University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

The Handbook: Prevention and Control of Wildlife Damage | Wildlife Damage Management, Internet Center for

7-27-1994

Porcupines

Sanford D. Schemnitz
New Mexico State University

Follow this and additional works at: http://digitalcommons.unl.edu/icwdmhandbook

Part of the Environmental Sciences Commons

Schemnitz, Sanford D., "Porcupines" (1994). *The Handbook: Prevention and Control of Wildlife Damage.* Paper 17.
http://digitalcommons.unl.edu/icwdmhandbook/17

This Article is brought to you for free and open access by the Wildlife Damage Management, Internet Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in The Handbook: Prevention and Control of Wildlife Damage by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Sanford D. Schemnitz
Professor of Wildlife Science
New Mexico State University
Las Cruces, New Mexico 88003

PORCUPINES

Fig. 1. Porcupine, *Erethizon dorsatum*

Damage Prevention and Control Methods

Exclusion

Fences (small areas).

Tree trunk guards.

Cultural Methods

Encourage closed-canopy forest stands.

Repellents

None are registered.

Some wood preservatives may incidentally repel porcupines.

Toxicants

None are registered.

Fumigants

None are registered.

Trapping

Steel leghold trap (No. 2 or 3).

Body-gripping (Conibear®) trap (No. 220 or 330).

Box trap.

Shooting

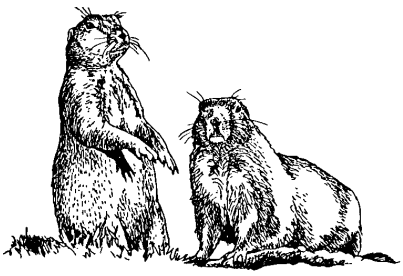
Day shooting and spotlighting are effective where legal.

Other Methods

Encourage natural predators.

Identification

Porcupines (*Erethizon dorsatum*), sometimes called "porkies" or "quill pigs," (Fig. 1) are heavy-bodied, short-legged, slow, and awkward rodents, with a waddling gait. Adults are typically 25 to 30 inches (64 to 76 cm) long and weigh 10 to 30 pounds (4.5 to 13.5 kg). They rely on their sharp, barbed quills (up to 30,000 per individual) for defense.



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

Range and Habitat

The porcupine is a common resident of the coniferous forests of western and northern North America (Fig. 2). It wanders widely and is found from cottonwood stands along prairie river bottoms and deserts to alpine tundra.

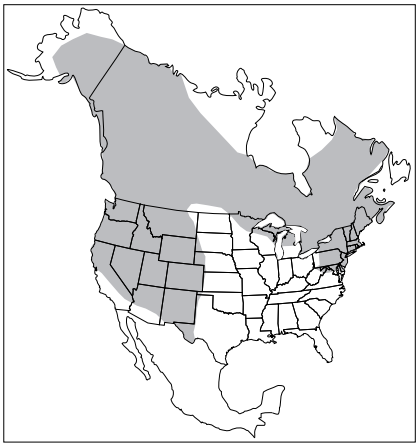


Fig. 2. Range of the porcupine in North America.

Food Habits

Porcupines eat herbaceous plants, inner tree bark, twigs, and leaves, with an apparent preference for ponderosa pine, aspen, willow, and cottonwood. Trees with thin, smooth bark are preferred over those with thick, rough bark. Porcupine feeding is frequently evident and has considerable impact on the cottonwood stands of western river bottoms.

General Biology, Reproduction, and Behavior

Porcupines breed in autumn, and after a 7-month gestation period usually produce 1 offspring in spring. Although the young are capable of eating vegetation within a week after birth, they generally stay with the female through the summer. Juvenile survival rates are high.

Predators of porcupines include coyotes, bobcats, mountain lions, black bears, fishers, martens, great horned owls, and others. Coyote scats (feces) containing large numbers of quills are not unusual. How the quills are maneuvered through the coyote's gastrointestinal tract is a mystery.

Porcupines are active year-round and are primarily nocturnal, often resting in trees during the day. They favor caves, rock slides, and thick timber downfalls for shelter.

Damage and Damage Identification

Clipped twigs on fresh snow, tracks, and gnawings on trees are useful means of damage identification (Fig. 3). Trees are often deformed from partial girdling. Porcupines clip twigs and branches that fall to the ground or onto snow and often provide food for deer and other mammals. The considerable secondary effects of their feeding come from exposing the tree sapwood to attack by disease, insects, and birds. This exposure is important to many species of wildlife because diseased or hollow trees provide shelter and nest sites.

Porcupines occasionally will cause considerable losses by damaging fruits, sweet corn, alfalfa, and small grains. They chew on hand tools and other wood objects while seeking salt. They destroy siding on cabins when seeking plywood resins.

Porcupines offer a considerable threat to dogs, which never seem to learn to avoid them. Domestic stock occasionally will nuzzle a porcupine and may be fatally injured if quills are not removed promptly.

Legal Status

Porcupines are considered nongame animals and are not protected.

Damage Prevention and Control Methods

Exclusion

Fencing small tree plantings, orchards, and gardens is effective in reducing porcupine damage. Electric fences are effective when the smooth electric wire is placed 1 1/2 inches (3.8 cm) above

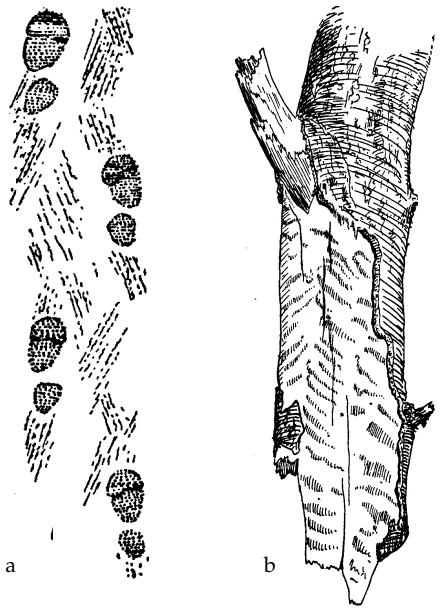


Fig. 3. Porcupine sign: a) tracks showing drag marks of tail; b) toothmarks on tree limbs.

18-inch-high (46-cm) poultry wire. A 4- to 6-inch (10- to 15-cm) electric fence can be enhanced by painting molasses on the wire. Porcupines will climb fences, but an overhanging wire strip around the top of the fence at a 65° angle to the upright wire will discourage them.

Completely enclose small trees with wire baskets or encircle the trunks of fruit and ornamental trees with 30-inch (70-cm) bands of aluminum flashing to reduce damage.

Cultural Methods

Thinned forest stands are vulnerable to porcupine damage because lower vegetation can thrive. Porcupine populations are usually lower in closed canopy stands where understory vegetation is scant.

Repellents

Thiram is registered as a squirrel and rabbit repellent and may incidentally repel porcupines. This material is sprayed or painted on the plants subject to damage. It must be renewed occasionally to remain effective. Common wood preservatives may repel porcupines when applied to exterior plywoods. Avoid using wood preservatives that are metal-salt solutions. These will attract porcupines.

Toxicants

No toxicants can be legally used to control porcupines.

Trapping

Steel leghold traps of size No. 2 or 3 can be used to catch porcupines where legal. Cubby sets with salt baits, trail sets in front of dens, and coyote urine scent post sets near dens and damage activity are effective. Scent post and trail sets must be checked daily to release nontarget animals that might be caught. Leghold traps should be bedded, firmly placed and leveled, and offset slightly to the side of the trail. The trapped porcupine can be shot or killed by a sharp blow to the head.

The No. 220 or 330 Conibear® body-gripping trap can be baited with a salt-soaked material or placed in den entrances to catch and kill porcupines. Care must be taken to avoid taking nontarget animals, since salt attracts many animals. The Conibear® trap does not allow the release of accidental catches. Some states do not allow the use of No. 330 Conibear® traps for ground sets.

Porcupines are rather easy to livetrap with large commercial cage traps (32 x 10 x 12 inches [81 x 25 x 30.5 cm]) or homemade box traps. Place the live trap in the vicinity of damage and bait with a salt-soaked cloth, sponge, or piece of wood. Live traps also can be set at den entrances. Move the porcupine 25 miles (40 km) or more to ensure that it does not return. Since most areas of suitable habitat carry large porcupine populations, relocation of the porcupine often is neither helpful nor humane since the introduced animal may have a poor chance of survival.

Shooting

Persistent hunting and shooting of porcupines can be effective in reducing the population in areas that require protection. Night hunting, where legal, is effective. During winter months, porcupines are active and can be tracked in the snow and shot with a .22-caliber rifle or pistol. Porcupines often congregate around good denning sites and extensively girdle trees in the area. In such places large numbers may be taken by shooting.

Other Considerations

Porcupines are mobile and continually reinvade control areas. Complete control is not desirable since it would require complete removal of porcupines. Try to limit lethal porcupine control to individual animals causing damage by fencing and management of the plant species. In areas of high porcupine populations, plant ornamentals that are not preferred foods. Intensive predator control may encourage porcupine population increases.

Economics of Damage and Control

Economic losses can be considerable from porcupines feeding on forest plantings, ornamentals, and orchards as well as on leather and other human implements. Porcupines generally are tolerated except when commercial timber, high-value ornamental plantings, orchards, or nursery plants are damaged by girdling, basal gnawing, or branch clipping. On occasion, porcupines thin dense, crowded forest stands. Often tree diameter growth is reduced. Their preference for mistletoe as a food is an asset.

The porcupine is acclaimed as a beautiful creature of nature. It is an interesting animal that has an important place in the environment. It is edible and has been used by humans as an emergency food. The quills are used for decorations, especially by Native Americans. The hair, currently used for fly-fishing lures, commands many dollars per ounce. Porcupines are not wary and can be readily observed and photographed by nature lovers. Porcupines may need to be controlled but should not be totally eradicated.

Acknowledgments

Some of the information for this chapter was taken from a chapter by Major L. Boddicker in the 1980 edition of *Prevention and Control of Wildlife Damage.*

Figure 1 by Emily Oseas Routman.

Figure 2 adapted from Burt and Grossenheider (1976) by Jill Sack Johnson.

Figure 3 adapted from Murie (1954) by Renee Lanik, University of Nebraska-Lincoln.

For Additional Information

Burt, W. H., and R. P. Grossenheider. 1976. A field guide to the mammals, 3d ed. Houghton Mifflin Co., Boston. 289 pp.

Clark, J. P. 1986. Vertebrate pest control handbook. California Dep. Food and Agric. Sacramento. 615 pp.

Dodge, W. E. 1982. Porcupine. Pages 355-366 *in* J. A. Chapman and G. A. Feldhamer, eds. Wild mammals of North America: biology, management, and economics. The Johns Hopkins Univ. Press. Baltimore.

Marsh, R. E., and W. E. Howard. 1977. Vertebrate control manual. Pest Control 45:28-31.

Murie, O. J. 1954. A field guide to animal tracks. Houghton Mifflin Co., Boston. 375 pp.

Roze, V. 1989. The North American porcupine. Smithsonian Press, Washington, DC. 261 pp.

Spencer, D. A. 1948. An electric fence for use in checking porcupine and other mammalian crop depredations. J. Wildl. Manage. 12:110-111.

Woods, C. A. 1978. *Erethizon dorsatum*. Mammal. Sp. 29:1-6.

Editors

Scott E. Hygnstrom
Robert M. Timm
Gary E. Larson