



Chipmunk & Ground Squirrel

Ecology & Damage Management

Chipmunks and ground squirrels are common rodents in Wisconsin. They are active burrowers during warm months of the year, and hibernate during the winter. Because they do not enter a deep hibernation, they may venture out on relatively warm, sunny winter days.



Eastern chipmunk

DESCRIPTION

Eastern Chipmunk

The Eastern chipmunk is the larger of Wisconsin's two chipmunk species. It is found statewide, and it averages 10 inches in total length and weighs about 3 ounces. It has rusty brown fur on the back and sides, and a white underbelly and chin. Two tan and five black stripes run down its back from neck to rump. There are two tan stripes and two faded black stripes on the sides of its face as well.

Least Chipmunk

The least chipmunk is generally found only in the northern half of Wisconsin. It averages 8 inches long (including its tail, which can be equivalent to the length of its body) and weighs about 2 ounces. It has stripes along its back and head similar to those of the Eastern chipmunk. However, the least chipmunk's stripes continue to the base of its tail instead of ending at the rump and its facial stripes are more pronounced than those of the Eastern chipmunk.

Thirteen-lined Ground Squirrel

The thirteen-lined ground squirrel (also known as the thirteen-liner or spotted gopher) is found in all but the northernmost counties in Wisconsin. It is about 10 inches long (including a 3-inch-long tail), and it can weigh

anywhere from 5 to 9 ounces. It has brown fur and a white underbelly and 13 alternating light and dark stripes or dots on its back. Aside from the obvious markings on their backs, the easiest way to tell the difference between this species and chipmunks is to look at the head. Thirteen-lined ground squirrels do not have stripes along the side of the head as chipmunks do. Another way is to watch their tails when they run. Ground squirrels run with their tails straight out, and chipmunks run with tails upright.

Franklin's Ground Squirrel

The Franklin's ground squirrel is much larger than the thirteen-lined ground squirrel or the chipmunks. It only has a small population in southwestern Wisconsin, and is a species of concern. It has an average body length of 10 inches, and a tail about 5 inches long. Its grayish brown fur has dark speckles, giving it a spotted look. Due to its low population in Wisconsin, it is unlikely to cause extensive damage. Because this animal is a species of special concern in Wisconsin, please contact your local Wisconsin Department of Natural Resources office if any are present on your property.



Franklin's ground squirrel

Tom Schulte, WDNR

HABITS AND HABITAT

CHIPMUNKS

Behavior

Chipmunks are diurnal, but they are most active during early morning and late afternoon. They are solitary animals except during courtship and when rearing young. They are active burrowers. Their main tunnels are 20 to 30 feet long, but they dig more complex burrow systems where cover is sparse. Burrows normally include a nesting chamber, a few food storage chambers, isolated escape tunnels and other miscellaneous areas that branch off the main tunnel. During winter and late fall, chipmunks enter hibernation; however, it is not deep hibernation and they may be active on warm, sunny days. They generally emerge in late March.

Reproduction

Eastern and least chipmunks mate once a year, during early spring shortly after emerging from hibernation. They typically have only one litter of up to seven young, which are born in May or June. Adults live up to three years in the wild. Least chipmunks typically mate once a year, from March to April. They have a litter of two to seven young in April or May. A second litter can be produced in the fall, but this is not common.

Food resources

The diet of chipmunks consists of various kinds of nuts, berries and seeds, but they also eat mushrooms, insects and carrion. They are also known to prey on small birds and their eggs. Chipmunks often cache food in their burrow system to prepare for hibernation. A single food compartment may hold around nine gallons of food.

Habitat

Eastern chipmunks generally live in mature woodlands and woodlot edges, but they also inhabit areas in and around suburban and rural homes. Least chipmunks typically inhabit more open or low-shrub areas. They may also be found in woodlands and suburban areas.

GROUND SQUIRRELS

Behavior

Ground squirrels are burrowing mammals like chipmunks. Their burrows are usually 6 feet deep, 15 to 20 feet long, and have many entrances. They may also use and improve abandoned burrows of other mammals. Most ground squirrels return to their nests within the burrows at night, during hot summer days, and when threatened by predat-

tors. During the winter, ground squirrels go into deep hibernation. This is usually during the coldest parts of winter. In the spring, males usually emerge before females.

Reproduction

Ground squirrels mate soon after they have emerged from hibernation during late March to early May. Up to ten young are born in late April to late June. Usually only one litter is produced each year.

Food resources

Ground squirrels prefer to eat fresh green vegetation, such as grasses and forbs. As autumn passes, they switch to dry foods, such as seeds, in preparation for hibernation.

Most store large quantities of food in caches.

Habitat

Ground squirrels prefer open grasslands and are often found in upland grain fields, meadows, irrigated pastures, and around residential and commercial dwellings.



Thirteen-lined ground squirrel

Alfred Viola, Northeastern University, Bugwood.org

LEGAL STATUS

Neither federal nor Wisconsin state law protects chipmunks or thirteen-lined ground squirrels, so landowners are allowed to manage these species using nonlethal and lethal techniques whenever damage is occurring. Franklin's ground squirrels are labeled as a species of concern in Wisconsin. It is recommended that you contact the Wisconsin Department of Natural Resources before any lethal action is taken against Franklin's ground squirrels.

IDENTIFYING RODENT DAMAGE

Ground squirrels and chipmunks are considered relatively minor agricultural pests but they can cause problems in other areas. They can cause structural damage by burrowing under patios, stairs, retention walls or foundations. They may also consume flower bulbs, seeds or seedlings, as well as birdseed, grass seed and pet food that is not stored in rodent-proof storage containers. They gnaw on wooden structures, eat garden vegetables, fruits and flowers, gnaw on tree bark and buds, dig up planted seeds, and feed on seedlings. Their burrow systems have been known to weaken and collapse ditch banks and canals, and alter irrigation systems.

CONTROLLING THE DAMAGE

Because the chipmunk species and the thirteen-lined ground squirrel cause similar damage, management and damage control options are similar.

NONLETHAL METHODS

Exclusion

Excluding chipmunks and ground squirrels from buildings can sometimes be easy and effective. Caulking, hardware cloth with $\frac{1}{4}$ -inch mesh, or other rodent-proof materials can be used to close openings into buildings. Hardware cloth also may be used to protect seeds and bulbs. After planting, lay hardware cloth directly on top of the soil and then top dress the hardware cloth with a thin layer of soil. The cloth should extend at least one foot past each margin of the planting. Sheet metal collars are sometimes used around tree trunks to prevent damage to the base of trees or to keep animals from climbing trees to eat fruit or nut crops. Where high populations of the animals exist, exclusion often is less expensive than trapping. Exclusion may be impractical in cases where the burrowing rodents can dig under or climb over the excluded area.

Repellents

Naphthalene flakes (“moth flakes”) may repel chipmunks from attics, seasonal cabins, and storage areas. To be effective, a large amount of flakes needs to be distributed. It is important to use caution when using this repellent in occupied buildings, as the odor may also be irritating to people or pets.

Cultural methods and habitat modification

When large populations of chipmunks and ground squirrels live nearby, seed and other potential food items should be stored in rodent-proof cans, and woodpiles should be placed carefully. It is best to store wood away from buildings or other structures, vegetation or the edge of a field. It is challenging to detect chipmunk burrows if woodpiles and debris offer sufficient protection.

Landscape plants such as trees, shrubs and ground covers should not be located in a continuous planting that connects wooded areas or field edges with buildings, which would provide the rodents with a covered



Burrow of the Thirteen-lined ground squirrel with trails of sand.

Wildlife Control Consultant, LLC

corridor. Place vegetation away from sidewalks, driveways and foundations to discourage rodents from burrowing next to those structures. Bird feeders can attract rodents as well, and should not be put too close to the house, garden or any other area you wish to protect.

Nonlethal trapping

Live trapping may reduce chipmunk and ground squirrel

populations in some home situations. Common live-traps can be purchased at local hardware stores and garden centers. A variety of baits can be used to lure chipmunks and ground squirrels into live traps, including peanut butter, nutmeats and pumpkin or sunflower seeds. Place the trap along pathways or near burrow entrances. The trap should be securely placed so there is no movement of the trap when the animal enters. Releasing live-trapped wildlife on property you don't own requires permission from the property owner or manager.

LETHAL METHODS

Shooting

Shooting chipmunks and thirteen-lined ground squirrels with a small caliber rifle, pellet gun or shotgun is legal in Wisconsin. It is legal on property you own or occupy as long as discharging a weapon is legal within the municipal boundaries where the damage is occurring.

Toxicants

There are no toxic baits registered for controlling chipmunks. Zinc phosphide is a registered pesticide legal for controlling 13-lined ground squirrels in Wisconsin.

Fumigants

Fumigants are generally ineffective because it is difficult to apply fumigant effectively throughout the complex burrows.

Lethal trapping

Common rat snap traps can be used to kill chipmunks if these traps are isolated from children, pets or non-target wildlife. They can be set in the same manner as live traps. Peanut butter is a common bait. Hard baits (for example, nutmeats) should be tied to the trap trigger.

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This fact sheet is part of a series designed to help you successfully manage wildlife damage problems on your property. The series includes additional publications which focus on controlling damage from specific animals, plus an introduction to wildlife damage management.

ACKNOWLEDGEMENTS AND FURTHER READING

All of the following were used to compile the above information and can provide further details on chipmunk and ground squirrel ecology and damage management:

Askham, L. R. *Franklin, Richardson, Columbian, Washington, and Townsend Ground Squirrels*. Online at <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1023&context=icwdmhandbook>

Burt, W. H. and R. P. Grossenheider. 1976. *A Field Guide to the Mammals*, (3d ed., pg. 289). Houghton Mifflin Co., Boston, MA.

Cleary, E. C. and Craven, S. R. *Thirteen-lined Ground Squirrels and their Control*. The Internet Center for Wildlife Damage Management, online at <http://icwdm.org/handbook/rodents/13linedgroundsquirrel.asp>

Craven S. R. *Ground Squirrels, their Ecology and Control*. Online at <http://learningstore.uwex.edu/Ground-Squirrels-Their-Ecology-and-Control-P626.aspx>

Jackson, H. H. T. 1961. *The Mammals of Wisconsin*, (pp. 130-142). University of Wisconsin Press, Madison, WI.

Loven, J. 1999. *Animal Damage Management: Chipmunks*. Online at <http://extension.entm.purdue.edu/publications/ADM-2.pdf>

Schwartz, C. W. & E. R. Schwartz. 1981. *The Mammals of Missouri*, (pg. 356) University of Missouri Press, Columbia, MO.

Williams, D. E. and Corrigan, R. M. 1994. *Chipmunks*. The Internet Center for Wildlife Damage Management, online at http://icwdm.org/handbook/rodents/ro_b13.pdf

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Authors: David Drake, UW-Extension Wildlife Specialist/
Associate Professor, Department of Forest and
Wildlife Ecology, University of Wisconsin-Madison
Carolyn Tappe, University of Wisconsin
Ryan Klausch, University of Wisconsin
Jason Suckow, USDA-APHIS-Wildlife Services

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