



# ***Bee management***

(*Apis mellifera*, family Apidae)

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Arizona has many types of common bee species which are responsible for pollinating vegetables, fruit, nuts, and even cotton plants. Bees provide us with wax, honey, and are responsible for many of the wildflowers we enjoy in the spring. Without bees, our world would be a very different place!

Despite this, there are many misconceptions about bees. Misunderstanding bee behavior can cause panic and increase the risk of getting *stung*.

## **Two types of bees**

Bees may be *social* (live in colonies and collectively defend a nest) or *nonsocial* (solitary individuals).

**Nonsocial bees** are less aggressive and generally have milder stings. It typically requires intentional agitation on *our* part to get one to sting! A nonsocial bee has no comrades ready to come to her aid should you inadvertently provoke her. More than 90% of all bee species are nonsocial in nature.

**Social bees**, like honeybees, are more likely to sting in defense of their colony, and in particular their brood (baby bees). When one bee stings, pheromones are released which cause other defensive bees to sting.

### **> Honey bees**

Honey bees are a social bee brought to North America from Europe by colonists, no honey bees are native to North America. In 1957, 26 Tanzanian queen bees (*Apis mellifera scutellata*) were accidentally released by a bee-keeper in Brazil. In the early 1990's the European honey bees in the U.S. began hybridizing with African honey bees that had migrated into the southern states. The hybridized offspring are referred to as **Africanized honey bees (AHB)**. *The physical differences between AHBs and European honey bees can only be detected by an entomologist using fine measurements, or genetic techniques.* It is estimated that almost 100% of wild bee colonies in Arizona are Africanized bees.

## **All wild honey bees in Arizona are presumed to be Africanized**

### **If you encounter a hive or swarm, assume they are Africanized honey bees and do the following:**

1. Do NOT panic! 7 out of 10 deaths related to bee attacks (not involving bee allergy incidents) are due to folks panicking and literally causing their own death by running off cliffs, in front of cars, drowning, etc. Being hit by cars and drowning are the 2 most common tragedies.
2. Do not try to remove a colony yourself! Call the experts. Though their venom is no more or less toxic, the AHB tends to sting in greater numbers and is more easily provoked than the European honey bee.
3. If you are being chased: run away in a straight line and find shelter inside a car, house, or building. Africanized bees are slow fliers and most healthy people can out run them. If you cannot access shelter, run the length of 2 football fields, before stopping.
4. Avoid other people, or they will also be attacked. Once stung, you are a "marked" target. Bee stings are delivered with a pheromone which labels you as a threat and incites other defensive bees to sting.
5. Scrape stings off as soon as you get to an indoor safe place. Wash the sting site with soap and water, apply a topical antibiotic, and ice wrapped in a cloth will help soothe the discomfort.
6. Never dive underwater. The swarm will simply wait for you to surface, and your head and face will be the first to emerge.

7. **Seek medical attention in case of anaphylactic shock.** Symptoms occur within seconds or minutes may include: difficulty breathing, difficulty swallowing, dry cough, turning pale, itchy rash, itching and swelling of the eye area, wheezing, rapid or weak pulse, anxiety, fainting, dizziness, hives, etc.
8. **If an adult sustains more than 30 stings they should be treated in a hospital emergency room.**

## Africanized honey bee

Description: Yellowish-orange abdomen with black transverse bands. Body is overall hairy overall.

Length: about 2/3" in length.

### Hive make-up

There are three types of honey bees in a colony: the queen (of which there is only one), drones, and workers.

Drones are fast flyers, adapted for mating (after which they die). Workers are sterile females who have a variety of "jobs": to build and protect the hive, gather nectar from plants, feed the larvae, drones and queen, clean and repair cracks in the hive. Workers will sting perceived intruders. The stinger is uniquely barbed in honey bees, making it difficult to extract. The queen does not leave the hive unless she is in search of a new hive location; her only job is to produce offspring.



### Foraging

Bees forage around flowers and water. Foraging bees may sting if they are disturbed accidentally or intentionally. They may also become defensive if they are foraging close to the colony. As most of us have seen, bees are all around us, most of the year. In spring, entire trees with blooms may be full of a variety of bees, including foraging Africanized honey bees (AHB). Avoid close contact with them, and they will go about their nectar-gathering without a second thought to the humans around. If you are sensitive to bee stings, avoid planting plants and trees that attract bees.

### Swarming

Swarming occurs many times a year for the Africanized honey bee (AHB). When a new queen bee is produced, the old queen sets out in search of a new hive location. Approximately 70% of mostly the younger workers go with her; the remaining 30% remain at the old hive and establish a new colony with the young queen. The AHB is not particular about hive location, leading to more common encounters between it and humans.



### Nesting

Bees seen moving in and out of a void via a small entrance hole or crack in a block wall, tree trunk, roof, etc. have set up a colony within. The sooner the colony is remediated, the safer and cheaper it will be to remove (established colonies are extremely protective of the hive). Call on a specialist; **do not** attempt to do this yourself!

*Leave bees to their work and give them plenty of space. The next time you pass by the yellow blooms of an acacia or brittlebush don't panic.*

## Differentiating SWARMS from COLONIES

Swarms are generally not defensive and usually move on of their own accord within 1-4 days. Distinguishing between a swarm and a colony allows you to assess associated risk.

### Recognizing a swarm

A swarm is a bunch of bees on the move, they will temporary stop-over to allow the queen to rest. They form a visible cluster of bees (hundreds to thousands). They are always exposed and open, and there is no comb present. They are very rarely defensive, and are usually quiet and demonstrate little flight activity. None of the bees are pollen-laden.



**Bee Patient!**

### Recognizing a colony

Present for weeks, months, or years. The bees move in and out of holes, walls, hollow trees, junk piles, pots, etc. Most of the bees are NOT visible (most are inside a cavity). If the bees are exposed the comb is visible. There is constant bee activity, and pollen-laden bees can be observed arriving with yellow/orange pollen in pollen baskets.



**Bees often become defensive !**

### When to call 911

If you are stung and cannot get away	call 911
You see someone being attacked by bees	call 911
Someone has been stung and you identify the indicators of anaphylactic shock	call 911
If you get away but have been stung more than 30 times	visit ER or call 911
You are not stung, but find a colony in an area where people frequent	call a bee specialist to remediate the colony
You identify a swarm	cordon off the area until the swarm moves on
You identify foraging bees	not an emergency