

## Commonly Asked Questions about Laws About Nuisance Wildlife in Colorado

Following are summaries of the most common regulations and statutes pertaining to nuisance wildlife. Again, these are *summaries* ... you can receive full copies of individual statutes and regulations upon request. State laws are also available on the web at [www.Colorado.gov/](http://www.Colorado.gov/) by following the link to "government." Keep in mind that these laws note what is restricted by state statutes and permitted by Division of Wildlife regulations; however, local laws and ordinances may be more specific about what is allowed at a certain location. It is your responsibility to determine whether it is legal to use a particular method of take in your city or county. *The Division of Wildlife does not require nor request the removal of wildlife deemed a nuisance; the determination that a species has become a nuisance and should be removed is the prerogative of the landowner. There are many non-lethal methods for discouraging the presence of wildlife. For information about co-existing with wildlife, please call CDOW at 303/291-7227.*

### 1.) WHAT CAN I DO IF WILDLIFE IS CAUSING DAMAGE ON MY PROPERTY?

Statute 33-6-107 (9), Reg. 305(A) and Reg. 1000(A)

If wildlife is causing damage to crops, real or personal property, or livestock - a person (or any employee or agent of the landowner) may hunt, trap, or take the following wildlife on lands owned or leased by the person without securing a license to do so:

- black-billed magpies, common crows, starlings, English or house sparrows, common pigeons, coyotes, bobcats, red foxes, raccoons, jackrabbits, badgers, marmots, prairie dogs, pocket gophers, Richardson's ground squirrels, rock squirrels, thirteen-lined ground squirrel, porcupines, crayfish, tiger salamanders, muskrats, beavers, exotic wildlife, and common snapping turtles.
- Additional species include: tree squirrels, cottontail rabbits, marmots, porcupines, bats, mice (except Preble's meadow jumping mouse), opossums, voles, rats, and ground squirrels.
- Any person may kill skunks or rattlesnakes when necessary to protect life or property.
- The pelts or hides of any mammal taken under these provisions may be transferred, possessed, traded, bartered, or sold by any person who holds an appropriate small game or furbearer license. (For information on the possession and/or disposal of pelts and hides of animals NOT listed above, including bear and lion, please contact the Division of Wildlife for permission.)

### 2.) WHAT METHODS CAN I USE TO TAKE WILDLIFE WHEN THEY ARE CAUSING DAMAGE ON MY PROPERTY?

Reg. 302(A)(3), Reg. 302 (B) and Reg. 303 (F)

Trapping and or shooting are the most common methods.

- If using firearms, check with your local authorities on the laws that apply to discharging a firearm.
- If trapping, the ONLY types of traps that may be used are LIVE (cage or box traps). (See #5 for exceptions.)
- Small game and furbearers captured in live traps cannot be moved from the capture site and must be killed or released on site when the trap is checked. (See #3 and #4 following for exceptions.)

### 3.) WHICH WILDLIFE SPECIES CAN I RELOCATE WITHOUT A PERMIT?

Reg. 302 (A)(3)

Tree squirrels, cottontail rabbits and raccoons can be relocated without a permit, provided that:

- The Division has been notified in advance.
- The relocation site is appropriate habitat for the species.
- Permission has been obtained from the landowner or managing agency where the animal will be released.
- The relocation must occur within 10 miles of the capture site.

### 4.) WHAT IF I WANT TO RELOCATE AN ANIMAL OTHER THAN TREE SQUIRRELS, COTTONTAIL RABBITS OR RACCOONS?

Reg. 302(A)(3), Reg. 303(F)

If you want to relocate any other species, you must first obtain a Relocation Permit from the CDOW.

### 5.) WHEN CAN I USE BODY-GRIPPING/DEATH TRAPS?

Amend.14, Statute 33-6-203, Statute 33-6-204, Statute 33-6-207, Statute 33-6-208 and Reg. 302(A)(2)

In November 1996, Amendment 14 was passed by ballot initiative. This banned the use of traps such as snares, Conibears, leghold traps, etc.

- You can use body-gripping/ death traps for mice and rats without a permit (as listed in #1).
- Landowners, and others authorized by statute, may be eligible for a 30-day trapping permit in order to protect commercial livestock and/or commercial crop production.
- County health departments may request a 30-day trapping permit in situations directly affecting public health and safety. (These exemptions are rarely given.)
- Specifications on traps are found under Reg. 302 (E).

## **6.) WHAT HOURS CAN I TRAP AND WHEN MUST I INSPECT THE TRAPS?**

**Reg. 301(B) The following information below applies to anyone who is trapping (whether they are permitted to use body-gripping traps or live traps):**

- Small game, except game birds; game reptiles; and furbearers may be trapped day or night.
- All traps and snares **MUST** be visually checked **AT LEAST ONCE EVERY DAY**.

## **7.) CAN I KEEP ANY OF THE WILDLIFE THAT I CAPTURE?**

Reg. 009 (A), Reg. 015(A) and Reg. 1000(A)

Up to four individuals of each of the following species and/or subspecies of reptiles and amphibians may be taken annually and held in captivity, provided that no more than twelve in the aggregate may be possessed at any time:

- Woodhouse's toad, plains spadefoot, western chorus frog, painted turtle, western box turtle, sagebrush lizard, tree lizard, side-blotched lizard, prairie & plateau lizards, bullsnake, western terrestrial garter snake, lesser earless lizard, western whiptail, racer and western hognose snake.
- If these species have not been in contact with species from other geographic areas, they may be returned to the wild but shall not be returned in a distance over 10 miles from where they were captured.
- No other live wildlife may be held in captivity unless you are authorized/licensed by the CDOW to do so.

## **8.) CAN I EVER USE TOXICANTS/POISONS ON WILDLIFE?**

Statute 33-6-130, Statute 33-6-209, Reg. 302 (B)

Some toxicants are legal for Richardson's ground squirrel, rock squirrel, thirteen-lined ground squirrel, pocket gopher, marmots, black-tailed, white-tailed, and Gunnison prairie dogs. Most rats and mice also fall under this category. **Some poisons are available over the counter. You must follow label instructions. Poisons may only be used for species indicated on the box, and application directions must be followed in order for poison to be lawful. Regardless of whether a poison or toxicant is legal by statute, it is your responsibility to check with local authorities about restrictions on specific poisons and toxicants at your location.**

## **9.) CAN I SHOOT A BLACK BEAR OR MOUNTAIN LION IF IT IS ATTACKING MY DOG OR MY SHEEP?** Statute 33-3-106

- Black bears and mountain lions **CAN NOT** be destroyed when they are causing damage to personal property, including pets.
- Black bears and mountain lions **CAN be killed** when it is **NECESSARY** to prevent them from inflicting death or injury to **LIVESTOCK, HUMAN LIFE**, real property, or a motor vehicle. Any wildlife killed shall remain the property of the state, and such killing shall be reported to the division within five days. "Real property" means land and generally whatever is erected or growing upon or affixed to land. (Note: "Personal Property" means everything that is subject to ownership, other than real estate. Personal property includes moveable and tangible things, such as animals, furniture, merchandise.)

## **10.) DOES THE CDOW MANAGE DOMESTIC "WILDLIFE?"**

Statute 33-1-102 (51), Reg. 000 (A) (6)

The CDOW does not manage domestic species of ducks, geese, rats, mice, European ferrets, pigeons, guinea fowl or peafowl. Check your city's municipal code for restrictions on domestic "wildlife."

For more information on Colorado's wildlife, contact the Colorado Division of Wildlife at (303) 297-1192 or on the web at [www.wildlife.state.co.us](http://www.wildlife.state.co.us).



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# OBTAINING ASSISTANCE TO CONTROL WILDLIFE DAMAGE

## Introduction

The Wildlife Society (TWS) policy statement for wildlife damage control (1992) states: "Prevention or control of wildlife damage . . . is an essential and responsible part of wildlife management." The role of wildlife damage control in our society is changing and so is public perception of it. This change is recognized among wildlife managers and researchers.

Efforts are under way to make the wildlife damage control profession more responsive to concerns of society. Formal petition for the establishment of a Wildlife Damage Working Group within TWS was made to the Wildlife Society Council on March 21, 1993 and the following day the council approved interim status for the working group.

Wildlife damage control professionals should be prepared to promptly supply the best information available to solve conflicts between people and wildlife. Often, the most urgently needed information is where to go for assistance when a problem arises.

This chapter provides options for obtaining assistance. It tells who does what to minimize conflicts between people and wild animals, and it gives

suggestions for obtaining self-help information and/or reaching people who can provide onsite help.

## Background

Wildlife managers and agricultural specialists are often familiar with damage caused by wild animals to livestock, crops, and other types of private and public property. Conover and Decker (1991) surveyed wildlife managers and agricultural specialists throughout the United States and concluded that damage caused by wild animals was a major agricultural problem. Twenty-seven species were cited as causing the greatest problems. From a national perspective, deer reportedly caused the most damage, followed by elk, raccoons, beavers, blackbirds, and coyotes.

Damage by wild animals to ornamental plants, buildings, roads, and other structures can be serious. Some of the most costly problems are caused by house mice, Norway and roof rats, beavers, and deer (see chapters on these species in this handbook). Wild animals also cause nuisance problems, particularly in urban areas. Problems range from feces left on golf course greens by ducks and geese and garbage containers overturned by

raccoons, to disturbing sounds made as small mammals move in attics and walls. Chapters in this handbook provide information about nuisance problems caused by bats, tree squirrels, raccoons, woodpeckers, ducks and geese, and other problem species.

Under some conditions wild animals are reservoirs of diseases, presenting a threat to other wildlife populations, to domestic animals, and to human health (See **Wildlife Diseases and Humans**, Friend 1987, Davidson and Nettles 1988). Also, public safety is at risk from automobile and aircraft collisions with wild animals (Dolbeer et al. 1989, Hansen 1983).

People usually enjoy having wild animals near their homes and most are willing to tolerate moderate damage from wildlife. Some people are able to control wildlife damage on their own. Others, before acting on their own, need information about the life histories of the animals causing problems, the legal status of the animals, and suggestions about controlling damage. Still others need professional, onsite help to solve wildlife damage problems. There are programs available to meet the needs of do-it-yourself wildlife managers and onsite assistance for people who need more help.



## 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

## Obtaining Assistance

Table 1 shows whom to contact for information, permits, and hands-on assistance. Mailing addresses and telephone numbers of coordinating offices for federal and state agencies are listed in the National Wildlife Federation Conservation Directory, which is published annually. Some key national groups and telephone numbers are listed below in the section on "Groups That Help Prevent and Control Wildlife Damage." Private pest control operators and local offices of government agencies that help control wildlife damage may be found in public telephone directories.

Keep in mind that permits may be required **before** control activities are initiated. When there is a possibility that endangered species or migratory birds will be affected, contact the US Fish and Wildlife Service. When game animals are involved, contact your state wildlife management agency. When aquatic habitats such as wetlands or streams may be affected, contact the US Army Corps of Engineers and your state environmental regulatory agency.

Special materials may be required to prevent and control wildlife damage. Chapters on individual species list information about such materials. Most items will be available from hardware and gardening supply stores. When pesticides are used, read labels carefully. You may need to contact USDA-APHIS-Animal Damage Control (ADC) or the Extension Service for explanation of some applications. The Pocatello Supply Depot operated by USDA-APHIS-ADC provides some chemical control agents for wildlife (see section below on the ADC Program). The **Pesticides** section in this handbook provides more details.

Effective techniques for controlling damage from wild animals do not exist for all situations. Information about research to solve special problems or international issues related to wildlife damage control may be obtained from the Denver Wildlife Research Center or the Jack H.

Berryman Institute of Wildlife Damage Management at Utah State University. A section on wildlife damage research is presented below.

Attracting wildlife through feeding and habitat enhancement has gained popularity in recent years. This has resulted in greater appreciation of wildlife among urban residents and provides educational opportunities. Conflicts may develop, however, when wild animals concentrate near feeders and protected sites.

The key to enhancing urban wildlife is careful planning to develop compatible situations where the needs of wild animals are met without creating intolerable situations for people. Keep in mind that wild animals enjoyed by some people may cause problems for neighbors. The fox that one family likes to see in the backyard may be a serious problem for neighbors raising chickens, and the deer that people enjoy viewing from a distance may be a safety hazard on roads or may cause serious damage to ornamental plants and gardens in the community.

## Groups that Help Prevent and Control Wildlife Damage

### Cooperative Extension Service

The Cooperative Extension Service is a good place to start when you have a problem with wild animals and do not know where to obtain help. The extension service provides a wide range of information on prevention and control of wildlife damage through local agents in most counties and specialists at many state universities. Extension wildlife activities are coordinated nationally through the Natural Resources and Rural Development Program (202-720-5468). Local extension service offices are listed in government sections of telephone directories.

### Animal Damage Control Program

USDA-APHIS provides operational and technical assistance to reduce conflicts between people and wildlife

through the nationwide ADC program. Help is available to states, individuals, and public and private organizations when wild animals damage livestock, poultry, beneficial wildlife, or crops including forests and rangelands. Help is also available when wild animals threaten human health and safety.

The ADC program includes a deputy administrator (202-720-2054), headquarters support staff, the Denver Wildlife Research Center, and the Pocatello Supply Depot. Operational activities are managed within most states through the eastern and western regional offices, and individual state offices. The Denver Wildlife Research Center (DWRC) (303-236-7826) is a major research facility devoted to improving methods and materials for vertebrate damage control. The Pocatello Supply Depot at Pocatello, Idaho (208-236-6920), manufactures and sells some toxicants, fumigants, and other products for wildlife damage management.

### Fish and Wildlife Service

The US Fish and Wildlife Service has primary responsibility for managing endangered species and migratory birds. Contact the agency about required permits before initiating control activities that involve these species (Office of Management Authority, 800-358-2104).

### State Wildlife and Fish Management Agencies

State wildlife and fish management agencies are responsible for managing most resident species of wildlife and fish, as well as migratory species while they are within state borders. Often permits are required from the state agency before species listed as game animals, furbearers, or game fishes can be controlled. Permits may also be required if species are involved that are considered rare or endangered by the state. Check with your local state wildlife and fish management agency when you obtain a permit for control from the US Fish and Wildlife Service.



**Table 1. Sources of information (I), permits (P), and hands-on assistance (A) for wildlife damage control. The National Wildlife Federation *Conservation Directory* lists addresses and telephone numbers for coordinating offices for federal and state agencies. Public telephone directories list local government offices and private pest control operators.**

SPECIES	USDA-APHIS-Animal Damage Control	Extension Service	US Fish and Wildlife Service	State wildlife and fish management agencies	Local animal control agencies	Private pest control operators
<b>Mammal Predators</b>						
Badgers	I	I		P		A
Bears	IA	I		IP		
Bobcats and lynx	IA	I		IP		
Cougars	IA	I		IP		
Coyotes	IA	I		IP		
Feral house cats	I	I		I	A	A
Feral dogs	IA	I		I	A	A
Foxes	IA	I		IP	A	
Opossums	IA	I		I	A	A
Otters	I	I		IP		
Raccoons	IA	I		IP	A	A
Skunks	IA	I		IP	A	A
Weasels	IA	I		IP		
Wolves	IA	I	P	IP		
<b>Small Mammals</b>						
Bats	I	I	P	I	A	A
Beavers	IA	I		IP		A
House mice	I	I			IA	A
Moles	I	I				A
Muskrats	IA	I		IP		A
Pocket gophers	I	I				A
Prairie dogs	IA	I	I	I		A
Norway rats	I	I			IA	A
Roof rats	I	I			IA	A
Rabbits	IA	I	I	IP	IA	A
Tree squirrels	I	I		P	IA	A
Voies	I	I				A
<b>Big Game Mammals</b>						
Bison	I	I		P		
Deer	I	I		IPA		A
Elk		I		IPA		
Feral swine	I	IA		IP		
Moose		I		IPA		
Pronghorns		I		IPA		
<b>Birds</b>						
Blackbirds	IA	I	I	I	I	A
Crows	IA	I	I	I		A
Ducks and geese	IA	I	IP	IP		A
Eagles	IA	I	IP	IP		
Egrets, herons, and cormorants	IA	I	IP	IP		
Hawks, falcons, and owls	IA	I	IP	IP		
Magpies	IA	I	I			
Pigeons	IA	I			I	A
House sparrows	IA	I			I	A
Starlings	IA	I			I	A
Turkeys		I		IP		
Woodpeckers	IA	I	IP	IP	I	A
<b>Reptiles</b>						
Alligators	I	I		IP		A
Snakes	I	I		I	I	A

### **Local Animal Control Authorities**

The local animal control authority, public health service, or animal welfare organization, may be able to provide assistance with damage caused by urban wildlife, in situations in which humans are threatened by wildlife, and with free-ranging dogs and cats. Refer to government sections of your local public telephone directory.

### **Professional Pest Control Operators**

Private pest control operators located throughout the United States provide a wide range of wildlife damage control supplies and services. Consult your telephone directory for local pest control operators. The National Animal Damage Control Association and the Urban Wildlife Management Association may be able to provide contacts for special control situations.

### **Research to Understand and Minimize Wildlife Damage**

Research on ways to minimize damage caused by wild animals dates back to the nineteenth century. In the United States, most research on damaging wildlife has been conducted and/or funded by government agencies. Major research efforts date back to the establishment of the Section of Economic Ornithology within the US Department of Agriculture in 1885 (US Fish and Wildlife Service 1981). The section grew, and in 1905 became the Bureau of Biological Survey. The survey and cooperating universities conducted studies of pocket gophers and ground squirrels. The survey also supported research on predatory animals, mainly aimed at eliminating them to satisfy demands of the growing western livestock industry.

Controversy about controlling coyotes and other wild animals increased from the late 1920s through the 1970s. Opposition to control changed from a fringe position opposed to wild animal suffering in the 1930s to a well-organized, national movement concerned with environmental issues and animal welfare. The emphasis of wildlife damage control research also

shifted from lethal control to nonlethal control techniques that include more studies of predator behavior.

Numbers of wildlife professionals involved in wildlife damage control declined through the 1960s and 1970s as controversy increased. By 1978 only 41 of 450 US and Canadian university and college wildlife faculty members surveyed reported an emphasis in the ecology and control of damaging vertebrates (Blaskiewicz and Kenny 1978).

In recent years, most research relating to problem wildlife has been conducted by personnel of the Denver Wildlife Research Center (DWRC) or has been supported by grants from the center. In 1986, the DWRC was transferred from the Fish and Wildlife Service to the Animal and Plant Health Inspection Service (APHIS).

The DWRC has national and international programs devoted to providing scientific information on wildlife damage, existing control practices, and alternative methods for reducing damage. About half of the staff is based in Denver; the rest are located at field stations on university campuses and other sites in the United States and cooperating countries.

The DWRC has cooperative ties with several universities. Colorado State University in Fort Collins has been a close cooperator with DWRC for many years. DWRC staff serve as instructors in some courses and advise and support research studies by university students. The DWRC has been particularly involved in short courses on wildlife damage research and management for foreign students. APHIS plans to move the DWRC headquarters to the Colorado State University campus. A master plan has been completed and construction of an animal facility was initiated in 1993.

Cornell University, in Ithaca, New York, has cooperated for five years with DWRC in conducting research on deer damage and its management. The university, along with the New York Cooperative Fish and Wildlife Research Unit, has conducted research on a variety of wildlife damage

problems ranging from biological studies of pine voles to human perceptions of wildlife damage and control.

The Monell Chemical Senses Center on the Philadelphia campus of the University of Pennsylvania is a nonprofit research institute devoted exclusively to studies of taste, smell, and the common chemical sense. This institute has been involved with wildlife damage research since its inception in 1968. The DWRC has maintained a field station at the center since 1978. The center has focused on the role of the chemical sense in wildlife damage management, including bait shyness, food-aversion learning, attractancy, and repellency.

The University of Florida at Gainesville has worked cooperatively with a Gainesville-based field station of the DWRC on research leading to cultivars of blueberries that might improve resistance to depredation by some species of birds

The DWRC staff also work in collaboration with the Gainesville-based field station and Louisiana State University's Rice Research Station to study and control blackbird damage to rice. Research efforts are also devoted to the control of beaver damage in waterways.

Mississippi State University, in Starkville, has had a strong interest in wildlife damage research for many years, partly through the US Fish and Wildlife Service Cooperative Research Unit on the campus. Since the establishment of a field station of the DWRC on campus in 1988, the research has focused particularly on bird depredations to aquaculture. The Maine Cooperative Fish and Wildlife Research Unit has also had interest in cormorant depredations in aquaculture. The DWRC has assisted in the development and production of radiotelemetry equipment to allow tracking of movements of cormorants for both the Maine and Mississippi studies.

Bowling Green State University, in Ohio, has a strong research and educational program in wildlife damage management. The DWRC has cooperated in this program by sponsoring

research activities, and by classroom lectures and discussion. Plans are being developed to form close working relationships between the University and the DWRC field station at nearby Sandusky, Ohio. In the past, the field station program focused on blackbird population dynamics and damage to corn. More recent research has emphasized gull problems at airports and at sanitary landfills. The present leadership of Bowling Green State University is strongly supportive of continued programs in wildlife damage management.

North Dakota State University in Fargo has worked cooperatively with DWRC on reducing blackbird damage to sunflowers. The University has a long-term plant-breeding program that has produced two high-yield cultivars of sunflower that exhibit resistance to blackbird damage. Research at the field station is presently focused on alteration of cattail marshes to make them unsuitable as roosts for blackbirds and more suitable for other migratory birds.

Some cooperative studies are being conducted on the efficacy of DRC-1339 for blackbird control with the Jack H. Berryman Institute of Wildlife Damage Management at Utah State University, in Logan (801-797-2436). This new institute offers a broad research and graduate educational program focusing on innovative approaches to controlling wildlife damage. The purpose of the institute is to help wildlife damage management specialists and researchers do their jobs better and to foster communication.

Utah State University is also the site of a field station of DWRC that focuses primarily on predator control methods and their alternatives. The station is uniquely equipped with large penned areas for the study of coyote behavior. This station, along with its university-based cooperators, has been the source of many studies contributing to our present understanding of coyote biology, behavior, physiology, and population dynamics.

Washington State University in Pullman has had an active interest in a

broad range of wildlife damage issues for many years, including the development of bird-repellent methods, animal-restraining systems, humane trapping standards, and control of rodent damage to orchards. The recent addition of a DWRC field station at the university is strengthening the program, particularly in rodent problems and their control. The Pullman station is closely tied with a DWRC field station at Olympia, which has focused for many years on wildlife damage to forests by species such as deer, mountain beavers, voles, and pocket gophers. These research programs assess the efficacy of existing control and look at repellent devices, food aversion learning, and chemical repellent systems. The work is also closely coordinated with the field station at Monell Chemical Senses Center in Philadelphia.

The University of California, at both Berkeley and Davis, as well as the University System's Research and Extension Center at Hopland, has had a strong and broad research and educational program in wildlife damage under the leadership of Dr. Walter Howard, professor emeritus of the University of California at Davis. The Berkeley scientific staff has had particular interest in deer damage and population dynamics, whereas the Hopland Center has contributed much to understanding and managing predator problems. The recent addition of a DWRC field station at the Berkeley location is providing opportunities for studies of predator behavior and population dynamics as well as alternative control approaches. Some of these projects are coordinated with studies of coyotes at Yellowstone National Park and the University of Montana at Bozeman.

In addition to field stations and collaborating scientists, DWRC has contracts with universities and other organizations to conduct research. Arizona State University in Tempe has contracted to conduct studies on food aversion learning as it relates to predator management. Several universities have participated in studies of contraception as a wildlife damage management tool. These include studies at

Rutgers University in New Brunswick, New Jersey, on hormonal approaches to contraception of deer and studies at Baylor Medical College in Waco, Texas, and Pennsylvania State University in State College, Pennsylvania, on immunologically based approaches to contraception of deer. The DWRC has also supported student research at the University of Missouri-Colombia on human perceptions of goose management.

Although the DWRC continues to cooperate with universities, it has not cooperated formally with all universities that have an interest in or active research or educational programs in wildlife damage management. For example, the University of Nebraska-Lincoln has strong research and educational programs in wildlife damage management, as does Kansas State University in Manhattan. Both of these universities would be suitable candidates for closer cooperative efforts in the future. In general, cooperative research ties with universities have provided opportunities to assess new approaches to wildlife management. The ties have also served as recruitment pools for scientists and support staff for professional groups involved in wildlife damage management. The numerous cooperative ties with DWRC attest to a broad and continuing interest in wildlife damage management by many universities.

The director of the DWRC (303-236-7820), can serve as a source for further contacts with any of the universities and research programs described above.

## Summary

An overview of sources of information about wildlife damage management is presented in Table 1. The table is not comprehensive because laws and services vary from state to state. Good starting places for information are local Cooperative Extension offices, state wildlife management agencies, and animal control authorities. They may refer you to USDA-APHIS-ADC or private wildlife damage control services in your area.

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# FRANKLIN, RICHARDSON, COLUMBLAN, WASHINGTON, AND TOWNSEND GROUND SQUIRRELS

Fig. 1. Franklin ground squirrel, *Spermophilus franklinii*



## Damage Prevention and Control Methods

### Exclusion

Limited usefulness.

### Cultural Methods

Flood irrigation, forage removal, crop rotation, and summer fallow may reduce populations and limit spread.

### Repellents

None are registered.

### Toxicants

Zinc phosphide.

Chlorophacinone.

Diphacinone.

Note: Not all toxicants are registered for use in every state. Check registration labels for limitations within each state.

### Fumigants

Aluminum phosphide.

Gas cartridge.

### Trapping

Box traps.

Burrow-entrance traps.

Leghold traps.

### Shooting

Limited usefulness.



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Great Plains Agricultural Council  
 Wildlife Committee



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# BEAVERS

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Fig. 1. Beaver, *Castor canadensis*



## Damage Prevention and Control Methods

### Exclusion

Fence small critical areas such as culverts, drains, or other structures.

Install barriers around important trees in urban settings.

### Cultural Methods and Habitat Modification

Eliminate foods, trees, and woody vegetation where feasible.

Continually destroy dams and materials used to build dams.

Install a Clemson beaver pond leveler, three-log drain, or other structural device to maintain a lower pond level and avoid further pond expansion.

### Frightening

Shooting of individuals or dynamiting or other continued destruction of lodges, bank dens, and dams, where legal, will occasionally move young colonies out of an area.

### Repellents

None are registered; however, there is some evidence that repellents may be useful.

### Toxicants

None are registered.

### Trapping

No. 330 Conibear® traps.

Leghold traps No. 3 or larger (including coil-spring types with equivalent jaw spread and impact).

Basket/suitcase type traps are primarily used for live trapping.

Snares can be useful, particularly in dive sets and slides where legal.

### Shooting

Rarely effective (where legal) for complete control efforts and can be dangerous to humans.

### Other Methods

Other methods rarely solve a beaver damage problem and may increase risks to humans and nontarget species.



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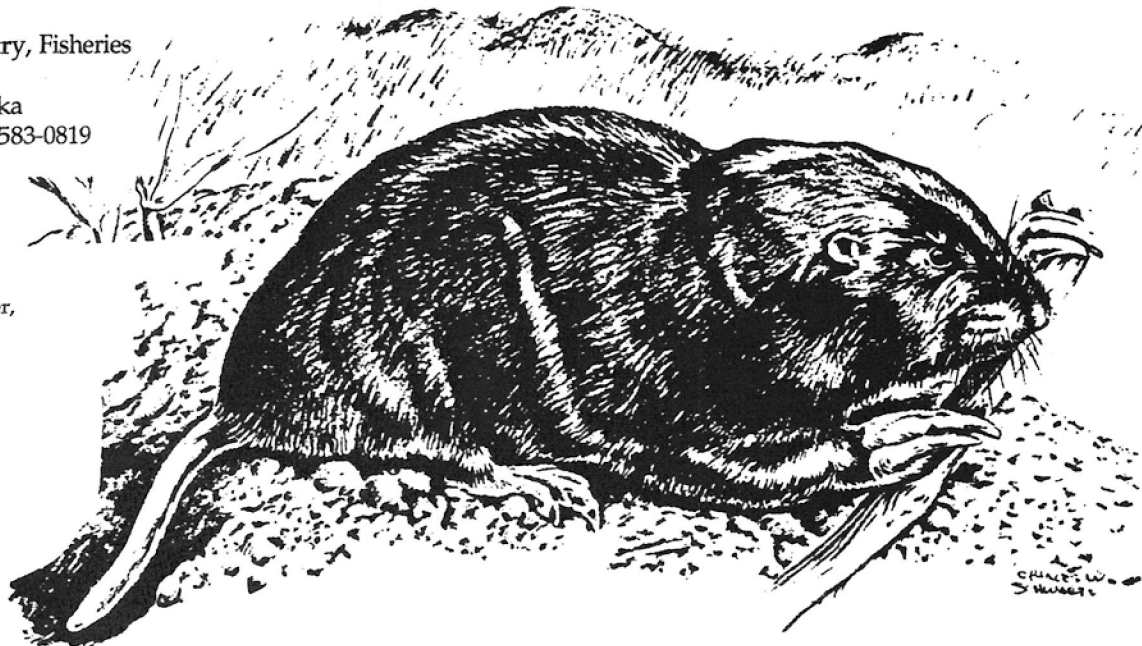
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# POCKET GOPHERS

Fig. 1. Plains pocket gopher,  
*Geomys bursarius*



## Damage Prevention and Control Methods

### Exclusion

Generally not practical.  
Small mesh wire fence may provide protection for ornamental trees and shrubs or flower beds.  
Plastic netting protects seedlings.

### Cultural Methods

Damage resistant varieties of alfalfa.  
Crop rotation.  
Grain buffer strips.  
Control of tap-rooted forbs.  
Flood irrigation.  
Plant naturally resistant varieties of seedlings.

### Repellents

Synthetic predator odors are all of questionable benefit.

### Toxicants

#### Baits:

Strychnine alkaloid.  
Zinc phosphide.  
Chlorophacinone.  
Diphacinone.

#### Fumigants:

Carbon monoxide from engine exhaust.  
Others are not considered very effective, but some are used:  
Aluminum phosphide.  
Gas cartridges.

### Trapping

Various specialized gopher kill traps.  
Common spring or pan trap (sizes No. 0 and No. 1).

### Shooting

Not practical.

### Other

Buried irrigation pipe or electrical cables can be protected with cylindrical pipe having an outside diameter of at least 2.9 inches (7.4 cm).  
Surrounding a buried cable with 6 to 8 inches (15 to 20 cm) of coarse gravel (1 inch [2.5 cm] in diameter) may provide some protection.



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Great Plains Agricultural Council  
Wildlife Committee

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# PRAIRIE DOGS

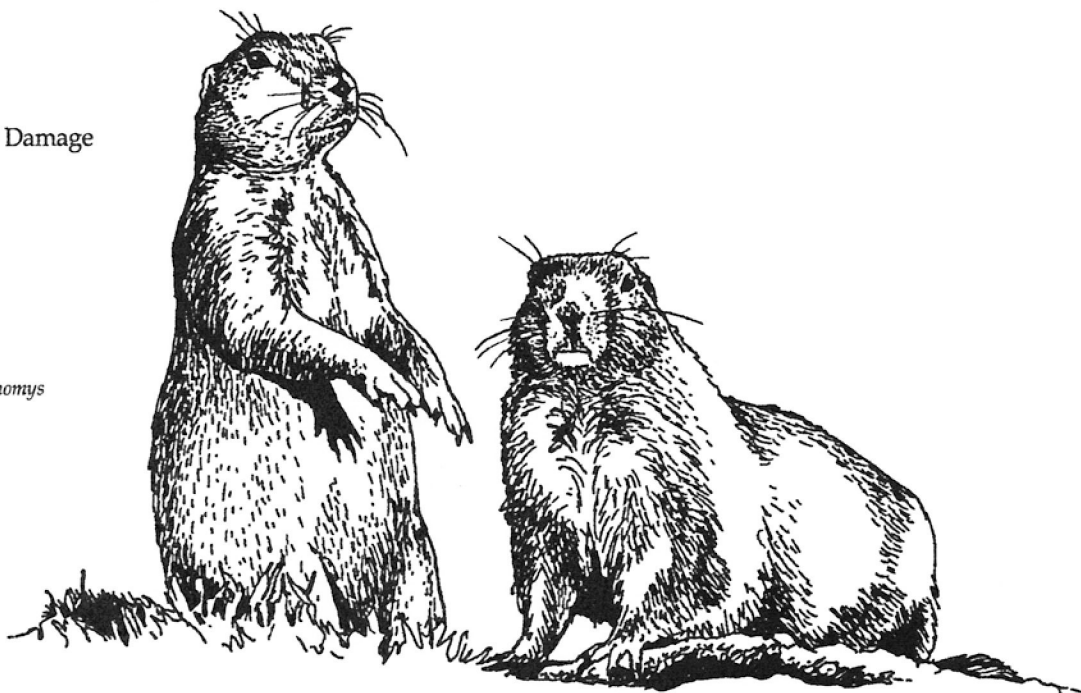


Fig. 1. Black-tailed prairie dogs, *Cynomys ludovicianus*

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## Damage Prevention and Control Methods

### Exclusion

Wire mesh fences can be installed but they are usually not practical or cost-effective.

Visual barriers of suspended burlap, windrowed pine trees, or snow fence may be effective.

### Cultural Methods

Modify grazing practices on mixed and mid-grass rangelands to exclude or inhibit prairie dogs.

Cultivate, irrigate, and establish tall crops to discourage prairie dog use.

### Frightening

None are effective.

### Repellents

None are registered.

### Toxicants

Zinc phosphide.

### Fumigants

Aluminum phosphide.

Gas cartridges.

### Trapping

Box traps.

Snares.

Conibear® No. 110 (body-gripping) traps or equivalent.

### Shooting

Shooting with .22 rimfire or larger rifles.

### Other Methods

Several home remedies have been used but most are unsafe and are not cost-effective.



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# MUSKRATS

Fig. 1. Muskrat, *Ondatra zibethicus*



## Damage Prevention and Control Methods

### Exclusion

Riprap the inside of a pond dam face with rock, or slightly overbuild the dam to certain specifications.

### Cultural Methods and Habitat Modification

Eliminate aquatic vegetation as a food source.

Draw down farm ponds during the winter months.

### Frightening

Seldom effective in controlling serious damage problems.

### Repellents

None are registered.

### Toxicants

Zinc phosphide.

Anticoagulants (state registrations only).

### Trapping

Body-gripping traps (Conibear® No. 110 and others).

Leghold traps, No. 1, 1 1/2, or 2.

Where legal, homemade "stove pipe" traps also are effective when properly used.

### Shooting

Effective in eliminating some individuals.

### Other Methods

Integrated pest management.

## Identification

The muskrat (*Ondatra zibethicus*, Fig. 1) is the largest microtine rodent in the United States. It spends its life in aquatic habitats and is well adapted for swimming. Its large hind feet are partially webbed, stiff hairs align the toes (Fig. 2), and its laterally flattened tail is almost as long as its body. The muskrat has a stocky appearance, with small eyes and very short, rounded ears. Its front feet, which are much smaller than its hind feet, are adapted primarily for digging and feeding.

The overall length of adult muskrats is usually from 18 to 24 inches (46 to 61 cm). Large males, however, will sometimes be more than 30 inches (76 cm) long, 10 to 12 inches (25 to 31 cm) of which is the laterally flattened tail. The average weight of adult muskrats is



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# MOLES

Fig. 1. Eastern mole, *Scalopus aquaticus*



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## Damage Prevention and Control Methods

### Exclusion

Generally not practical, except in very small, high-value areas where an aboveground and underground barrier (sheet metal, brick, wood) might restrict moles.

### Cultural Methods

Packing the soil destroys burrows, and sometimes moles if done in early morning or late evening.

Reduction in soil moisture and food source removal by the use of insecticides discourages moles and generally results in lower populations.

### Frightening

Ineffective.

### Repellents

None are registered.

### Toxicants

Strychnine alkaloid.

Chlorophacinone is registered in some states.

### Fumigants

Aluminum phosphide.

Gas cartridges.

### Trapping (most effective control method)

Out O' Sight® Trap.

Bayonet trap or harpoon trap (Victor® Mole Trap).

Nash® (choker-type) mole trap.

Easy-set mole eliminator.

Cinch mole trap.

Death-Klutch gopher trap.

### Shooting

Not practical.

### Other Methods

None tested have proven effective.



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# BADGERS

Fig. 1. Badger, *Taxidea taxus*



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## Damage Prevention and Control Methods

### Exclusion

Generally not practical.

### Habitat Modification

Controlling rodent populations may make habitats less suitable for badgers.

### Frightening

Bright lights.

### Repellents

None are registered.

### Toxicants

None are registered.

### Fumigants

None are registered.

### Trapping

Steel leghold traps.

Live traps.

### Shooting

Where permitted, shooting with a rifle, handgun, or shotgun is effective.

## Identification

The badger (*Taxidea taxus*) is a stocky, medium-sized mammal with a broad head, a short, thick neck, short legs, and a short, bushy tail. Its front legs are stout and muscular, and its front claws are long. It is silver-gray, has long guard hairs, a black patch on each cheek, black feet, and a characteristic white stripe extending from its nose over the top of its head. The length of this stripe down the back varies. Badgers may weigh up to 30 pounds (13.5 kg), but average about 19 pounds (8.6 kg) for males and 14 pounds (6.3 kg) for females. Eyeshine at night is green.



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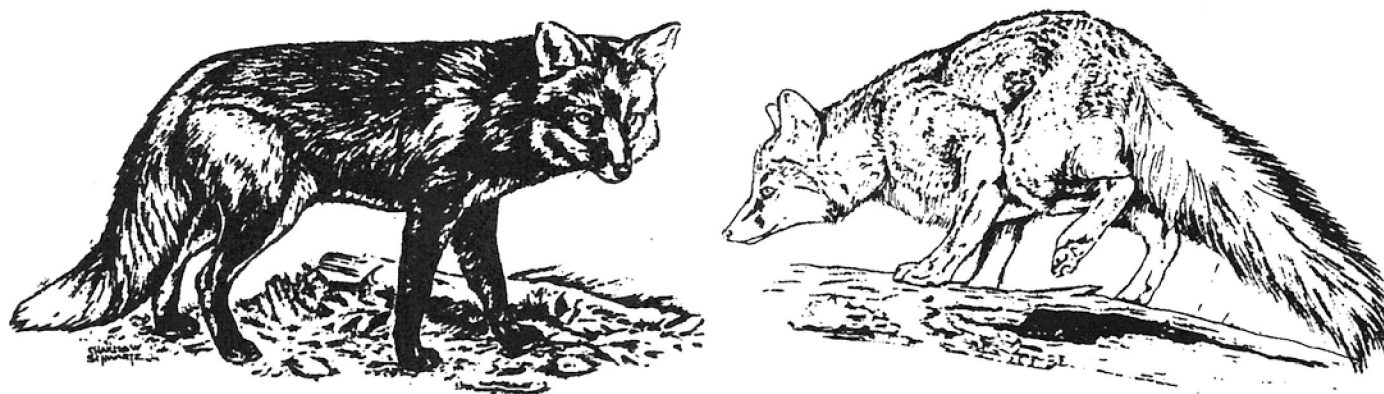
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# FOXES

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Fig. 1. Red fox, *Vulpes vulpes* (left) and gray fox, *Urocyon cinereoargenteus* (right).



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## Damage Prevention and Control Methods

### Exclusion

Net wire fence.  
Electric fence.

### Cultural Methods

Protect livestock and poultry during most vulnerable periods (for example, shed lambing, farrowing pigs in protective enclosures).

### Frightening

Flashing lights and exploders may provide temporary protection.  
Well-trained livestock guarding dogs may be effective in some situations.

### Repellents

None are registered for livestock protection.

### Toxicants

M-44® sodium cyanide mechanical ejection device, in states where registered.

### Fumigants

Gas cartridges for den fumigation, where registered.

### Trapping

Steel leghold traps.  
Cage or box traps.  
Snares.

### Shooting

Predator calling techniques.  
Aerial hunting.

### Other Methods

Den hunting. Remove young foxes from dens to reduce predation by adults.

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