

# How Do Honey Bees Survive the Winter?

Insects that live in temperate climates have evolved survival mechanisms to avoid death by freezing. Some find shelter in the soil, under bark or leaves, or, like the pesky box elder bug, even find shelter in our homes. Many insects produce glycerol or other chemicals which act as a natural antifreeze and keep them from freezing. The monarch butterfly has an unusual strategy for an insect: it actually migrates to a warmer climate to avoid cold temperatures.

The survival tactics that honey bees use are different from most other insects because they stay active in their hives even on the coldest winter days and nights. How do they do this?

First, the temperature in a properly managed hive never falls below 63 degrees F, even when the outside temperature drops to -20 degrees F. The worker bees form a tight cluster and surround the queen bee. The workers use stored honey as fuel and shiver to generate metabolic heat. The bees on the outside of the cluster, insulate the cluster while the innermost bees generate heat. They continually rotate



their position, alternating their role as a heat producer and heat retainer. A typical honey bee hive needs about 60-70 pounds of honey to sustain it through the winter. A well-managed bee hive in a good location will produce much more honey than it needs to maintain itself. What the bees don't need is harvested by the beekeeper and available for us to enjoy. (BPO)

## Did you know....

- Honey bees must tap two million flowers to make one pound of honey?
- Each honey bee visits 50-100 flowers during one collection trip from the hive?
- From one hive, bees fly 55,000 miles to bring you one pound of honey?
- The average worker honey bee makes only 1/12 teaspoon of honey in her lifetime?
- A honey bee flies 15 miles per hour?
- It would take one ounce of honey to fuel a bee's flight around the world?
- North American natives called honey bees "white man's flies" because they were brought to North America by European colonists?
- Bees have been producing honey from flowering plants for 10-20 million years?
- USDA estimates that there are three million colonies of bees and 211,600 beekeepers in the US? Most (95 percent) of these beekeepers are hobbyist beekeepers who manage less than 25 hives.

Source: National Honey Board.



## Looking for a New Hobby? Learn to Manage Bees and Produce Honey!

In Nebraska, approximately 700 beekeepers manage about 115,000 colonies of honey bees. The annual honey production ranges from five to 11 million pounds, depending on flora availability and weather conditions. With optimal weather conditions and flora availability, a properly managed colony can produce 100 pounds or more of honey. A more realistic six-year average for honey production is about 75 pounds per colony.

Honey bees play an important role as pollinators of many fruit, vegetable and seed crops.

If you are a serious gardener, you may want to keep bees for the pollination benefits alone. Some Nebraska crops requiring bee pollination are: alfalfa, clover and vetch seed, sunflowers, canola, melons, squash, cucumbers and pumpkins, apples, cherries, pears and raspberries.

Bees also pollinate many plants important to wildlife and soil conservation as well as wildflowers that beautify the landscape.

For the beginner, buying new equipment with packaged bees is the best way to start. An established hive can be over-

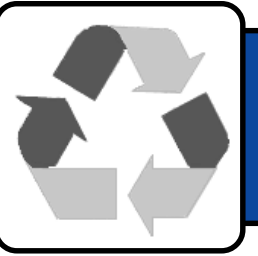
whelming for the beginner who won't know how to handle swarms, re-queening and colony defensiveness. Buying new equipment will eliminate any possibility of disease transmission and allow the beekeeper to learn the individual parts of the hive while putting it together. With packaged bees, you can gain valuable experience working with a small colony and gain experience as the colony grows. Two to four colonies are ideal for beginning beekeepers.

You can learn about beginning beekeeping in two 3-hour classroom sessions from 6:30-9:30 pm on March 18 and 19 at the Lancaster County Conference Center, 444 Cherrycreek Road, Lincoln. On April 6, you will learn how to install packaged bees, handle bees, put hives together and learn about extracting equipment at a practical lab session at the Agricultural Research and Development Center, near Mead.

Know somebody who would like to learn about bees or is interested in beekeeping? Give them a Christmas gift by pre-registering them for this workshop by Dec. 20 and you will receive a gift certificate to put in their Christmas stocking.

Registration for this workshop is \$20 and will include reference materials. For more information, call 441-7180. (BPO)

## Environmental Focus



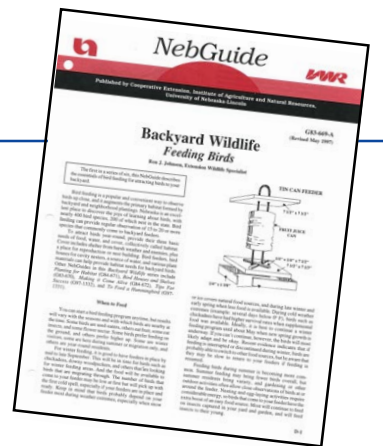
## Nothing Brightens up a Winter Day Like the Song of a Bird

Chick-a-dee-dee-dee...the song of the Black-capped Chickadee. Who hasn't heard its cheery voice in the cold of winter? These feathered acrobats are among the friendliest birds in the neighborhood. Our winter landscape is brightened by cardinals, American Goldfinch, blue jays, juncos, nuthatches and, of course, chickadees who are frequent visitors of backyard feeding stations.

Feeding stations can be simple and inexpensive to make. Scrap lumber, tin cans, plastic soda bottles, milk jugs and cartons and plastic buckets are easy to find. All it takes is a little creativity and knowledge about

the birds you're trying to attract.

Many birds we enjoy at our feeders have specific seed preferences or prefer suet. Location of feeders and number of feeders is also very important. The feeders should be protected from strong winds, preferably near shrubbery or conifers. Recycle your Christmas tree by propping it up by the feeder to give the birds added shelter. With several feeders in your backyard, more birds will have an opportunity to feed at the same time. (SC)



### Extension Resources on Feeding Birds and Wildlife Habitat

University of Nebraska Cooperative Extension has several publications available on feeding birds and on wildlife habitat. Visit your local extension office to pick up a copy or check out the Lancaster County Web site at [www.lancaster.unl.edu](http://www.lancaster.unl.edu) for these materials and much more related to birds, birdfeeding and habitat.

**Backyard Wildlife: Feeding Birds (NebGuide G669 - free)** — the essentials of bird feeding for attracting birds to your backyard.

**Backyard Wildlife: Making it Come Alive (NebGuide G672 - free)** — "how-to" ideas for getting the most enjoyment from your backyard wildlife.

**Backyard Wildlife: Planting for Habitat (NebGuide G671 - free)** — information on planning and planting habitat for wildlife in your backyard.

**Backyard Wildlife: Tips for Success (NebGuide G1332 - free)** — tips for success in bird feeding, adding water, birds to expect, dealing with nuisance wildlife and

others.

**House Finch Eye Disease (NebFact 355 - free)** — Feeding stations cause unnatural concentrations of birds and thus increase the potential for transfer of disease from one bird to another. A watchful eye and good judgment will often prevent disease problems before they occur.

**Build a Nest Box (Lancaster County Fact Sheet 24 - free)** — Learn how to successfully attract birds by building an inexpensive, simple, six-sided box. Everything from house wrens to American Kestrel's and Woodducks.

**Shelves, Houses and Feeders for Birds and Mammals (RP338 - \$4)** — You'll get plans and information on constructing bird and mammal houses, shelves, a variety of feeders and a special section on building feeders and houses from recycled materials. (SC)

## Fungus Gnats Are Nuisance Often Found in Soil of Houseplants

Adult fungus gnats are delicate, gray, dark-gray, or black fly-like insects about an eighth-inch long. They are often seen running over the wet soil surface of houseplants. They also are seen as you water when they swarm up out of the plant. Fungus gnats are attracted to light and in a severe infestation will swarm over the

windows.

Adult fungus gnats do not damage plant materials but are objectionable and a nuisance to the homeowner. The immature fungus gnat lives in the soil and are white, translucent larvae with shiny black heads. The larvae feed on any organic matter and can attain a length of about a forth-inch.

Female fungus gnats lay up

to 300 eggs on the soil surface which hatch in five to six days. Plants grown in a growing media containing a high percentage organic matter such as peat will have more problems with fungus gnats.

Once fungus gnat adults and larvae are discovered on the plant, a non-chemical control can be achieved, but it will take some patience. For infested

plants, allow the soil to thoroughly dry between watering. This will kill the larvae through desiccation as well as help prevent future problems.

The best way to prevent new or future infestations of fungus gnats is to follow proper watering practices for your plants. Houseplants in the winter normally do not require as much water as at other times of the

year. Fungus gnats are more of a problem in the winter, most likely due to over zealous watering. Whenever possible, allow soil surfaces to dry completely between watering. A wet environment is an open invitation to fungus gnats as well as a host of other problems such as root rot and stem rot. (MJF)