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# WOODCHUCKS

Fig. 1. Woodchuck, *Marmota monax*



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## Damage Prevention and Control Methods

### Exclusion

Buried welded or woven wire fences.  
Single-strand electric fences.

### Frightening Devices

Scarecrows and other effigies.

### Repellents

None are registered.

### Toxicants

None are registered.

### Fumigants

Gas cartridges.  
Aluminum phosphide.

### Trapping

Live traps.  
No. 2 leghold traps.  
Conibear® traps.

### Shooting

Effective where legal and safe.

## Identification

The woodchuck (*Marmota monax*, Fig. 1), a member of the squirrel family, is also known as the "ground hog" or "whistle pig." It is closely related to other species of North American marmots. It is usually grizzled brownish gray, but white (albino) and black (melanistic) individuals can occasionally be found. The woodchuck's compact, chunky body is supported by short strong legs. Its forefeet have long, curved claws that are well adapted for digging burrows. Its tail is short, well furred, and dark brown.



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## PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1994

Cooperative Extension Division  
Institute of Agriculture and Natural Resources  
University of Nebraska - Lincoln

United States Department of Agriculture  
Animal and Plant Health Inspection Service  
Animal Damage Control

Great Plains Agricultural Council  
Wildlife Committee

Both sexes are similar in appearance, but the male is slightly larger, weighing an average of 5 to 10 pounds (2.2 to 4.5 kg). The total length of the head and body averages 16 to 20 inches (40 to 51 cm). The tail is usually 4 to 7 inches (10 to 18 cm) long. Like other rodents, woodchucks have white or yellowish-white, chisel-like incisor teeth. Their eyes, ears, and nose are located toward the top of the head, which allows them to remain concealed in their burrows while they check for danger over the rim or edge. Although they are slow runners, woodchucks are alert and scurry quickly to their dens when they sense danger.

## Range

Woodchucks occur throughout eastern and central Alaska, British Columbia, and most of southern Canada. Their range in the United States extends throughout the East, northern Idaho, northeastern North Dakota, southeastern Nebraska, eastern Kansas, and northeastern Oklahoma, as well as south to Virginia and northern Alabama (Fig. 2).

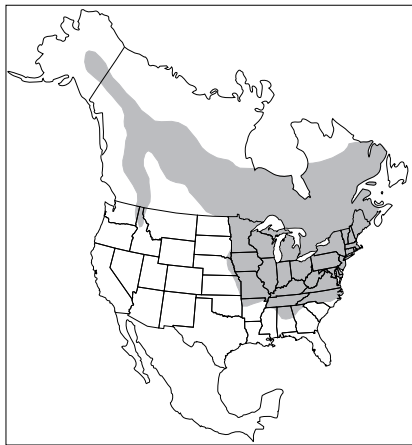


Fig. 2. Range of the woodchuck in North America.

## Habitat

In general, woodchucks prefer open farmland and the surrounding wooded or brushy areas adjacent to open land. Burrows commonly are located in fields and pastures, along fence rows, stone walls, roadsides, and near building foundations or the bases of trees. Burrows are almost always found in or near open, grassy meadows or fields. Woodchuck burrows are distinguished by a large mound of excavated earth at the main entrance. The main opening is approximately 10 to 12 inches (25 to 30 cm) in diameter. There are two or more entrances to each burrow system. Some secondary entrances are dug from below the ground and do not have mounds of earth beside them. They are usually well hidden and sometimes difficult to locate (Fig. 3). During spring, active burrows can be located by the freshly excavated earth at the main entrance. The burrow system serves as home to the woodchuck for mating, weaning young, hibernating in winter, and protection when threatened.

## Food Habits

Woodchucks prefer to feed in the early morning and evening hours. They are strict herbivores and feed on a variety of vegetables, grasses, and legumes. Preferred foods include soybeans, beans, peas, carrot tops, alfalfa, clover, and grasses.

## General Biology, Reproduction, and Behavior

Woodchucks are primarily active during daylight hours. When not feeding, they sometimes bask in the sun during the warmest periods of the day. They have been observed dozing on fence posts, stone walls, large rocks, and fallen logs close to the burrow entrance. Woodchucks are good climbers and sometimes are seen in lower tree branches.

Woodchucks are among the few mammals that enter into true hibernation. Hibernation generally starts in late fall, near the end of October or early November, but varies with latitude. It continues until late February and March. In northern latitudes, torpor can start earlier and end later. Males usually come out of hibernation before females and subadults.

Males may travel long distances, and occasionally at night, in search of a mate. Woodchucks breed in March and April. A single litter of 2 to 6 (usually 4) young is produced each season after a gestation period of about 32 days. The young are born blind and hairless. They are weaned by late June or early July, and soon after strike out on their own. They frequently occupy abandoned dens or burrows. The numerous new burrows that appear during late summer are generally dug

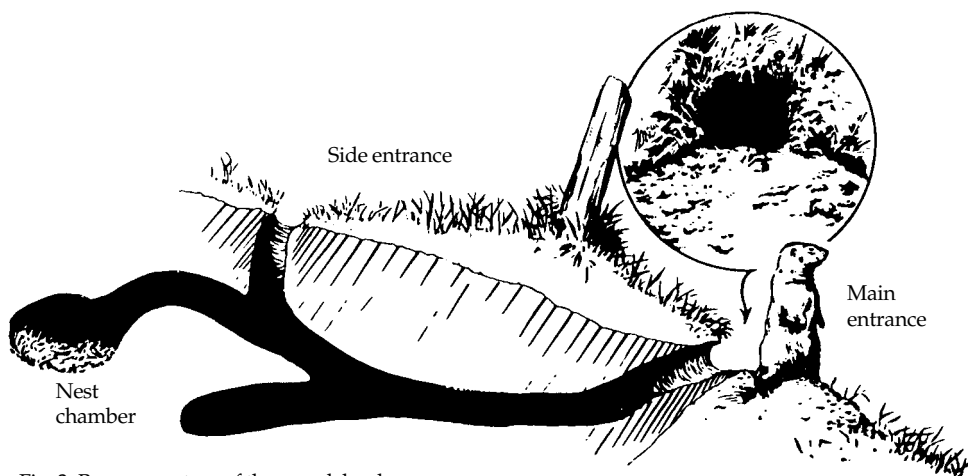


Fig. 3. Burrow system of the woodchuck.

by older woodchucks. The life span of a woodchuck is about 3 to 6 years.

Woodchucks usually range only 50 to 150 feet (15 to 30 m) from their den during the daytime. This distance may vary, however, during the mating season or based on the availability of food. Woodchucks maintain sanitary den sites and burrow systems, replacing nest materials frequently. A burrow and den system is often used for several seasons. The tunnel system is irregular and may be extensive in size. Burrows may be as deep as 5 feet (1.5 m) and range from 8 to 66 feet (2.4 to 19.8 m) in total length (Fig. 3). Old burrows not in use by woodchucks provide cover for rabbits, weasels, and other wildlife.

When startled, a woodchuck may emit a shrill whistle or alarm, preceded by a low, abrupt "phew." This is followed by a low, rapid warble that sounds like "tchuck, tchuck." The call is usually made when the animal is startled at the entrance of the burrow. The primary predators of woodchucks include hawks, owls, foxes, coyotes, bobcats, weasels, dogs, and humans. Many woodchucks are killed on roads by automobiles.

## Damage

On occasion, the woodchuck's feeding and burrowing habits conflict with human interests. Damage often occurs on farms, in home gardens, orchards, nurseries, around buildings, and sometimes around dikes. Damage to crops such as alfalfa, soybeans, beans, squash, and peas can be costly and extensive. Fruit trees and ornamental shrubs are damaged by woodchucks as they gnaw or claw woody vegetation. Gnawing on underground power cables has caused electrical outages. Damage to rubber hoses in vehicles, such as those used for vacuum and fuel lines, has also been documented. Mounds of earth from the excavated burrow systems and holes formed at burrow entrances present a hazard to farm equipment, horses, and riders. On occasion, burrowing can weaken dikes and foundations.

## Legal Status

In most states, woodchucks are considered game animals. There is usually no bag limit or closed season. In damage situations, woodchucks are usually not protected. The status may vary from state to state, depending on the control technique to be employed. Consult with your state wildlife department, USDA-APHIS-Animal Damage Control representative, or extension agent before shooting and/or trapping problem individuals.

## Damage Prevention and Control Methods

### Exclusion

Fencing can help reduce woodchuck damage. Woodchucks, however, are good climbers and can easily scale wire fences if precautions are not taken. Fences should be at least 3 feet (1 m) high and made of heavy poultry wire or 2-inch (5-cm) mesh woven wire. To prevent burrowing under the fence, bury the lower edge 10 to 12 inches (25 to 30 cm) in the ground or bend the lower edge at an L-shaped angle leading outward and bury it in the ground 1 to 2 inches (2.5 to 5 cm). Fences should extend 3 to 4 feet (0.9 to 1.2 m) above the ground. Place an electric wire 4 to 5 inches (10 to 13 cm) off the ground and the same distance outside the fence. When connected to a UL-approved fence charger, the electric wire will prevent climbing and burrowing. Bending the top 15 inches (38 cm) of wire fence outward at a 45° angle will also prevent climbing over the fence. Fencing is most useful in protecting home gardens and has the added advantage of keeping rabbits, dogs, cats, and other animals out of the garden area. In some instances, an electric wire alone, placed 4 to 5 inches (10 to 13 cm) above the ground, has deterred woodchucks from entering gardens. Vegetation in the vicinity of any electric fence should be removed regularly to prevent the system from shorting out.

## Frightening Devices

Scarecrows and other effigies can provide temporary relief from woodchuck damage. Move them regularly and incorporate a high level of human activity in the susceptible area.

## Repellents

None are registered.

## Toxicants

None are registered for woodchuck control.

## Fumigants

### *Gas cartridge (carbon monoxide).*

The most common means of woodchuck control is the use of commercial gas cartridges. They are specially designed cardboard cylinders filled with slow-burning chemicals. They are ignited and placed in burrow systems, and all entrances are sealed. As the gas cartridges burn, they produce carbon monoxide and other gases that are lethal to woodchucks. Gas cartridges are a General Use Pesticide and are available from local farm supply stores, certain USDA-APHIS-ADC state and district offices, and the USDA-APHIS-ADC Pocatello Supply Depot. Directions for their use are on the label and should be carefully read and closely followed (see information on gas cartridges in the **Pesticides and Supplies and Materials** sections).

Be careful when using gas cartridges. Do not use them in burrows located under wooden sheds, buildings, or near other combustible materials because of the potential fire hazard. Gas cartridges are ignited by lighting a fuse. They will not explode if properly prepared and used. Caution should be taken to avoid prolonged breathing of fumes.

Each burrow system should be treated in the following manner:

1. Locate the main burrow opening (identified by a mound of excavated soil) and all other secondary entrances associated with that burrow system.

2. With a spade, cut a clump of sod slightly larger than each opening. Place a piece of sod over each entrance except the main entrance. Leave a precut sod clump next to the main entrance for later use.
3. Prepare the gas cartridge for ignition and placement following the written instructions on the label.
4. Kneel at the main burrow opening, light the fuse, and immediately place (do not throw) the cartridge as far down the hole as possible.
5. Immediately after positioning the ignited cartridge in the burrow, close the main opening or all openings, if necessary, by placing the pieces of precut sod, grass side down, over the opening. Placing the sod with the grass side down prevents smothering the lit cartridge. Make a tight seal by packing loose soil over the piece of sod. Look carefully for smoke leaking from the burrow system and cover or reseal any openings that leak.
6. Continue to observe the site for 4 to 5 minutes and watch nearby holes. Continue to reseal those from which smoke is escaping.
7. Repeat these steps until all burrow systems have been treated in problem areas.

Burrows can be treated with gas cartridges at any time. This method is most effective in the spring before the young emerge. On occasion, treated burrows will be reopened by another animal reoccupying the burrow system. If this occurs, retreatment may be necessary.

**Aluminum Phosphide.** Aluminum phosphide is a Restricted Use Pesticide and can be applied only by a certified pesticide applicator. Treatment of burrow systems is relatively easy. Place two to four tablets deep into the main burrow. Plug the burrow openings with crumpled newspapers and then pack the openings with loose soil. All burrows must be sealed tightly but avoid covering the tablets with soil. The treatment site should be inspected 24 to 48 hours later and opened burrows should be retreated.

Aluminum phosphide in the presence of moisture in the burrow produces hydrogen phosphide (phosphine) gas. Therefore, soil moisture and a tightly sealed burrow system are important. The tablets are presently approved for outdoor use on noncropland and orchards for burrowing rodents. Tablets should not be used within 15 feet (5 m) of any occupied building or structure or where gases could escape into areas occupied by other animals or humans. Storage of unused tablets is critical — they must be kept in their original container, in a cool, dry, locked, and ventilated room. They must be protected from moisture, open flames, and heat.

The legal application and use of aluminum phosphide for woodchuck control may vary from state to state. Check with your state pesticide registration board, USDA-APHIS-ADC representative, or extension agent when considering use of this material. Aluminum phosphide should always be applied as directed on the label.

### Trapping

**Steel leghold and live traps.** Traps may also be used to reduce woodchuck damage, especially in or near buildings. Both steel leghold and live traps are effective. Trapping should be used in areas where gas cartridges or aluminum phosphide may create a fire hazard or where fumes may enter areas to be protected. Woodchucks are strong animals and a No. 2 steel trap is needed to hold them. Before using steel traps, consult your state wildlife department or USDA-APHIS-ADC representative for trapping regulations. Steel traps should not be employed in areas where there is a possibility of capturing pets or livestock.

Live trapping can sometimes be difficult, but is effective. Live traps can be built at home, purchased from commercial sources (see **Supplies and Materials**), or borrowed. Bait traps with apple slices or vegetables such as carrots and lettuce, and change baits daily. Locate traps at main entrances or major travel lanes. Place guide logs

on either side of the path between the burrow opening and the trap to help funnel the animal into the trap. Check all traps twice daily, morning and evening, so that captured animals may be quickly removed. A captured animal can be relocated to an area with suitable habitat where no additional damage can be caused. The animal can also be euthanized by lethal injection (by a veterinarian or under veterinarian supervision), by shooting, or by carbon dioxide gas.

**Conibear® traps.** Conibear® traps are effective in some situations. A set in a travelway, such as between a wood pile and barn, can be very effective. Sets can also be made at the main entrance of the burrow system. Logs, sticks, stones, and boards should be used to block travelways around the set and/or to lead the animal into the set. No bait is necessary for Conibear® sets. Conibear® 110s, 160s, and 220s are best suited for woodchuck control. Conibears® are well suited for use near or under structures in which fumigants and shooting present a hazard. Conibear® 110s will handle young, small animals, while 160s and 220s will also handle larger adults.

Conibear® traps kill the animal quickly and care should be taken to avoid trapping domestic animals such as cats and dogs. Some state or local laws prohibit the use of Conibear® traps except in water. Consult your state wildlife department or USDA-APHIS-ADC office for regulations.

### Shooting

In many states, woodchucks are considered game animals. Therefore, if shooting is permitted, a valid state hunting license may be required. In some states there is no closed season, nor is there usually any limit on the number of woodchucks that can be taken by hunters. If shooting can be accomplished safely, landowners and/or hunters can reduce or maintain a low population of woodchucks where necessary. Landowners and hunters should agree on hunting arrangements prior to initiating any shooting activities. Another alternative

would be to have a professional USDA-APHIS-ADC representative do the job. He or she will be familiar with legalities and techniques. Contracting with a Animal Damage Control professional would be especially valuable when and where large numbers of woodchucks are causing serious economic losses. Shooting can be used as a follow-up to other, more substantial control activities.

Rifles with telescopic sights are commonly used in the sport shooting of woodchucks. A variety of calibers can be used, but .22-caliber centerfire rifles are most popular. Occasionally, shotguns are used to eliminate woodchucks that are causing damage. The objective is to remove the animal as humanely as possible without wounding it. Shotgun gauge, range, and shot size should be considered when using this method. Use a 12-gauge with No. 4 to No. 6 shot. The range should be within 25 yards (23 m).

Carefully assess the area behind and around the target for safety. Pellets can ricochet, causing injury or serious damage in background areas. Use of a rifle or shotgun should be conducted only if good shooting conditions exist.

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Figures 1 through 3 from Schwartz and Schwartz (1981), adapted by Jill Sack Johnson.

## For Additional Information

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