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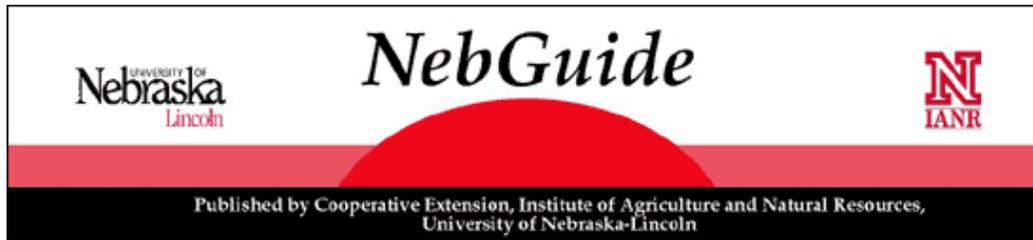


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Tree Squirrels and Their Control

This NebGuide describes tree squirrel biology and behavior and characterizes the types of damage they cause. It suggests control methods and equipment and describes legal restrictions.

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- [Tree Squirrel Facts](#)
- [Economic Importance](#)
- [Controlling Damage](#)
- [Additional Sources of Information](#)

Tree squirrels are known for their bushy tails and their ability to climb high into trees. The eastern fox squirrel (*Sciurus niger*) is the most common tree squirrel in Nebraska (*Figure 1*). It is common throughout the state. The eastern gray squirrel (*Sciurus carolinensis*) occurs only in the extreme southeastern portion of Nebraska. The southern flying squirrel (*Glaucomys volans*) occurs uncommonly and only in southeastern Nebraska in the forested Missouri River bluffs and, possibly, along associated drainages (*Figure 1*).

Tree Squirrel Facts

Fox squirrels are about 18 to 24 inches long from nose to tip of tail. They weigh about 2 pounds and have a large, bushy tail with yellow-tipped hairs. Fox squirrels are usually a grizzled rusty brown on top and buff to bright rust below. Fox squirrels can vary in color from silver-gray to black.

Gray squirrels are about 17 to 19 inches long from nose to tip of tail. They are typically gray on top with buff underfur, although some have blackish fur. Their bushy tails are gray with silvery-tipped hair. Gray squirrels are a pale gray on their underparts.

Flying squirrels are much smaller (9 to 10 inches long including tail) than fox and gray squirrels and have a membrane of skin that extends from the wrist of the front leg to the ankle of the hind leg. They have a horizontally flattened tail that serves as a rudder during glides. Flying



Figure 1. Eastern squirrel and southern flying squirrel.

(Photo credit: Frank Andelt, Nebraska Game and Parks Commission)

squirrels have large eyes. Their fur is long and silky gray to brown on their back and creamy white on their belly. Flying squirrels rarely cause damage and are fully protected in Nebraska.

Flying squirrels are most active at night, while both fox and gray squirrels are most active in morning and late afternoon.

Adult fox squirrels breed during December and January, and sometimes again in early summer. They dwell primarily in tree cavities and leaf nests. About three to six young are born after a 45-day gestation period. Each newborn squirrel weighs about 1/2 ounce. The young are weaned at 3 months of age. Fox squirrels do not hibernate, although they spend much time in their nests during the winter. Fox squirrels generally live from four to seven years but can live as long as 12 years.

Fox squirrels eat mostly fruits, nuts and buds of trees. Field corn and soybeans are eaten in the fall if available. Squirrels occasionally eat berries, insects, fungi and carrion. Fox squirrels are prey to hawks, owls, snakes and many ground predators.

Eastern gray squirrels have a litter of two to three young in spring. Another litter is born in late summer. The young are weaned at 50 days but those in the second litter stay with the female over the winter. Acorns and other nuts are the main food of gray squirrels. Eastern gray squirrels nest in tree cavities or leaf nests in mature trees.

Southern flying squirrels breed during late winter and again in early summer. A single litter usually produces three to four young.

Flying squirrels prefer to eat acorns and other nuts, seeds, fruits, berries, buds, flower blossoms and tree bark. Occasionally, insects, bird eggs and nestlings, mice and carrion are eaten.



Figure 3. Tree bark is commonly stripped by squirrels during winter.

Economic Importance

Tree squirrels are an attractive quarry to hunters everywhere. In Nebraska, about 11,000 squirrel hunters have harvested 50,000 tree squirrels each year during the last decade. In addition to hunting, squirrels are valued for their fur and meat. Some people enjoy squirrel watching in public parks and in their own yards.

Controlling Damage

A survey of the National Pest Control Association voted the tree squirrel as the number one nuisance animal in the United States. Tree squirrels can cause a variety of problems, including damage to trees, flowers, lawns, gardens, vehicles and homes (*Figure 3*). They eat acorns, nuts, fruit or vegetables in home gardens and become a nuisance at bird feeders. Squirrels can cause extensive damage to attic insulation or walls and gnaw on electrical wires in homes and vehicles, creating a fire hazard.

Fox and gray squirrels normally crush the shells of nuts to enter them. Flying squirrels usually cut a smooth circular or oval opening in the shell wall. On heavy shells of larger nuts, flying squirrels will make a second opening or remove an entire end.

Problem squirrels at bird feeders

At bird feeders, tree squirrels consume bird seed and suet, disrupt the birds feeding there and gnaw on the feeders. Tree squirrels that are allowed to congregate at bird feeders also can spread sarcoptic mange among themselves.

Despite efforts by bird watchers, squirrels usually can gain access to bird feeders. An expert that tests bird feeders for resistance to squirrels at Cornell University says "A grey squirrel can jump 8 feet sideways, 4 feet straight up, and down 15 feet, then hang on where it lands." Eastern fox squirrels have similar abilities and present similar challenges.

Avoid hanging bird feeders from trees. Instead, use a large-diameter metal pole and baffle to elevate the bird feeder at least 5 feet off the ground (*Figure 3*).

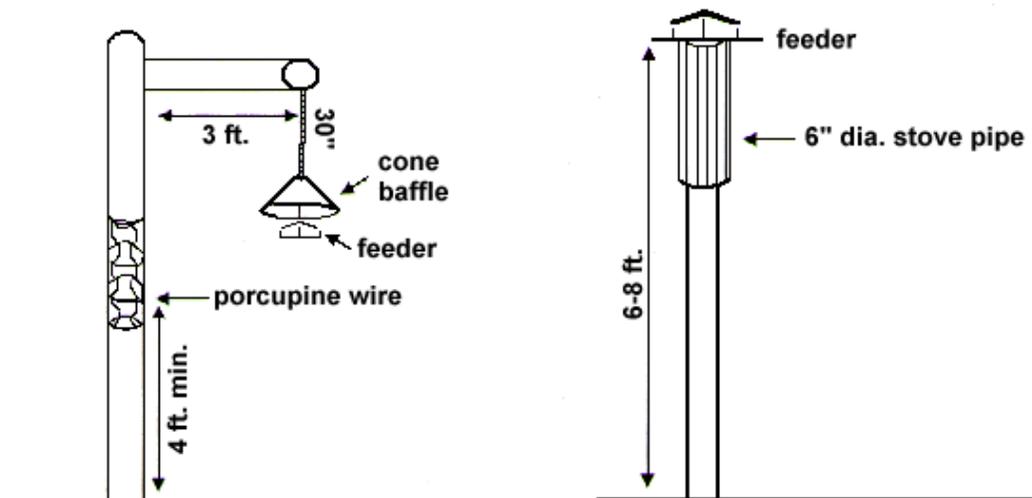


Figure 3. Two designs for squirrel-resistant bird feeders.

The metal baffle looks like a large dunce cap. Hang the bird feeder by a chain from an arm of the pole and place the baffle over it. Alternatively, metal flashing or stove pipe can be placed on poles below platform bird feeders. (See the NebGuide G97-1332, *Backyard Wildlife — Tips for Success*, for other designs.)

Bird feeders also can be hung from a horizontal wire with plastic pipe sleeves as protection on either side (see section *Preventing Squirrel Travel on Wires*). Greased poles and sliding two-part poles usually fail.

Alternatively, one can enclose an entire bird feeder in 2-inch mesh or poultry netting to allow small birds to enter, but excluding larger squirrels.

You also can use foods to attract squirrels from bird feeders. Inexpensive foods like native grains (corn, soybeans), nuts (peanuts, walnuts, acorns) or seeds (honey locust, Kentucky coffeetree, osage-orange fruits) can be placed in special feeders away from bird feeders. Feeders with movable parts may attract squirrels away from bird feeders. Capsaicin is marketed as a bird seed repellent that can be mixed with seeds at bird feeders. This hot pepper extract deters most mammals.

Unwanted squirrels in buildings

Fox squirrels damage attics by chewing through electrical wires and soiling or tearing insulation. Evidence of fox and gray squirrels inside attics include noise from gnawing or running during the day. In contrast, flying squirrels and rats can be heard squeaking and making noise during the night. Other signs of squirrels include droppings, gnawed holes, leaves, twigs, shells, hulls, pits or nesting materials inside an attic. Tree squirrel tracks can be distinguished from the splayed toes in the tracks of rats (*Figure 4*).

Squirrels can squeeze through holes 1 1/2 inches in diameter or gnaw through smaller holes to gain access to

buildings. Fox squirrels can climb vertical brick or masonry walls that have a roughened surface. They can enter through vents, chimneys, broken windows, knotholes and construction gaps under eaves or gables. Tree squirrels most often enter attics and spaces between walls and floors.

To reduce squirrel problems in buildings, limit their access by closing all openings (*Figure 5*). Even holes that are too small for squirrels should be closed. Metal flashing, hail screen, and copper wool usually discourage gnawing.

We do not recommend attempting to capture squirrels by hand. They are very evasive and have a powerful bite. If a squirrel is seen entering a building, use odor repellents or scare tactics and lights to drive them out. If these don't work, create one-way doors made of 4-inch diameter plastic pipe placed at a 45 degree angle downward from the hole to allow squirrels to escape. You may need to use a box or cage trap to remove squirrels. Make sure that all squirrels are outside the building before making it squirrel proof by closing all the openings.



Figure 4. Tree squirrels typically hop, placing their hind feet forward of their front feet.

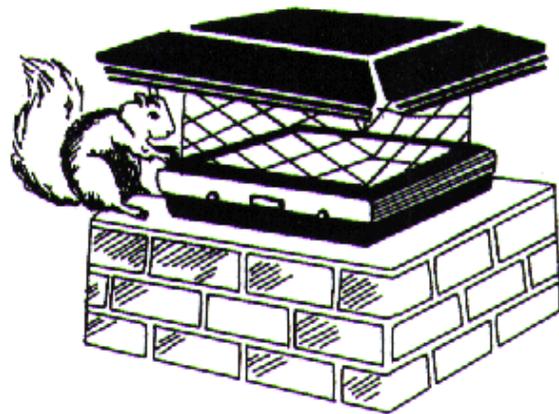


Figure 5. Chimney excluder

Excluding squirrels from gardens and lawns

Tree squirrels cause a variety of damage to gardens, flowers and lawns. They chew on spring-planted potted plants, bury nuts in turf or landscaped areas, dig up seeds and bulbs of garden vegetables and flowers, and eat ripened fruits and grains.

Wire mesh fences topped with electrified wire or mesh enclosures may be practical for keeping squirrels out of small areas. Electrified wires are not recommended for use where children or pets occur.

Taste repellents like Ro-pel and capsaicin can be used to treat seeds, bulbs and flowers. Polybutenes are sticky materials that repel squirrels by touch, but they are only marginally effective and are messy to use.

Preventing squirrel travel on utility line wires

Disc baffles and pipe sleeves can be used to protect trees, transformers, bird feeders and other aerial sites that have horizontal wires leading to them (*Figure 6*). Cut the plastic pipe lengthwise,

spread it open, and place it over the wire. The sleeves should fit loosely so they rotate as the squirrel tries to traverse them. Sleeves should be at least 18 to 24 inches long.

Metal collars can be used to encircle trees and power poles to prevent squirrel travel. Collars should be at least 2 feet wide and placed 6 to 8 feet above the ground. Collar edges should be overlapped and connected by springs to allow for tree growth.

Modifying the habitat

Squirrels can be prevented from climbing trees and gaining access to roofs by trimming limbs 6 to 8 feet away from buildings. Overhanging limbs may require a greater amount of trimming.

Trapping squirrels

Cage traps for squirrels should be 18 to 24 inches long with a 6 x 6 inch door. Place traps outside and very near the squirrel's entry hole. If placed on a roof, traps should be securely fastened and protected from extremes of heat or cold by a cover that is not accessible to the squirrel as it reaches through the cage (*Figure 7*). Bait the trap with corn, peanut butter, pecan pieces, orange, apple or nuts. Urban residents should notify neighbors and check with authorities before they do trapping. Traps should be checked twice daily.

Shooting squirrels

Squirrels that are causing damage in rural areas can be safely removed by shooting with a shotgun or small-caliber rifle. It is not advisable to shoot squirrels in urban areas because of the obvious dangers to animals and people. Also, most municipalities have ordinances against the discharge of firearms within the city limits.

Squirrels and disease

Fox squirrels are susceptible to parasites, including ticks, fleas, bot flies and mange mites. The latter cause a disease called sarcoptic mange that produces scabs and severe hair loss. The scabs become thick and wrinkled, giving the squirrel a startling appearance. The disease can cause death by exposure. Sarcoptic mange mites typically are species-specific so mange does not ordinarily spread from squirrels to people or pets. Report to authorities any squirrel that acts extremely aggressive or is convulsive.

Help with damage situations

Squirrels that are causing damage or are suspected of carrying disease can be reported to the municipal authorities or to the nearest conservation officer of the Nebraska Game and Parks Commission. Local humane societies and municipal animal control agents sometimes assist with squirrel damage problems.

Nebraska laws that relate to tree squirrels

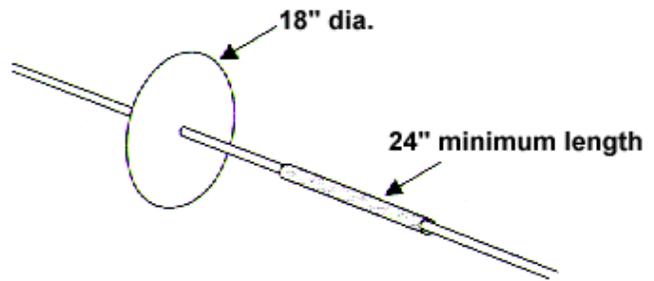


Figure 6. Disc baffle and pipe sleeves to prevent squirrels from traveling on utility line wires..

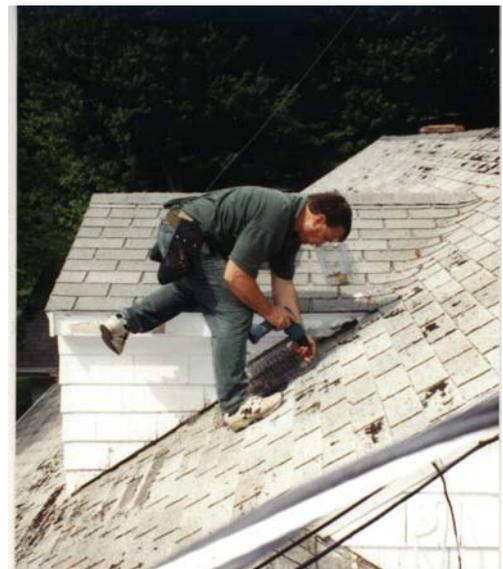


Figure 7. A professional placing squirrel cage traps on roof.
(Photo credit: W.C.T. Magazine.)

1. Fox and gray squirrels are classified as small game animals and can be taken by individuals having a small game hunting permit during the hunting season (typically August 1 to January 31). Letters of authorization to take tree squirrels out of season are sometimes issued for damage situations by the Nebraska Game and Parks Commission.
2. Municipal laws are usually more restrictive than state laws in tree squirrel control.
3. Southern flying squirrels are fully protected as a threatened species in Nebraska because of their limited range and low numbers.

Additional Sources of Information

The *Prevention and Control of Wildlife Damage* handbook contains a directory of manufacturers, formulators and distributors of squirrel control products. Included are addresses and telephone numbers of companies that sell squirrel baffles, chimney excluders, repellents, and traps.

Information on ordering the two-volume handbook and compact disk is available online at <http://www.ianr.unl.edu/pubs/handbook/> or by writing:

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