

Where's The Buzz?

North Carolina takes action to revive the shrinking honeybee community

Text and photos by Tina L. Lavallee



With losses of wild colonies estimated as high as 95%, N.C. State University is taking action designed not just to restock the state with bees, but with new beekeepers as well.

Spring is here and the trees and flowers are all abuzz, but a familiar face may be missing. A quick look in the garden will reveal a number of insects sipping nectar from blossoms, but the honeybee is probably not among them. North Carolina's honeybee population has been so decimated by the Varroa mite that only people living close to an active beekeeper can count on seeing honeybees in their plantings. With losses of wild colonies estimated as high as 95 percent, the state is teetering on the brink of a serious shortage of these beneficial insects. To prevent a future silent spring, N.C. State University is taking action through a program designed not just to restock the state with bees, but with new beekeepers as well.

The villain in this story is the Varroa mite, a tiny crab-like parasite that preys on honeybees. A native of Southeast Asia, the mites invaded the western United States in the early 1980s and spread eastward, wiping out millions of honeybee colonies that lacked natural resistance to the new pest. By 1989, the mites reached North Carolina and attacked the state's abundant wild bee colonies, virtually eliminating them. "You never hear of anyone finding a bee tree anymore," says long-time Randolph County beekeeper George Byrum. "They've simply vanished."

The mites start their dirty work by hitching a ride on worker bees as they gather nectar and

return to the hive. The mites are so small that the bees themselves are unable to detect and remove them. Once inside the colony's brood chamber, female mites lay eggs that hatch and feed on the developing bee larvae. The infestation is not obvious at first, but as the mite population increases, the bee colony becomes weakened by the lack of new worker bees to gather food and tend the queen. In time, these losses cause the collapse of the colony due to starvation.

Most domestic honeybees are no more immune to the Varroa mite than their wild cousins, so beekeepers also experienced significant losses in the early years of the invasion. It is now recommended that hives be inspected at least five times a year and treated whenever mites are found. This increased maintenance has changed the face of North Carolina beekeeping. In the past, many farmers and gardeners kept one or two hives on the outskirts of their property that they opened just once a year to remove honey. "The bees essentially took care of themselves," says George Byrum. "But the mites put an end to that." Mites crept unnoticed into these lightly-managed hobby colonies, making them among the first to go. Often the bees died without any visible sign to the keeper, who simply found an empty hive box. Discouraged, many of these hobby beekeepers never replaced their bees.

Above: Bees working on a frame of new honey.

“The Varroa mite showed people the difference between keeping bees and being a beekeeper,” says Mr. Byrum.

Today, the only honeybee colonies that continue to thrive are those in the care of vigilant individuals who keep the Varroa at bay. Unfortunately, these people are also in short supply. Many of North Carolina’s beekeepers are over the age of 60, and there are few new faces joining their ranks. “North Carolina has a very active beekeeping community,” says Dr. David Tarpy, assistant professor and Extension apiculturist at N. C. State University. “But there just aren’t enough of them.”

Dr. Tarpy believes that new blood is the key to reviving the bee population and is exploring ways of attracting first-timers to the art of apiculture. With this goal in mind, N.C. State initiated the New Beekeeper Cost-Sharing Program in February 2005 with funding from the Golden LEAF Foundation. The education/research program will give two colonies of bees, complete with hives, to 250 approved applicants. The applicants are required to join a local beekeeping organization as well as provide regular data on their hives. The bees chosen for the program are a select strain of Russian honeybees that have demonstrated natural resistance to the Varroa mite. Response to the program has been overwhelming, with more than 2,700 applications received for the available 250 spots. It is hoped that participants will be encouraged to make beekeeping a life-long hobby or even a business, thus increasing the overall bee population.

North Carolina has picked a good time to advance the public awareness of honeybees. “There are more bee products available now than ever before,” says George Byrum. “You find hive products in all sorts of forms, from soaps and lip balms to candles.” The popularity of national brands such as Burt’s Bees proves that bees do a lot more than produce honey. However, some of the honeybee’s most vital benefits are more subtle.

Gardeners have long been aware of the increased yields in fruit and vegetables due to bee pollination. Now the task of pollination is taking on a crucial role in the development of North Carolina’s post-tobacco agricultural economy. The state’s bee shortage comes at a time when many tobacco farmers are switching to crops such as cucumbers and melons, which depend on insect pollination for profitable yields. Bees collect pollen grains on their legs as they visit flowers in search of nec-

tar and brush the pollen off inside other flowers along their route, thus allowing fertilization to occur. “Research shows that a single cucumber flower must be visited at least 12 times in order to bear fruit,” says Dr. Tarpy. “It’s easy to see why the state needs a large, stable number of honeybees.”

In the past, crop pollination was easily accomplished by colonies of wild bees, but today’s farmers may need to rent hives from commercial pollinators to get the job done. Commercial pollinators often keep hundreds of hives that are leased for a specific period to allow pollination of a grower’s crop. Currently, North Carolina has only a handful of large professional apiaries to handle the growing number of acres in need of pollination. Farmers can hire out-of-state pollination services if necessary, but they hope that new local beekeepers will eventually fill this void as well.

State officials believe that their actions will be enough to avert a potential crisis, but much depends on public participation. The Varroa mite makes it impossible to restock wild colonies, but there is still time to stabilize the bee population and control mite infestation if enough people become involved as beekeepers. The Cost-Sharing Program is a start, but many more interested individuals are needed to bolster the ranks. Only with the support of dedicated caretakers will North Carolina resonate again with the music of the honeybee.

Tina L. Lavalley is a member of Randolph EMC and has written for Mid-Atlantic Farm Chronicle and Country Folks Grower, among other publications.



Above: Randolph County beekeeper George Byrum treating his hives for mites.

Below: Bee larva in the brood chamber. Mites feed on the developing bees, causing a shortage of workers needed to maintain the colony.

How to Start Your Own Buzz



Check with your local Cooperative Extension office to attend one of nine scheduled “bee schools.”



Visit the N.C. State Apiculture Dept. at <http://entomology.ncsu.edu/apiculture>



Visit the N.C. State Beekeepers Assn. at www.ncbeekeepers.org



Contact the state apiarist by e-mail at nchoneybees@ncmail.net or by phone at (919) 233-8213.



To locate commercial pollinators, go to www.ncagr.com/beelinked

