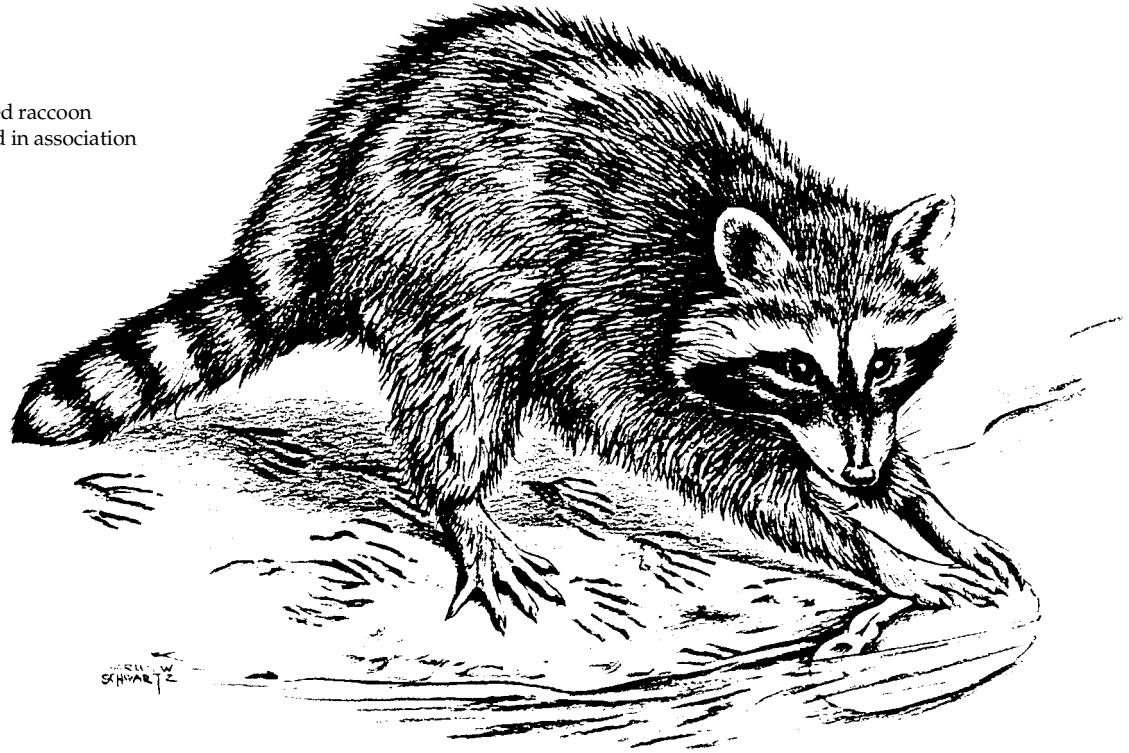


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RACCOONS

Fig. 1. The distinctively marked raccoon (*Procyon lotor*) is usually found in association with water.



Damage Prevention and Control Methods

Exclusion

Usually the best method for coping with almost all types of raccoon damage.

Habitat Modification

Remove obvious sources of food or shelter around the premises; usually not practical as a sole method of controlling damage.

Frightening

Several methods may be effective, but only for a short time.

Repellents, Toxicants, and Fumigants

None are registered.

Trapping

Cage traps, body-gripping, and foothold traps are very effective, especially in conjunction with exclusion and/or habitat modification.

Shooting

Can be very effective, particularly if trained hounds are used to tree the raccoons. Local regulations may apply.

Identification

The raccoon (*Procyon lotor*), also called "coon," is a stocky mammal about 2 to 3 feet (61 to 91 cm) long, weighing 10 to 30 pounds (4.5 to 13.5 kg) (rarely 40 to 50 pounds [18 to 22.5 kg]). It is distinctively marked, with a prominent black "mask" over the eyes and a heavily furred, ringed tail (Fig. 1). The animal is a grizzled salt-and-pepper gray and black above, although some individuals are strongly washed with yellow. Raccoons from the prairie areas of the western Great Plains are paler in color than those from eastern portions of the region.



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

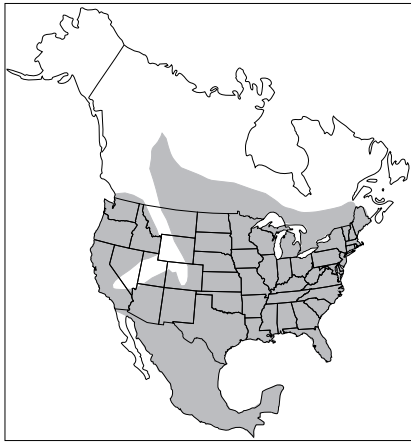


Fig. 2. Distribution of the raccoon in North America.

Range

The raccoon is found throughout the United States, with the exception of the higher elevations of mountainous regions and some areas of the arid Southwest (Fig. 2). Raccoons are more common in the wooded eastern portions of the United States than in the more arid western plains.

Habitat

Raccoons prefer hardwood forest areas near water. Although commonly found in association with water and trees, raccoons occur in many areas of the western United States around farmsteads and livestock watering areas, far from naturally occurring bodies of permanent water. Raccoons den in hollow trees, ground burrows, brush piles, muskrat houses, barns and abandoned buildings, dense clumps of cattail, haystacks, or rock crevices.

General Biology, Reproduction, and Behavior

Raccoons are omnivorous, eating both plant and animal foods. Plant foods include all types of fruits, berries, nuts, acorns, corn, and other types of grain. Animal foods are crayfish, clams, fish, frogs, snails, insects, turtles and their eggs, mice, rabbits, muskrats, and the eggs and young of ground-nesting

birds and waterfowl. Contrary to popular myth, raccoons do not always wash their food before eating, although they frequently play with their food in water.

Raccoons breed mainly in February or March, but matings may occur from December through June, depending on latitude. The gestation period is about 63 days. Most litters are born in April or May but some late-breeding females may not give birth until June, July, or August. Only 1 litter of young is raised per year. Average litter size is 3 to 5. The young first open their eyes at about 3 weeks of age. Young raccoons are weaned sometime between 2 and 4 months of age.

Raccoons are nocturnal. Adult males occupy areas of about 3 to 20 square miles (8 to 52 km²), compared to about 1 to 6 square miles (3 to 16 km²) for females. Adult males tend to be territorial and their ranges overlap very little. Raccoons do not truly hibernate, but they do "hole up" in dens and become inactive during severe winter weather. In the southern United States they may be inactive for only a day or two at a time, whereas in the north this period of inactivity may extend for weeks or months. In northern areas, raccoons may lose up to half their fall body weight during winter as they utilize stored body fat.

Raccoon populations consist of a high proportion of young animals, with one-half to three-fourths of fall populations normally composed of animals less than 1 year in age. Raccoons may live as long as 12 years in the wild, but such animals are extremely rare. Usu-

ally less than half of the females will breed the year after their birth, whereas most adult females normally breed every year.

Family groups of raccoons usually remain together for the first year and the young will often den for the winter with the adult female. The family gradually separates during the following spring and the young become independent.

Damage and Damage Identification

Raccoons may cause damage or nuisance problems in a variety of ways, and their distinctive tracks (Fig. 3) often provide evidence of their involvement in damage situations.

Raccoons occasionally kill poultry and leave distinctive signs. The heads of adult birds are usually bitten off and left some distance from the body. The crop and breast may be torn and chewed, the entrails sometimes eaten, and bits of flesh left near water. Young poultry in pens or cages may be killed or injured by raccoons reaching through the wire and attempting to pull the birds back through the mesh. Legs or feet of the young birds may be missing. Eggs may be removed completely from nests or eaten on the spot with only the heavily cracked shell remaining. The lines of fracture will normally be along the long axis of the egg, and the nest materials are often disturbed. Raccoons can also destroy bird nests in artificial nesting structures such as bluebird and wood duck nest boxes.

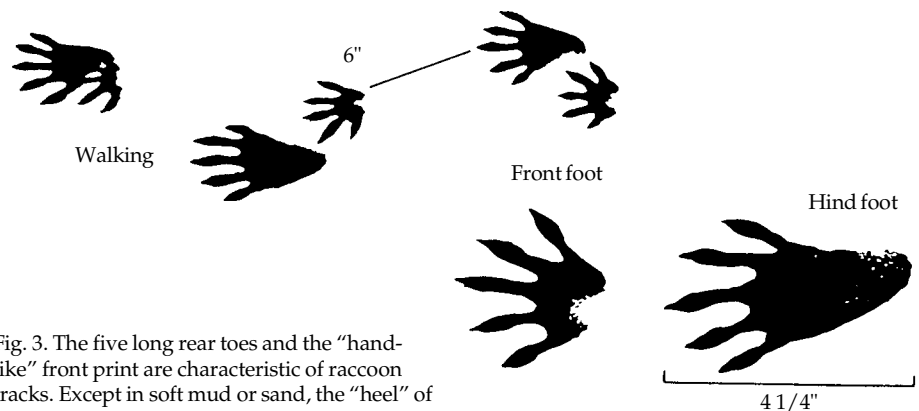


Fig. 3. The five long rear toes and the "hand-like" front print are characteristic of raccoon tracks. Except in soft mud or sand, the "heel" of the hind foot seldom shows.

Raccoons can cause considerable damage to garden or truck crops, particularly sweet corn. Raccoon damage to sweet corn is characterized by many partially eaten ears with the husks pulled back. Stalks may also be broken as raccoons climb to get at the ears. Raccoons damage watermelons by digging a small hole in the melon and then raking out the contents with a front paw.

Raccoons cause damage or nuisance problems around houses and outbuildings when they seek to gain entrance to attics or chimneys or when they raid garbage in search of food. In many urban or suburban areas, raccoons are learning that uncapped chimneys make very adequate substitutes for more traditional hollow trees for use as denning sites, particularly in spring. In extreme cases, raccoons may tear off shingles or fascia boards in order to gain access to an attic or wall space.

Raccoons also can be a considerable nuisance when they roll up freshly laid sod in search of earthworms and grubs. They may return repeatedly and roll up extensive areas of sod on successive nights. This behavior is particularly common in mid- to late summer as young raccoons are learning to forage for themselves, and during periods of dry weather when other food sources may be less available.

The incidence of reported rabies in raccoons and other wildlife has increased dramatically over the past 30 years. Raccoons have recently been identified as the major wildlife host of rabies in the United States, primarily due to increased prevalence in the eastern United States.

Legal Status

Raccoons are protected furbearers in most states, with seasons established for running, hunting, or trapping. Most states, however, have provisions for landowners to control furbearers that are damaging their property. Check with your state wildlife agency before using any lethal controls.



Fig. 4. Electric fencing can be very effective at excluding raccoons from sweet corn or other crops. Two wires are recommended, but one wire 6 inches above the ground may be sufficient. Electric fence chargers are available at farm supply dealers. The fence can be activated at dusk and turned off after daybreak.

Damage Prevention and Control Methods

Exclusion

Exclusion, if feasible, is usually the best method of coping with raccoon damage.

Poultry damage generally can be prevented by excluding the raccoons with tightly covered doors and windows on buildings or mesh-wire fences with an overhang surrounding poultry yards. Raccoons are excellent climbers and are capable of gaining access by climbing conventional fences or by using overhanging limbs to bypass the fence. A "hot wire" from an electric fence charger at the top of the fence will

greatly increase the effectiveness of a fence for excluding raccoons.

Damage to sweet corn or watermelons can most effectively be stopped by excluding raccoons with a single or double hot-wire arrangement (Fig. 4). The fence should be turned on in the evening before dusk, and turned off after daybreak. Electric fences should be used with care and appropriate caution signs installed. Wrapping filament tape around ripening ears of corn (Fig. 5) or placing plastic bags over the ears is an effective method of reducing raccoon damage to sweet corn. In general, tape or fencing is more effective than bagging. When using tape, it is important to apply the type with glass-yarn filaments embedded within so that the

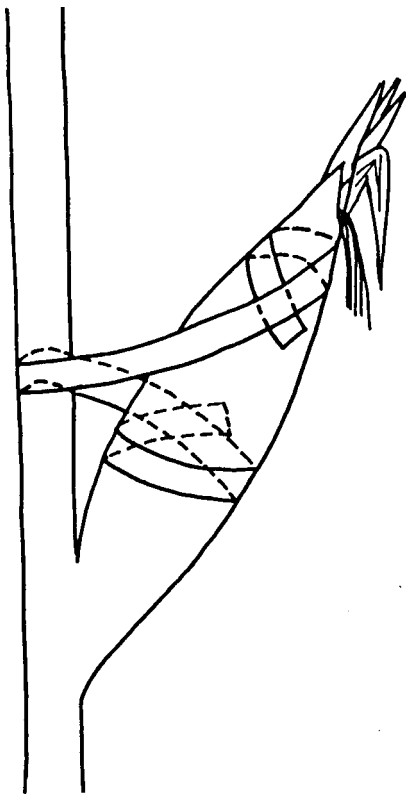


Fig. 5. Wrapping a ripening ear of sweet corn with reinforced filament tape as shown can reduce raccoon damage by 70% to 80%. It is important that each loop of the tape be wrapped over itself so that it forms a closed loop that cannot be ripped open by the raccoon.

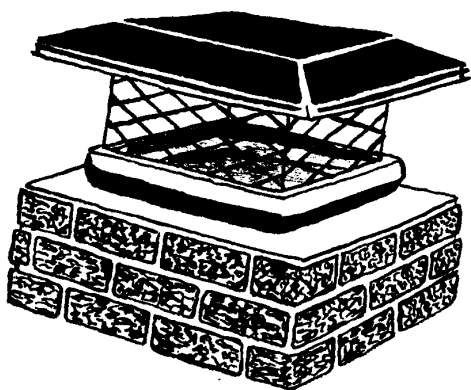


Fig. 6. A cap or exclusion device will keep raccoons and other animals out of chimneys. These are available commercially and should be made of heavy material. Tightly clamp or fasten them to chimneys to prevent raccoons from pulling or tearing them off.

raccoons cannot tear through the tape. Taping is more labor-intensive than fencing, but may be more practical and acceptable for small backyard gardens.

Store garbage in metal or tough plastic containers with tight-fitting lids to discourage raccoons from raiding garbage cans. If lids do not fit tightly, it may be necessary to wire, weight, or clamp them down to prevent raccoons from lifting the lid to get at garbage. Secure cans to a rack or tie them to a support to prevent raccoons from tipping them over.

Prevent raccoon access to chimneys by securely fastening a commercial cap of sheet metal and heavy screen over the top of the chimney (Fig. 6). Raccoon access to rooftops can be limited by removing overhanging branches and by wrapping and nailing sheets of slick metal at least 3 feet (90 cm) square around corners of buildings. This prevents raccoons from being able to get a toehold for climbing (Fig. 7). While this method may be practical for outbuildings, it is unsightly and generally unacceptable for homes. It is more practical to cover chimneys or other areas attracting raccoons to the rooftop or to remove the offending individual animals than to completely exclude them from the roof.

Homeowners attempting to exclude or remove raccoons in the spring and summer should be aware of the possibility that young may also be present.

Do not complete exclusion procedures until you are certain that all raccoons have been removed from or have left the exclusion area. Raccoons frequently will use uncapped chimneys as natal den sites, raising the young on the smoke shelf or the top of the fireplace box until weaning. Homeowners with the patience to wait out several weeks of scratching, rustling, and chirring sounds will normally be rewarded by the mother raccoon moving the young from the chimney at the time she begins to wean them. Homeowners with less patience can often contact a pest removal or chimney sweep service to physically remove the raccoons. In either case, raccoon exclusion procedures should be completed immediately after the animals have left or been removed.

Habitat Modification

There are no practical means of modifying habitat to reduce raccoon depredations, other than removing any obvious sources of food or shelter which may be attracting the raccoons to the premises. Raccoons forage over wide areas, and anything other than local habitat modification to reduce raccoon numbers is not a desirable technique for reducing damage.

Raccoons sometimes will roll up freshly laid sod in search of worms or grubs. If sodded areas are not extensive, it may be possible to pin the rolls

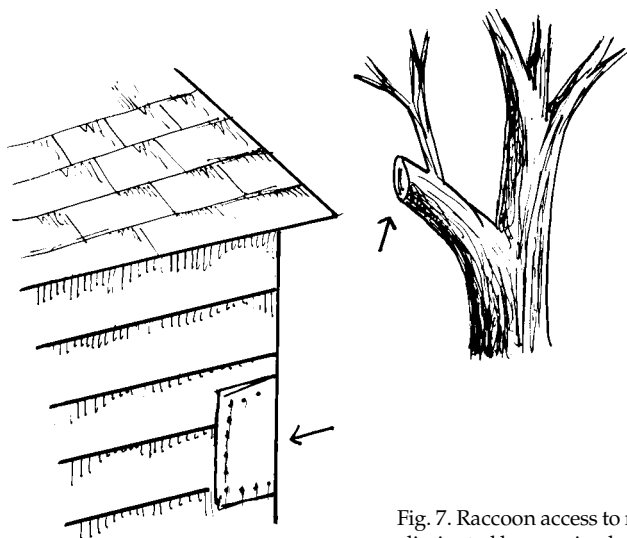


Fig. 7. Raccoon access to rooftops can be eliminated by pruning back overhanging limbs and tacking slick sheets of metal at least 3 feet square around corners of buildings.

down with long wire pins, wooden stakes, or nylon netting until the grass can take root, especially if the damage is restricted to only a portion of the yard, such as a shaded area where the grass is slower to take root. In more rural areas, use of electric fences may be effective (see section on exclusion). Because the sod-turning behavior is most prevalent in mid- to late summer when family groups of raccoons are learning to forage, homeowners may be able to avoid problems by having the sod installed in spring or early summer. In most cases, however, removal of the problem raccoons is usually necessary.

Frightening

Although several techniques have been used to frighten away raccoons, particularly in sweet corn patches, none has been proven to be effective over a long period of time. These techniques have included the use of lights, radios, dogs, scarecrows, plastic or cloth streamers, aluminum pie pans, tin can lids, and plastic windmills. All of these may have some temporary effectiveness in deterring raccoons, but none will provide adequate long-term protection in most situations.

Repellents, Toxicants, and Fumigants

There are no repellents, toxicants, or fumigants currently registered for raccoon control.

Trapping

Raccoons are relatively easy to catch in traps, but it takes a sturdy trap to hold one. For homeowners with pets, a live or cage-type trap (Fig. 8) is usually the preferable alternative to a leghold trap. Traps should be at least 10 x 12 x 32 inches (25.4 x 30.5 x 81.3 cm) and well-constructed with heavy materials. They can be baited with canned fish-flavored cat food, sardines, fish, or chicken. Place a pile of bait behind the treadle and scatter a few small bits of bait outside the opening of the trap and just inside the entrance. Traps with a single door should be placed with the back against a wall, tree, or other object. The back portion of the

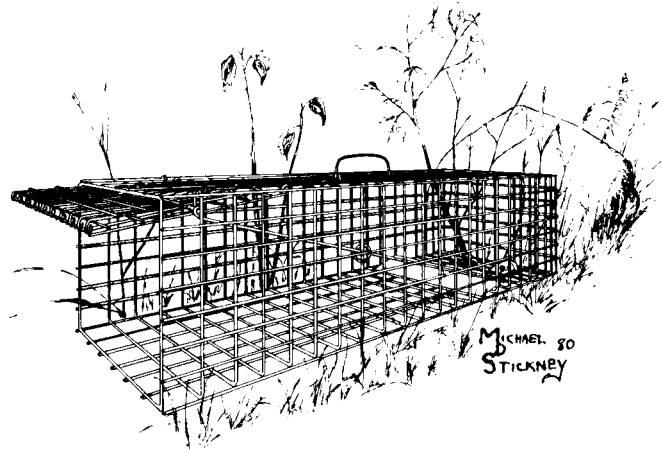


Fig. 8. A cage-type live trap, although bulky and expensive, is often the best choice for removing raccoons near houses or buildings where there is a likelihood of capturing dogs or cats.

trap should be tightly screened with one-half inch (1.3 cm) or smaller mesh wire to prevent raccoons from reaching through the wire to pull out the bait.

Conibear®-type body-gripping traps are effective for raccoons and can be used in natural or artificial cubbies or boxes. Because these traps do not allow for selective release of nontarget catches, they should not be used in areas where risk of nontarget capture is high. Box or leghold traps should be used in those situations instead. It is possible, however, to use body-gripping traps in boxes or on leaning poles so that they are inaccessible to dogs (Figs. 9 and 10). Check local state laws for restrictions regarding use of Conibear®-type traps out of water.

Raccoons also can be captured in foothold traps. Use a No. 1 or No. 1 1/2 coilspring or stoploss trap fastened to a drag such as a tree limb 6 to 8 feet (1.8 to 2.4 m) long. For water sets, use a drowning wire that leads to deep water. The D-P trap and Egg trap are new foot-holding devices that are highly selective, dog-proof, and show promise for reducing trap-related injury. They are available from trapping supply outlets.

The “pocket set” is very effective for raccoons, and is made along the water’s edge where at least a slight bank is present (Fig. 11). Dig a hole

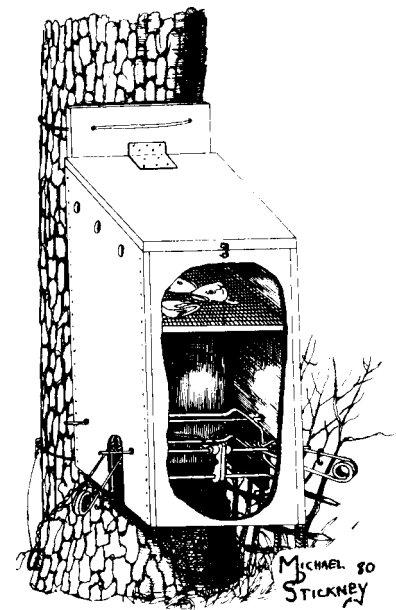


Fig. 9. A “raccoon box” is suspended 6 inches above the ground and is equipped with a Conibear®-type trap. Suspended at this level, this set is dog-proof.

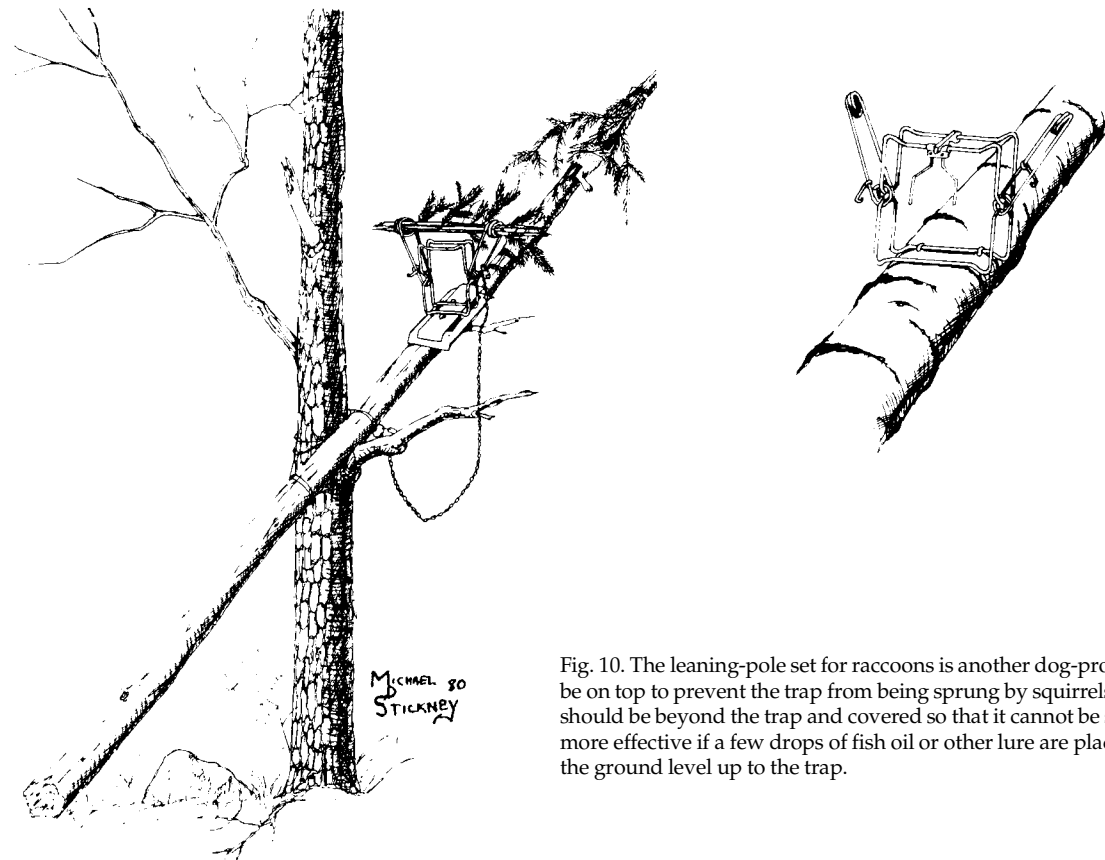


Fig. 10. The leaning-pole set for raccoons is another dog-proof set. The trigger should be on top to prevent the trap from being sprung by squirrels or chipmunks. Bait should be beyond the trap and covered so that it cannot be seen by birds. The set is more effective if a few drops of fish oil or other lure are placed along the pole from the ground level up to the trap.

3 to 6 inches (7.6 to 15.2 cm) in diameter horizontally back into the bank at least 10 to 12 inches (25.4 to 30.5 cm). The bottom 2 inches (5.1 cm) of the hole should be below the water level. Place a bait or lure (fish, frog, anise oil, honey) in the back of the hole, above the water level. Set the trap (a No. 1 or 1 1/2 coilspring, doublejaw or stoploss is recommended) below the water level in front of or just inside the opening. The trap should be tied to a movable drag or attached with a one-way slide to a drowning wire leading to deep water.

Dirt-hole sets (Fig. 12) are effective for raccoons. Place a bait or lure in a small hole and conceal the trap under a light covering of soil in front of the hole. A No. 1 or 1 1/2 coilspring trap is recommended for this set. It is important to use a small piece of clean cloth, light plastic, or a wad of dry grass to

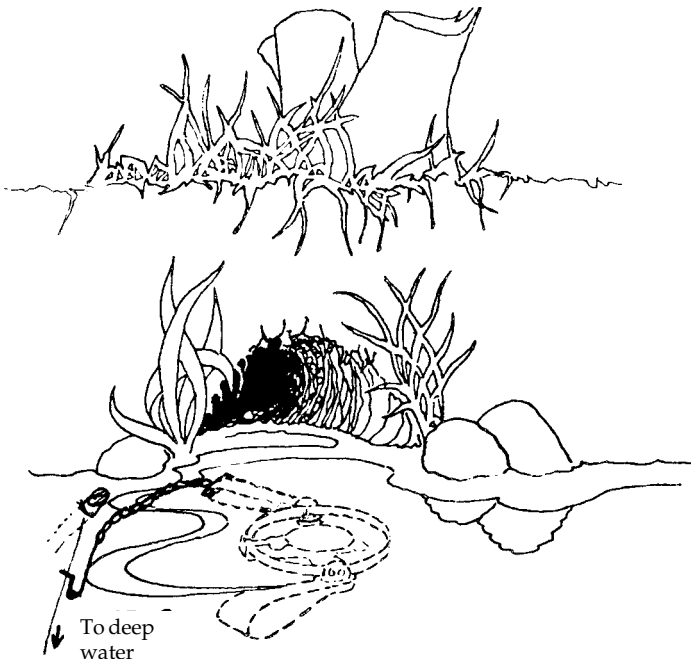


Fig. 11. The pocket set is very effective for raccoons and mink. Place a bait in the back of the hole above the water level and attach the trap to a one-way slide on a drowning wire leading to deep water, or to a movable drag such as a large rock or a section of tree limb 5 to 6 feet long and 3 to 5 inches in diameter.

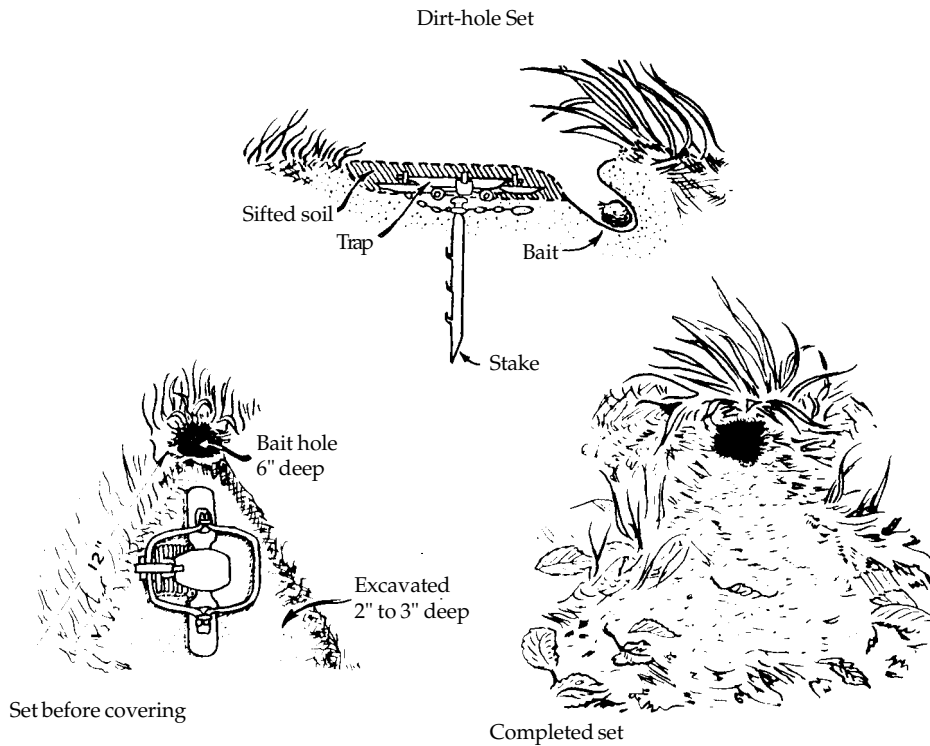


Fig. 12. The dirt-hole set is effective for all species of terrestrial furbearers, including raccoons. The bait is placed in the hole and should be lightly covered with soil so that it is not visible.

prevent soil from getting under the round pan of the trap and keeping it from going down. If this precaution is not taken, the trap may not go off.

Shooting

Raccoons are seldom seen during the day because of their nocturnal habits. Shooting raccoons can be effective at night with proper lighting. Trained dogs can be used to tree the raccoons first. A .22-caliber rifle will effectively kill treed raccoons.

Many states have restrictions on the use of artificial light to spot and shoot raccoons at night, and shooting is prohibited in most towns and cities. It is advisable to check with state and local authorities before using any lethal controls for raccoons.

Economics of Damage and Control

Statistics are unavailable on the amount of economic damage caused by raccoons, but the damage may be offset by their positive economic and aesthetic values. In 1982 to 1983, raccoons were by far the most valuable furbearer to hunters and trappers in the United States; an estimated 4.8 million raccoons worth \$88 million were harvested. Raccoons also provide recreation for hunters, trappers, and people who enjoy watching them. Although raccoon damage and nuisance problems can be locally severe, widespread raccoon control programs are not justifiable, except perhaps to prevent the spread of raccoon rabies. From a cost-benefit and ecological standpoint, prevention practices and specific control of problem individuals or localized populations are the most desirable alternatives.

Acknowledgments

Although information for this section came from a variety of sources, I am particularly indebted to Eric Fritzell of the University of Missouri, who provided a great deal of recently published and unpublished information on raccoons in the central United States. Information on damage identification was adapted from Dolbeer et al. 1994.

Figures 1 through 3 from Schwartz and Schwartz (1981).

Figures 4, 6, and 7 by Jill Sack Johnson.

Figure 5 from Conover (1987).

Figures 8, 9, and 10 by Michael D. Stickney, from the New York Department of Environmental Conservation publication *Trapping Furbearers, Student Manual* (1980), by R. Howard, L. Berchielli, G. Parsons, and M. Brown. The figures are copyrighted and are used with permission.

Figure 11 by J. Tom Parker, from *Trapping Furbearers: Managing and Using a Renewable Natural Resource*, a Cornell University publication by R. Howard and J. Kelly (1976). Used with permission.

Figure 12 adapted from *Controlling Problem Red Fox* by F. R. Henderson (1973), Cooperative Extension Service, Kansas State University, Manhattan.

For Additional Information

- Conover, M. R. 1987. Reducing raccoon and bird damage to small corn plots. *Wildl. Soc. Bull.* 15:268-272.
- Dolbeer, R. A., N. R. Holler, and D. W. Hawthorne. 1994. Identification and control of wildlife damage. Pages 474-506 in T. A. Bookhout, ed. *Research and management techniques for wildlife and habitats*. The Wildl. Soc. Bethesda, Maryland.
- Kaufmann, J. H. 1982. Raccoon and allies. Pages 567-585 in J. A. Chapman and G. A. Feldhamer, eds. *Wild mammals of North America: biology, management and economics*. The Johns Hopkins Univ. Press, Baltimore, Maryland.
- Schwartz, C. W., and E. R. Schwartz. 1981. *The wild mammals of Missouri*, rev. ed. Univ. Missouri Press, Columbia. 356 pp.
- Sanderson, G. C. 1987. Raccoon. Pages 486-499 in M. Novak, J. A. Baker, M. E. Obbard, and B. Malloch, eds. *Wild furbearer management and conservation in North America*. Ontario Trappers Assoc., North Bay.

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