gator Nation*

# History of Honey Bees

- Bees evolved from wasps 80 million years ago
- Spanish brought over first honey bee colonies in the 16<sup>th</sup> century
- Dubbed “white man’s flies” by Native American tribes



# Florida Beekeeping

- Florida beekeeping developed between 1872 and 1888
- Apiaries began to be established all over state after 1888
- 1920 Florida held the world record for honey production



# AHB - History

- **First bred to create a honey bee better suited for tropical conditions**
- **1957 - 26 African queen bees were accidentally released from a breeding program in Sao Paulo, Brazil**



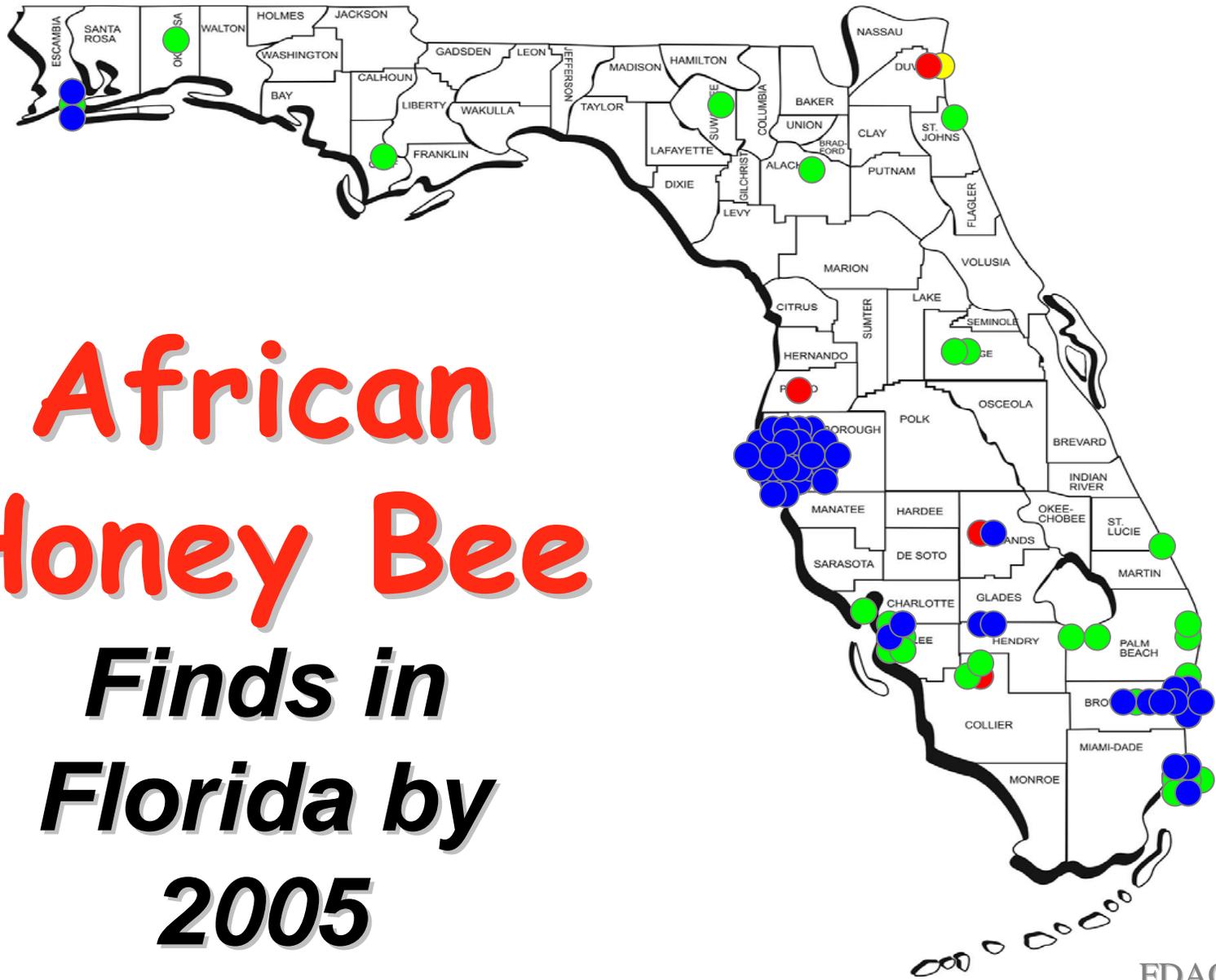
**How did they get here?**

**Florida has 14 deep water ports**

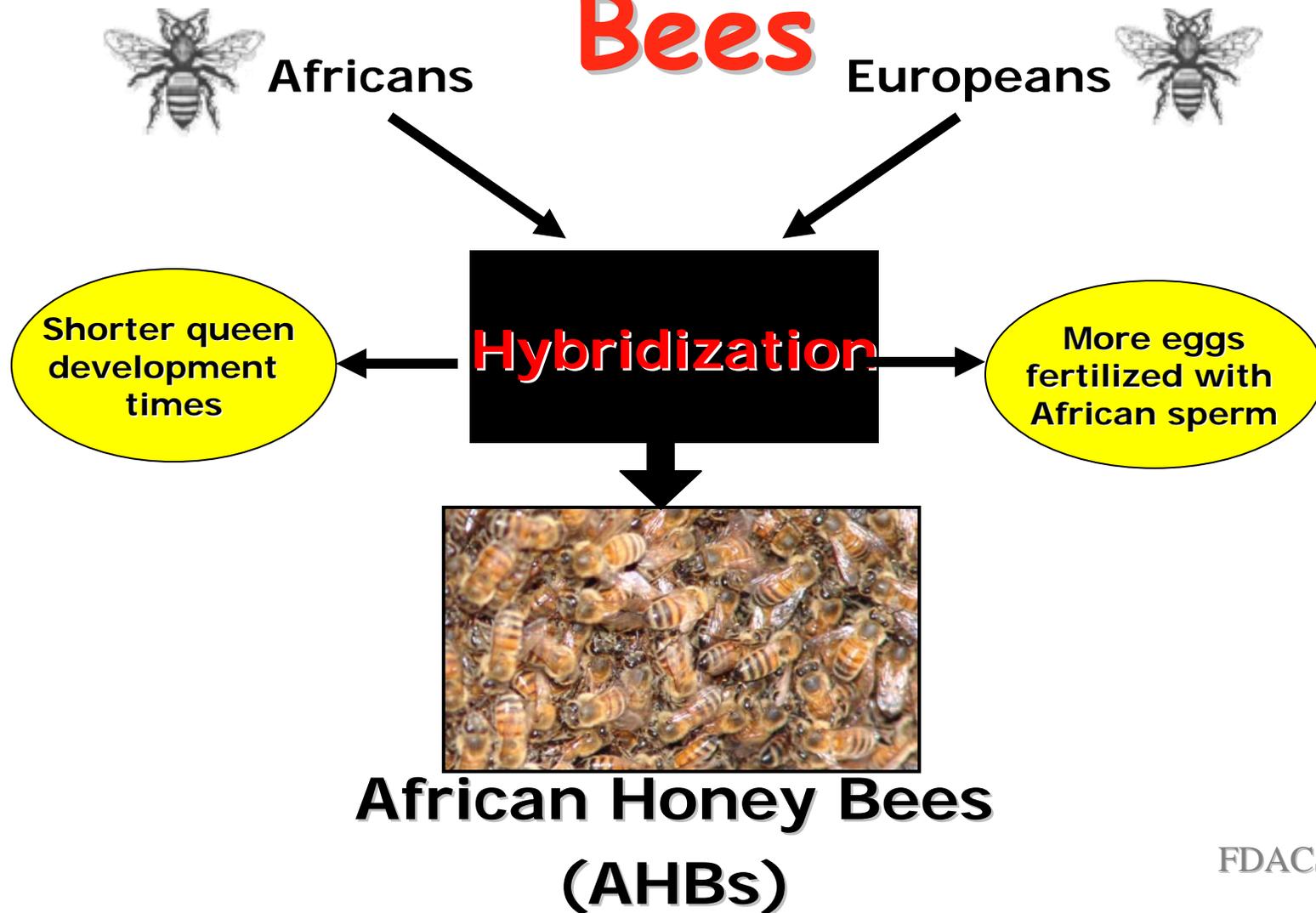
**African  
Honey Bees  
in Florida -  
First Find - 2001**



# African Honey Bee Finds in Florida by 2005



# Hybridization Eventually Results in African Honey Bees



# Differences: AHB vs. EHB



Myths

VS

Facts



FDACS, DPI

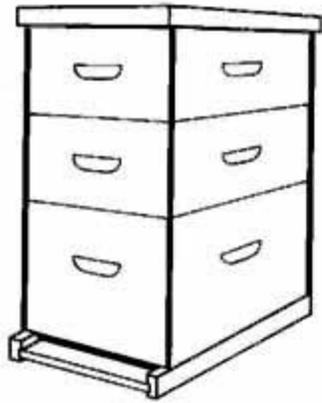
- **AHBs are not significantly visually different from EHBs**
- **AHB venom is not more toxic than EHB**
- **AHBs can still only sting once**

# Differences between AHB and EHB: Greater Defensiveness

- **AHBs respond quicker and in larger numbers when colony is threatened**
- **AHBs remain agitated longer than EHBs**
- **Disturbing an AHB colony results in 10 times more stings than with an EHB colony**
- **AHBs can give chase up to  $\frac{1}{4}$  mile**

# 10 Times as Far and 10 Times as Many

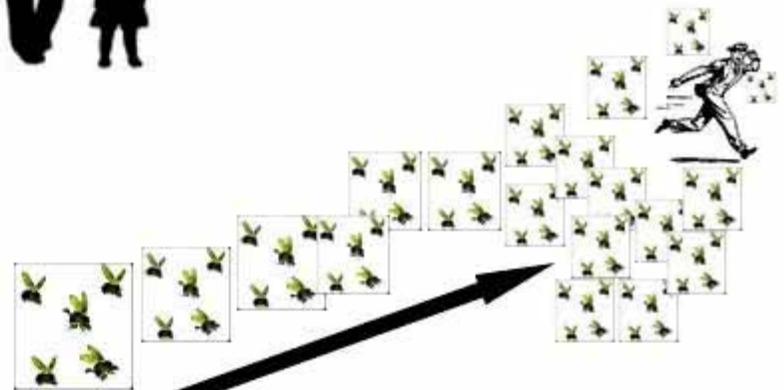
**EHB**



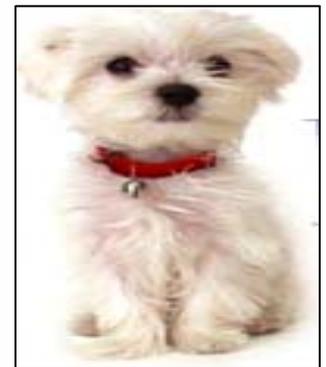
30 yds./ m



**AHB**



300 yds./ m



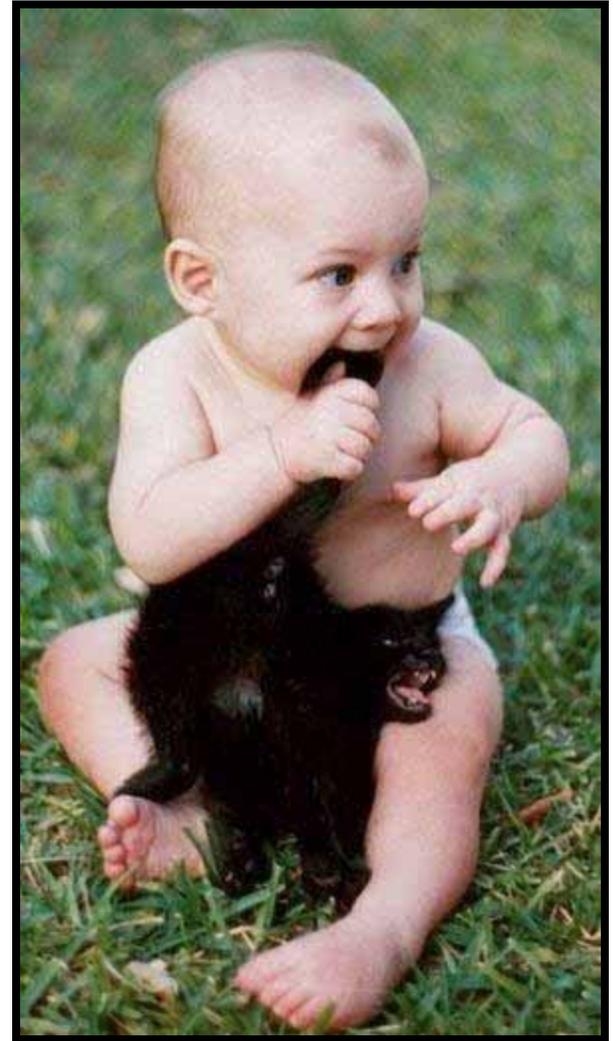
# At-Risk Groups

- **People likely to interact with bees**
  - **Outdoor workers**
    - **Agriculture**
    - **Landscapers**
    - **Surveyors**
    - **Utility workers**
    - **Land clearing equipment operators**
  - **Military during training**
  - **Sports enthusiasts**
  - **Rescue personnel**



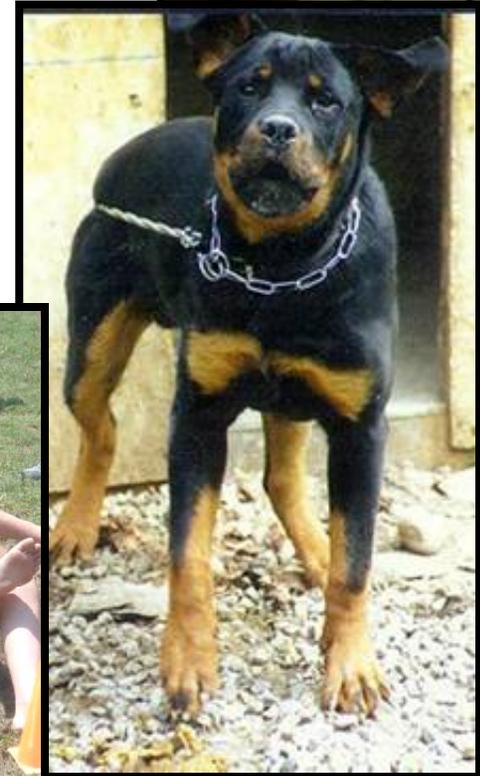
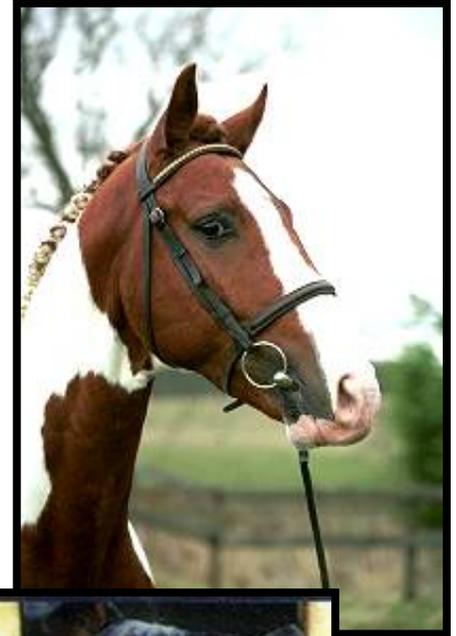
# At-Risk Groups

- **These people are at greater risk from encounters with feral AHB colonies because they are less able to escape the situation**
  - **Small Children**
  - **Elderly**
  - **Handicapped**



# At-Risk Groups

- **Children at play**
- **Animals at risk**
  - **Tethered or restrained**
  - **Penned, caged or corralled**
  - **Horses and bees don't mix**



# 2005 AHB Interaction in Florida

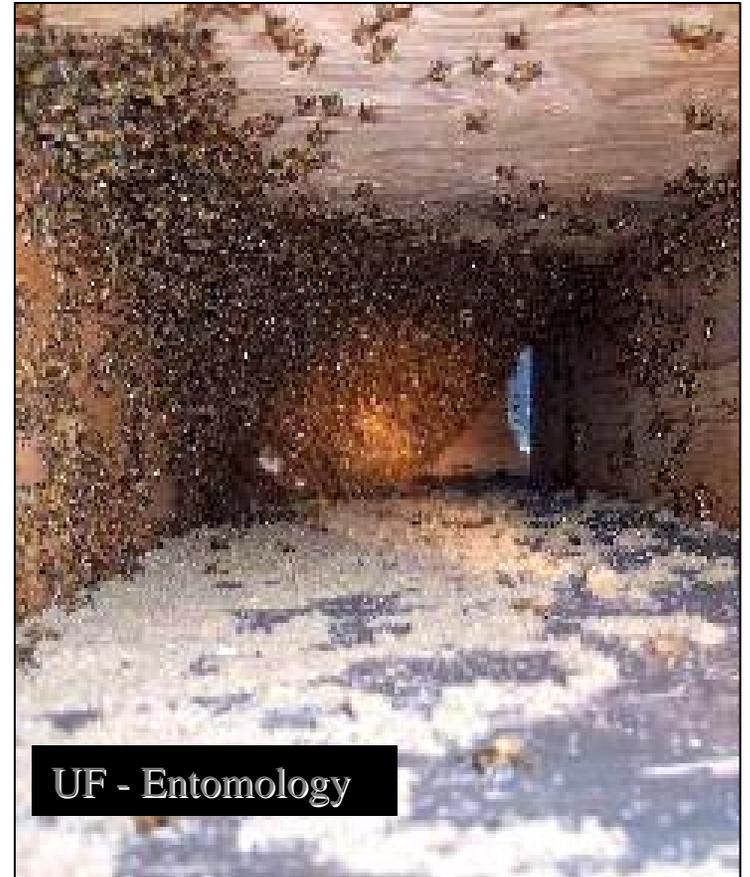
- Horse killed in LaBelle (Lee County)
- Dog killed in Fort Myers (Lee County)
- Dogs killed in Miami Gardens (Miami-Dade County) – dogs' owners sent to hospital, firemen (first responders) injured
- City workers in Moore Haven (Glades County) sent to hospital
- Farm worker in Brevard County injured
- Four dogs killed (Palm Beach County), property owner injured

*2006 interactions will only increase*

# Differences between AHB and EHB

## Selection of Nesting Site

- **EHBs are particular in selecting nest sites**
  - Hollow trees
  - Wall voids
  - Cavities (about 10 gallons in size)
  - Above ground, clean, and dry voids



# Differences between AHB and EHB

## Selection of Nesting Site

- **AHBs nest in any protected & even unprotected site**
  - On a limb
  - In an upturned container
  - Under an eave
  - Under a bench
  - In a pump house
  - In an animal burrow



# Where will you find AHBs



**Hive in an Old  
Gas Tank**



# Where will you find AHBs



**Bees in a  
BBQ grill**

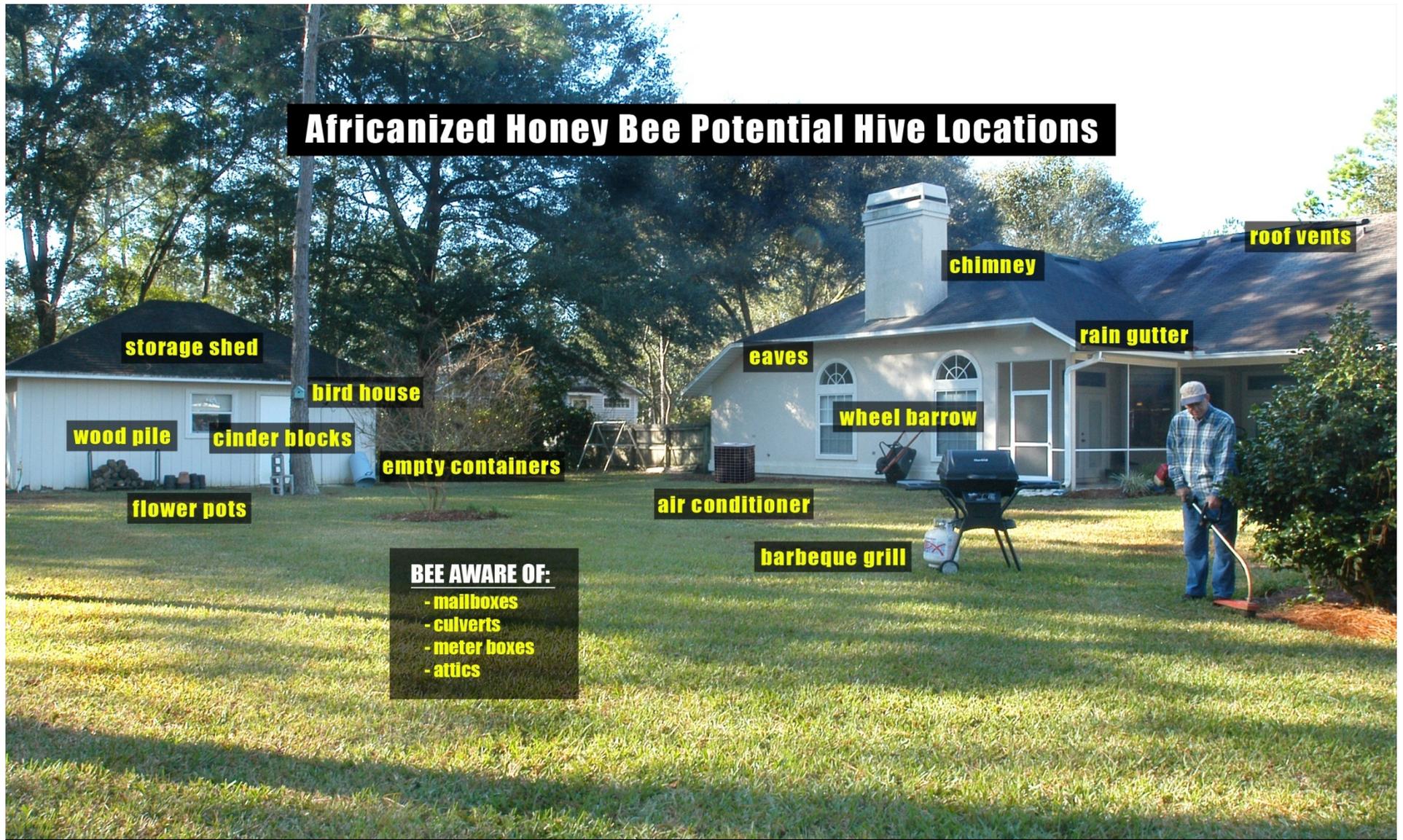


**Bees in an  
old tire**

# Where will you find AHBs



## Africanized Honey Bee Potential Hive Locations



- Check the environment around your homes regularly
- Look for bees in work areas before using power equipment – noise excites bees

# Differences between AHB and EHB Excessive Swarming

- **AHBs swarm more frequently than EHBs**
  - EHB colonies may swarm 1 or 2 times/yr
  - AHB colonies may swarm up to 10 times/yr



# Facts About Swarms

- Swarms are how colonies divide that get too large for their current hive location
- The old queen + some workers leave the old colony to find a new location
- Bees in swarms **are not defensive** because they do not have resources (honey and brood) to defend



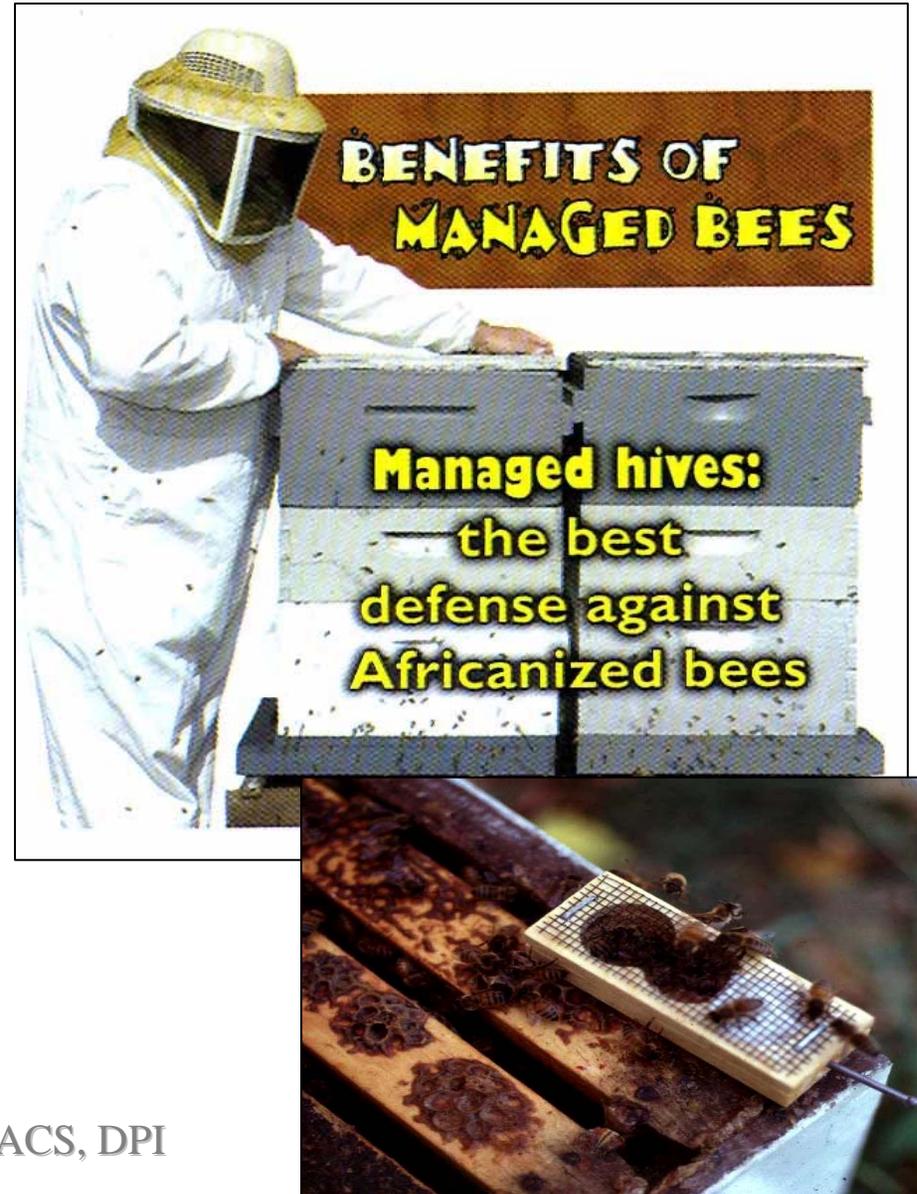
# Differences between AHB and EHB Smaller Swarms

- **AHB swarms are smaller than EHB swarms**
  - **Some aren't much larger than a coffee cup compared to basketball sized EHBs**
  - **Swarms of AHBs or EHBs are not defensive since there is no nest to defend**



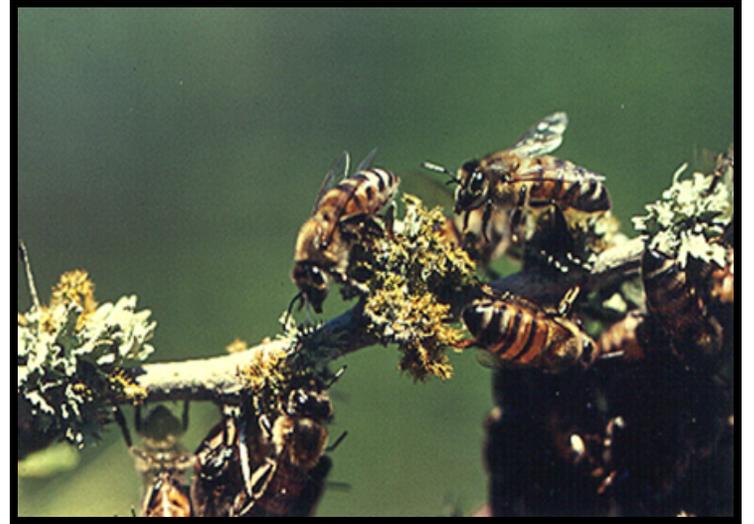
# AHB Response & Control

- **Beekeepers are our first line of defense**
  - Provide competition to AHBs for access to nectar plants
  - Requeening 2-4 times per year will maintain gentle bees
    - important to agriculture and natural communities



**Africanized  
Hybrid Bees  
have arrived!**

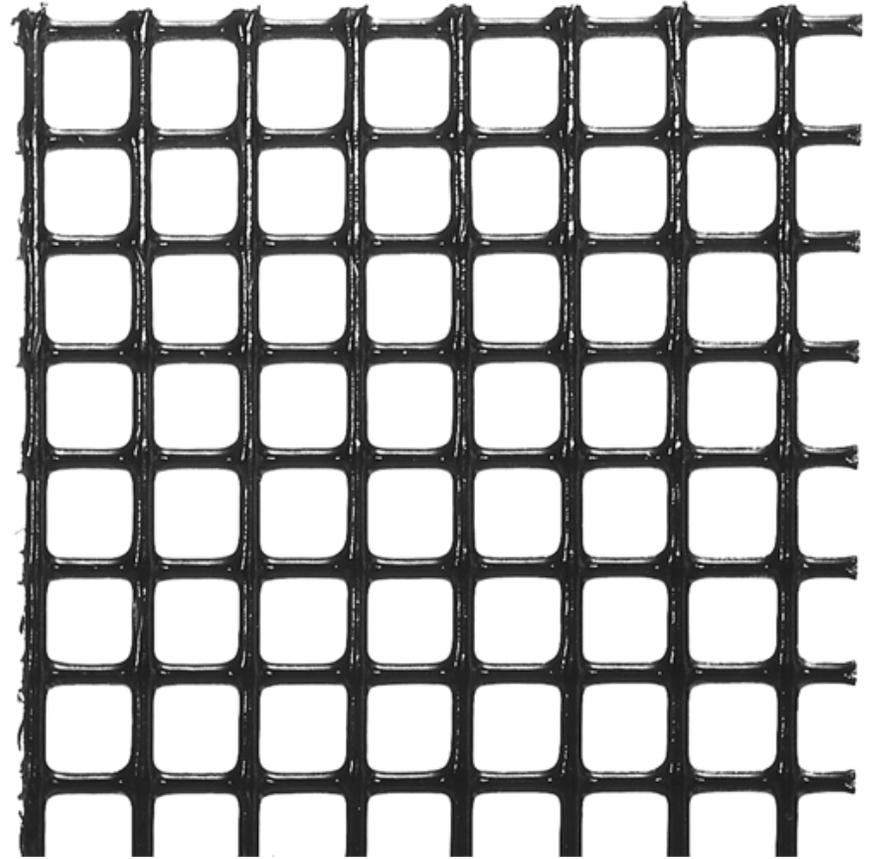
***So Now  
What?***



# Bee proofing

UF - Entomology

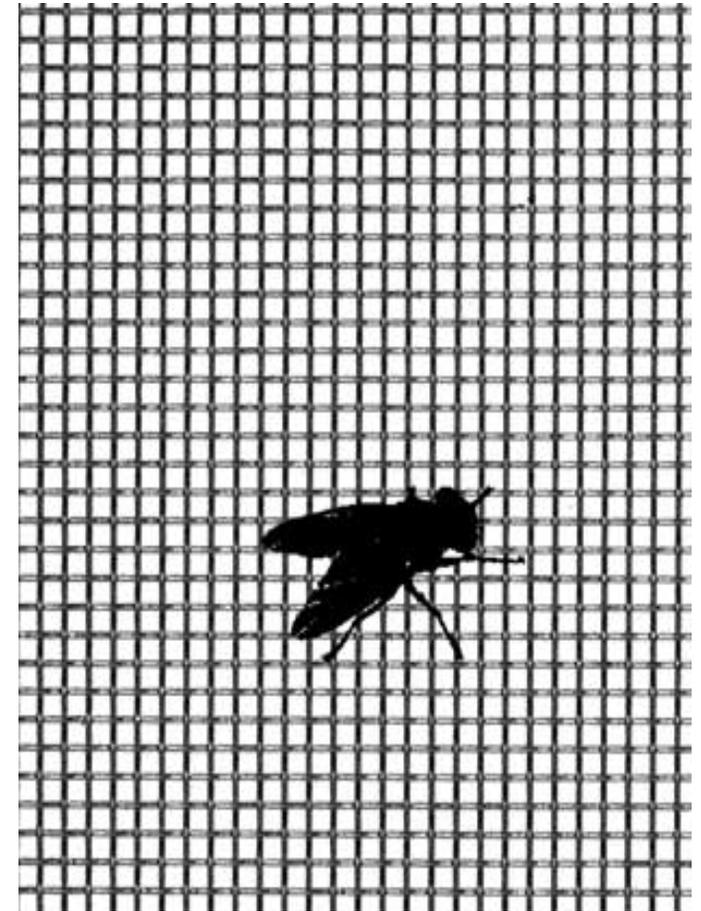
- **Africanized honey bees nest in a wide variety of locations**
  - Need openings  $>1/8$  inch
  - Cavity behind the opening for a nest
- **Locate potential nest sites**



***1/8" Hardware Cloth***

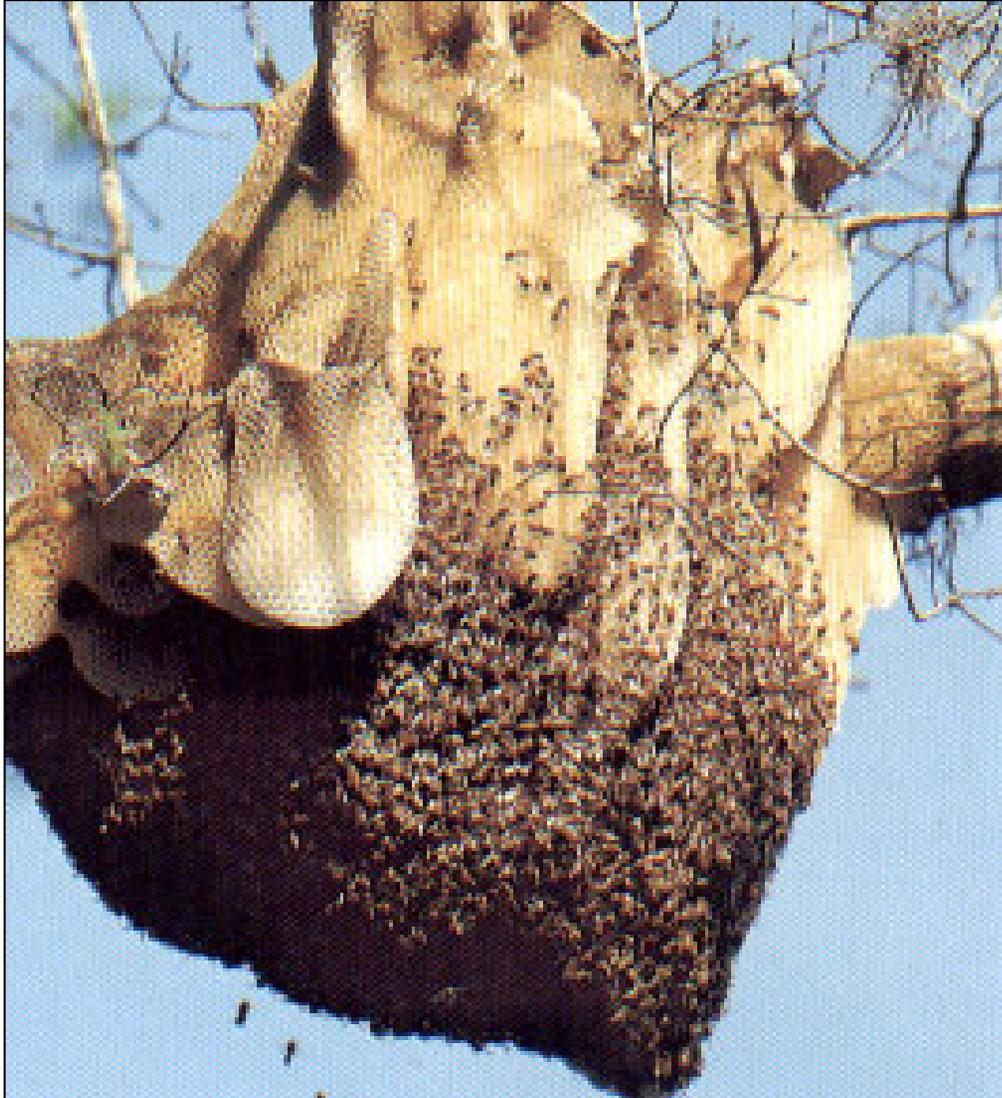
# Bee Proofing

- **Eliminate shelter access**
  - **Caulk cracks in walls, foundation, and roof**
  - **Fill or screen holes  $>1/8$ -inch in trees, structures, or block walls**
  - **Screen attic vents, irrigation boxes, and water meter box holes**
  - **Fill or cover animal burrows**



***Insect Screen***

# AHB Response & Control



- **Never try to control these – it's a nest/not a swarm - **get help!****

# Colony Removal

- **Disturbing a defensive colony by untrained personnel could endanger people and pets up to 150 yards away from colony**
- **Only experienced persons with protective equipment should attempt to remove or eliminate bee colonies**



# Don't Fool Around with AHBs - get help!

- **First responders**
  - Fire Departments
  - Animal Control

*In Texas, it is said 50% of  
AHB attacks are from  
nests people have known  
were there for months  
but did nothing about*



# Bee aware ... look, listen, run

- **If attacked, cover your mouth and nose and run inside a building, vehicle or other enclosure**
- **Don't swat at bees – that only makes them more defensive**
- **Don't jump in a pool – they'll wait for you**
- **Call a pest control company to remove the hive**



# If Stung...

- **Scrape off the stinger with a fingernail or credit card – do not pull it out**
- **Small children with lesser body weight are at greater risk of envenomation – 5-10 stings per pound is the general threshold (healthy adult could survive 500+ stings – not so a child)**
- **Seek medical help if needed**



# Bee Aware ...

## *The Beekeepers Challenge:*

*To educate the public  
about potential  
dangers of AHB,  
while at the same  
time stressing the  
importance of  
managed honey bee  
colonies to Florida  
agriculture*



# Beekeepers are Valuable

**European honey bees are the first and best deterrent against an area becoming Africanized**



# Importance of Managed Colonies in Mitigating AHB

- **Managed colonies dilute AHB populations**
- **Prevent AHB takeover of European honey bee hives**
- **AHB are less attracted to areas where other foragers exist**

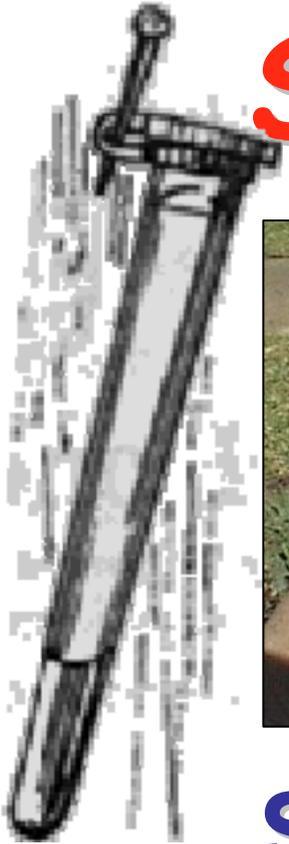


# Bee swarm trapping

- **A New Service Offering**



# Swarm traps



## Swarm lure

Costs ~\$2.50

- **Cone style trap is made from recycled wood pulp**
- **Lures used to attract bees in swarm traps or hive**



## Swarm trap

Costs ~\$15



# Foraging Bees are Good Bees

- Foraging honey bees, (Africanized or European) will not attack you, unless you step on/grab them
- Honey bees only become intensely defensive when defending their hive



# Pollination is an important part of Florida Agriculture

  
Division of **PLANT INDUSTRY**  
Florida Department of Agriculture and Consumer Services  
Charles H. Bronson, Commissioner

## the honey bee

An important part of Florida agriculture

 © 2003, David L. Green

Without honey bees to pollinate, approximately  $\frac{1}{3}$  of the *food* we eat everyday would *disappear*

*Honey bee* pollination increases yield and quality of crops grown in *Florida*



 © 2003, David L. Green

If the blackberry on the left was properly pollinated, it would have produced a fully developed fruit like the one on the right.

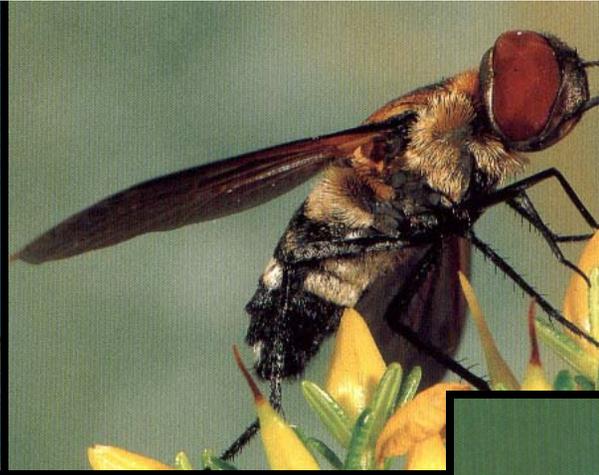
 © 2003, David L. Green

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The watermelon on the left did not develop due to lack of pollination — the ones on the right were successfully pollinated.



For more information contact Jerry Hayes, (352) 372-3505 x 128 or hayesg@doacs.state.fl.us



**But pollinators cannot be substituted one for one**



**“ If just one farm experiences a decline in pollinators that brings that farm’s production below its potential. If pollinator decline becomes regional, it might affect local availability. But if it starts to become national and international, reductions in world crops would occur and world food prices would begin to rise as supply declined.”**

**Dr. Peter Kevan  
Univ. of Guelph.**



# Where Does This Leave Us?

- African bees are not going to disappear
- Most successful invasive species in the world
- Educate the public about the differences between African and European bees
- Keep keeping bees!

# Will Beekeeping Survive the Africanized Bee in Florida?

- **Yes, but it will be different**
- **Many hobbyist beekeepers will quit**
- **Beekeeping will become more labor intensive**
- **Beekeeping will become increasingly a rural activity**
- **Florida's agriculture depends on pollination.  $\frac{3}{4}$  of Florida's crops are bee pollinated compared to  $\frac{1}{3}$  of US crops**



**FDACS/DPI Helpline**  
**888-397-1517**

**[www.doacs.state.fl.us/pi](http://www.doacs.state.fl.us/pi)**

Florida Department of Agriculture & Consumer Services  
Division of Plant Industry





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**University of Florida**

**Honey Bee Research & Extension Lab**

**[www.AFBEE.com](http://www.AFBEE.com)**

**[www.UFhoneybee.com](http://www.UFhoneybee.com)**

**Catherine Nalen – Extension Technician**