Catching Swarms

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Catching swarms is something every beekeeper should do. Bait hives can help, but bees on a branch are a rite of passage.

Since honey bee colonies naturally reproduce their social unit through swarming, beekeepers have developed several methods to capture and install swarms during the swarming process. They also put out swarm traps (bait hives) to attract swarms. This is a highly effective tool in the fight against African honey bees.

During the swarming process bees search for a new home and move to an empty tree cavity, the side of a house or occupy some other cavity. There they establish a colony and quickly grow into a full-scale hive. No longer swarms, they are called wild or feral colonies. Ironically, one of the prime sources of swarms are from beekeeper-owned colonies – after a period of successful buildup, any colony may swarm and be mis-labeled a 'survivor' colony.

When a property owner finds a colony in a home or building, they should contact a local beekeeper to remove it. These colonies should not be killed using insecticides, because the honey and dead bees attract opportunistic feeders, from small insects to large mammals. Killing the bees simply makes it easier for the pests to occupy or feed on the nest. Also, without alive bees to control conditions inside the hive, the honey will attract moisture and ferment. A bubbling mixture of fermenting honey may penetrate plaster and damage the building. Of course, we discourage anyone from killing bees unless they are highly defensive. Humans need all the bee colonies we can get.

Catching swarms

A swarm is a transitory group of bees consisting of a queen bee, five to fifteen thousand worker bees, and a few drones. There is no honeycomb, and the only food the bees have is what they carry with them inside their bodies. Swarm catching is a relatively safe chore for the trained beekeeper. Because the bees are engorged with honey, they are slow to sting. As a swarm leaves a hive, it congregates in a local tree or shrub to make sure the queen has joined the mass of mostly worker bees. Then they decide where they will go to build a permanent nest – scout bees search for suitable nesting cavities and return to the swarm where more bees check out evidence of the potential home. A number of scout bees represent different sites and each shares the location and features of different cavities by doing a dance and sharing samples of the dust and odor of the space. Other bees visit the site and report back, and eventually the colony forms a consensus. They then fly off to their new home, and set up housekeeping.

When Janet's, one of my beekeeping friends, hive swarmed, it landed on a low limb of a spruce tree, almost touching the ground. It was an easy one for Cathy King to photograph as Janet and I hived the bees.

Janet and I positioned one of her empty hive bodies under the swarm. We took out two frames for more room for the bees to fall.

While it is in the open, clustered on a tree branch or outside structure a beekeeper may capture the swarm. There is no comb in these swarms, so they bees may be shaken or brushed into a box or empty hive body and carried home. The queen must be captured during this process, or the bees will fly back to find her. Their new home must be attractive to them, or they may swarm again! They are repelled by strong chemical odors, damp conditions and crowded spaces.

If a swarm is unable to decide on a new home it will build honeycomb in trees or shrubs and this outdoor location becomes a permanent home. In temperate areas these open swarms rarely survive the Winter, but they may persist for years in tropical climates.

How to capture a swarm

Experienced beekeepers keep a swarm box in their car or truck during swarm season. These are often eight or 10 frame hive bodies with a bottom board fastened so it will stay with the box. A piece of window screen or eight-mesh hardware cloth is placed in the hive entrance so bees cannot escape during the move to the new apiary site.

The ideal swarm is one that is a few feet off the ground and on a tree branch. Then it is simply a matter of placing the swarm box under the swarm, and shaking the branch so the swarm falls into the box. Frames of drawn comb and foundation will then be placed into the box so the bees have cluster space. A screened lid will then go on the top of the box – two nails can be partially pounded into the box to hold the lid securely during transit. If the distance to the new apiary is small, a regular lid may be used.

Many beekeepers have been caught unprepared and used a cardboard box to do much the same thing. I wonder how many empty copy paper boxes, with their telescoping lids, have been taken from the work site and used to capture swarms. As long as the bees are not confined too long and have ventilation (punch holes in the cardboard), these work fine.

Swarms high off the ground may require a ladder or scissors lift to reach. If you are afraid of heights or uncomfortable on ladders, let another beekeeper handle this swarm. You have the right to say no!

Some beekeepers use bee vacuum devices with long tubes to suck the swarm into a container. The velocity of the unit must be reduced so the bees are not handled too severely. Avoid stressing the bees if you can.

Hiving the swarm

Bees in a swarm box with frames may be placed into a regular hive or left in the swarm box as a new hive. Remove the screened entrance and feed the colony with a top feeder (a jar or bag in an empty hive body over the single box).

If you have bees in a cardboard box (or burlap feed bag), set up a permanent hive location in your apiary and put a cloth or cardboard at the front of the hive leading to the entrance of the hive. Gently pour the bees out of the box or bag and let them crawl into the hive. Look for the queen, or queens, as the bees walk into the hive. It is a pretty impressive sight.

Some beekeepers mist the bees with water or thin sugar syrup as they add them to the hive, but I do not see any need to do this.

The new hive has several frames of honey and pollen, empty frames, and frames of foundation. If you are a natural beekeeper and are letting bees build their own comb (especially in top-bar or Warré hives), a drawn frame from a similar colony is a great way to hold the bees in the hive and to 'tell' them how the combs are to be built!

Feed swarm colonies with a one to one sugar syrup. Recheck the hive in a few hours to see if they accepted the home, and then recheck every three to six days to see if they need more sugar syrup. Don't get too nosey and work the colony too much – this may drive the bees out of the colony. If you see new comb and eggs, stop the hive visit. Once the bees start comb building they will stay in the hive.

New swarms are delightful to watch as they grow and build comb, store food, and produce brood, often in the first few hours of occupancy of the new nest. They build worker comb at first, and during the first three months will produce most of the comb they will ever need in the hive. Feeding is optional for many beekeepers, but I consider it a small investment in this new hive. Your goal is to help it grow so it produces honey and/or provides pollination service both this season and in future seasons.

Small swarms should not be put into hives, but combined with other colonies as discussed below.

Swarm traps (bait hives)

Standard beekeeping equipment or special trap hives allow beekeepers to attract swarms by providing a nest cavity of the right volume, orientation to the sun and entrance size. A chemical bait of bee pheromones is provided as a lure, sold by bee supply manufacturers.

Shaking the swarm into the box.

Once the bees were in the box, we gently put the remaining frames into the box, letting the bees clear the way. We used a few puffs of smoke and a bee brush. The colony is now ready for a proper feeder, lid and time to settle.

Above bait hive photo courtesy of Shane Gebauer at Brushy Mountain Bee Farms.

Bait hive in place. (Jamie Ellis photo)

Swarm hives should positioned 10 to 20 feet off the ground in trees and on buildings. Space them 150 to 300 yards apart for maximum swarm capture, often along the borders of a property to form a trap line.

Standard beekeeping equipment: Use a single hive body with a cover and bottom board, in which you put empty comb and a pheromone lure. Or use a four or five frame nucleus hive. These are easier to place into trees and alongside buildings. Swarms are attracted to these locations, and will occupy the nest. The bees can be taken down at dusk and moved to the apiary. This system is a wonderful way of capturing swarms at low cost.

If you are in an area of high bee populations, such as near a commercial beekeeping area or an area of commercial crop pollination, you are performing a service when you capture swarms that issue from these hives. Swarming is a natural event, so it is hard to prevent swarming from all colonies in all bee operations.

Fiber container hives: Paper and fiber plant containers with a bottom lid have been used to collect swarms for beekeeper use. No foundation or starter strips are in these units, so they force the beekeeper to move the comb into frames or hang from top bars. Since the arrival of African bees in the United states they have provided a way to trap and kill invading swarms.

The fiber containers are positioned so the entrance faces the ground or the side of the nest, depending on trap use. Wire is run through the trap so it can be suspended from a tree, pole or building. The entrance is usually reduced with wire to keep birds and other potential invaders out of the nest.

A pheromone lure may be hung from the top of the trap. These are attractive to bees when positioned in areas of mixed sun and shade (like one finds in a lightly wooded area) 10 to 20 feet off the ground. These traps are used as a proactive method of trapping African bee swarms and killing them by putting them into plastic bags (bees and all) and killing the bees by putting the bag into a freezer or left in the sun to overheat the bees. By avoiding any pesticide use, the honey and comb in the trapped hive may be used.

These traps are valuable in those states that prohibit personal ownership of African hives. These trap hives are an excellent way to capture a lot of African swarms and prevent them from moving into local nest sites. Enterprising beekeepers offer a trapping service around parks, amusement parks, and other public areas, charging a fee per trap hive.

Traps should be checked at least every 21 days, using binoculars to search for bee flight.

Swarm management hints

When not killing these swarms, keep the following in mind:

• Swarms are fragile, and benefit by feeding sugar syrup and perhaps a small pollen patty. In nature only one out of six swarms reaches its first birthday.

• Swarms carry a frequently of disease the same as the bees in a six mile radius. If you are in an area of American foul brood or Nosema, prophylactic medication is advised.

• New swarms are very good at building new honeycomb, and will build most of the comb they will ever need in the first three months of their existence if properly managed. If you give swarms new combs and foundation, or starter strips, you will benefit from this strong comb building instinct.

• If a swarm is unpleasant to work – the bees run around the comb, or bees hit you in the veil, or the queen lays a poor brood pattern, I strongly recommend you replace the queen during the first nectar flow by introducing a mated queen, a virgin queen, or a queen cell. Remove the old queen first.

• Small swarms, those with less than one pound of bees, can be combined with another colony, one needing extra bees. The easiest way to introduce a swarm is to simply shake the bees at the entrance of the hive to be strengthened. I do this later in the day, and the bees walk into the hive without any sign of fighting. You can often find the queen while they walk in, and cage her if you want to use her somewhere else.

• After-swarms are issued from colonies that have already swarmed once, the mated queen is no longer in the parent hive. After swarms contain one or more virgins that move with the swarm into the new home, and then fight to establish the new queen in the colony.

• Remember that proper colony management encourages you to minimize swarming, but in many seasons it is nearly impossible to prevent every colony from building swarm cells and following Nature's instinct. BC

Thanks to Janet DeZwaan and Cathy King for helping with the bees and photographs.

Check for space availability for Dr. Connor's Queen Rearing and Bee Breeding program, June 17-19 at the Connor Farm in Galesburg, Michigan by emailing Dr. Connor at ***LJConnor@aol.com***.

If you live in a state where African honey bees are found, check with your Apiarist to learn if you can legally keep colonies of African bees. Check the state statutes regarding African bees using swarm traps for a fee.