# Beavers

Prepared by the **National Wildlife Control Training Program**. http://WildlifeControlTraining.com
Researched-based, certified wildlife control training programs to solve human – wildlife conflicts.
Your source for animal handling, control methods, and wildlife species information.

**Figure 1. Beaver (*Castor canadensis*). Image by US Fish and Wildlife Service (USFWS).**

## Species Overview

### Conflicts

Most beaver (*Castor canadensis*) conflicts are associated with dam-building and flooding, or feeding damage and cutting of valuable trees. Usually beaver conflicts occur near water, where beaver lodges or bank dens are constructed. Flooding may wash out roads, damage septic systems, or kill trees in low-lying areas.

### Legal Status

The legal status of beavers varies among states. In some states, beavers are protected except during furbearer seasons. In other states, they are classified as pests, and may be taken whenever they cause damage. Beavers generally are not considered pests until economic loss is extensive.

The beaver is classified as a furbearing animal in South Carolina. The season for trapping these animals is December 1 through March 1. Hunting season is open year round for beaver on private lands with a valid hunting license. Anyone planning to trap beavers should be familiar with the regulations which govern this activity. Information on these regulations can be obtained online at: http://www.dnr.sc.gov.

Beavers can also be taken year-round with a **Depredation Permit**. A depredation permit is not required when controlling nuisance beavers within 100 yards of a property owners residence. This permit is issued by the S.C. Department of Natural Resources when beavers are damaging private or public property, timber or growing crops. To obtain a permit call your local wildlife management field office or law enforcement field office.

For further information: http://www.dnr.sc.gov.

### Identification

Beavers (Figure 1) are the largest rodents in North America. They are mainly aquatic, and easily recognized by their large, flat tails.

### Physical Description

A beaver can remain submerged underwater for long periods of time, and can close its nose and ears to prevent water entry. Its lips can close behind the four large incisor teeth, allowing a beaver to gnaw underwater without swallowing water. The underfur is dense and generally gray in color. The guard hair is long and coarse, ranging in color from yellow-brown to black, with red-brown as the most common coloration. The flattened tail is scaly, and nearly hairless. It is used as a rudder when swimming, a warning signal when slapped on the water, and a prop when sitting upright. Beavers have large, bright orange, front incisor teeth that grow continuously throughout their lives. The

incisors are beveled, and sharpened through gnawing and chewing.

The only way to distinguish the sex of a beaver externally, unless it is a lactating female, is to feel for the presence of a baculum (a penis bone). Adult beavers typically weigh 35 to 50 pounds, with some reaching 70 to 85 pounds.

### Species Range

Beavers are found throughout most of North America, and are abundant in the southeast.

### Health and Safety Concerns

In urban areas, beavers may become habituated to humans and may be aggressive if approached. Beavers infected with rabies, which is very uncommon, may attack people. Beavers are hosts to several ectoparasites and internal parasites, including nematodes, trematodes, and coccidia. Beavers contaminate water with *Giardia lamblia*, a pathogenic intestinal parasite that causes intestinal problems in humans. Trappers should avoid splashing water in their faces, and carefully wash their hands before eating or smoking. Anyone who develops severe abdominal cramps or persistent diarrhea while working with beavers should consult a physician. Tularemia has been reported in beavers from Canada and the northern US. Trappers should wear rubber gloves when skinning or eviscerating beaver carcasses.

Floods caused by beaver dams undermine roads and interfere with septic systems. Bank dens cause the collapse of banks along farm and shoreline properties. Falling trees pose threats to structures, power lines, and people.

## General Biology, Reproduction, and Behavior

### Reproduction

Beavers become sexually mature in 1½ years and form life-long pair bonds. Beavers mate from November through March. They produce one litter per year, and three or four young are born about 105 days after mating. Young beavers typically leave the lodge area at about 2 weeks of age and are weaned in 6-8 weeks.

### Nesting/Denning Cover

Beavers are skilled at building dams in streams. They build lodges in ponds and dens in stream banks, depending on what habitat is available. Beavers use the lodge or den for raising young, sleeping, protection from predators, and food storage.

### Behavior

Beavers are very territorial. A colony generally consists of four to eight related individuals that resist outsiders to the colony. Young beavers commonly are displaced from the colony shortly after they become sexually mature at about 2 years of age. They often move to another pond to begin a new colony, although some become solitary and inhabit abandoned ponds.

Dam-building and tree-cutting activities tend to increase as beavers prepare for freezing winter temperatures.

### Habitat

Beavers may be abundant wherever aquatic habitats and trees are available.

### Food Habits

The size and species of trees cut by beavers can vary from softwoods that are 1-inch diameter-at-breast-height (DBH), to hardwoods that are 6-foot DBH, depending upon availability. Some beavers girdle pines and sweetgums for the sap that seeps from the wound. Beavers use many species of trees and shrubs to build dams.

### Voice, Sounds, Tracks, and Signs

Beavers use their tails to warn others of danger by abruptly slapping the water surface. Beavers have several vocalizations including churrs, mumbles, whines, snorts, and hisses.

Cut trees or mud slides along pond and stream edges provide evidence of recent beaver activity.

## Damage Identification

### Damage to Landscapes

Beavers damage gardens and landscapes through flooding and removal of plants. Valuable ornamental trees may be at risk near lakes, ponds or streams inhabited by beavers.

Beaver ponds can provide short-term benefits to warm-water fish species, but long-term negative impacts to streams are a concern. Beaver activity threatens high quality trout streams through increased sedimentation, water temperature, and acidity, as well as decreased dissolved oxygen levels.

### Damage to Crops and Livestock

Beavers may cut cornstalks for food, or use as building materials for dams or lodges. They will also utilize other nearby agricultural crops such as soybeans. They generally are not a threat to livestock or pets.

### Damage to Structures

Floods and falling trees pose severe risks to structures. Low-grade streams (less than 3% slope) with culverts or constricted areas are at highest risk for dams and resulting flooding. Beaver ponds created by dams may cause flooding of highways or railroads. Softened railroad beds may result in train derailments. Earthen dams may be destroyed by beavers burrowing in banks. Residential developments have been threatened by flooding, and thousands of acres of cropland and commercial forests have been flooded by beavers. Plugged ditches, drain pipes, and culverts must be cleared and sometimes replaced.

## Damage Prevention and Control Methods

### Habitat Modification

Beavers modify their habitat extensively, so disturbance by humans has little impact on them. Destruction of dams, and daily removal of materials used to construct dams, may cause beavers to move to another site. Such activities are labor-intensive and expensive. In South Carolina, beaver dams and associated debris can be removed by landowners at their own discretion.

Eliminate food, trees, and woody vegetation that are adjacent to roadways when possible. Usually, such drastic changes in the landscape are feasible only for large highway projects.

Flow pipes can provide sufficient relief from flooding in some circumstances. Flow pipes are popular because beavers do not have to be killed. Installation of flow pipes, however, may result in the beavers simply moving up or down stream. Install flow pipes only when:

1. landowners tolerate damage to trees or other plant life,
2. water depth is sufficient to allow activity of beavers under ice (4 feet minimum),
3. the area has sufficient room to handle typical spring flooding, and
4. standing water will not undermine roads or septic systems.

Consult the Internet Center for Wildlife Damage Management (ICWDM) for literature on construction of flow pipes.

### Exclusion

It is often cost-prohibitive to exclude beavers from ponds, lakes, or impoundments. Protect valuable trees near waterways by encircling them with hardware cloth, woven wire, or other metal.

Construction of concrete spillways or other permanent structures may reduce the impact of beavers. A variety of techniques are available to protect culverts from obstruction by beaver dams, including barrier fences. Consult the resources at ICWDM.org for details on constructing and maintaining these devices.

### Frightening Devices

None are effective for the control of beavers.

### Repellents

None are registered for management of beavers. Some trees may be protected by applying a mixture of 8 ounces of fine sand (30 mil, 70 mil, or mason sand) to 1 quart of latex paint. Stir the mixture frequently to keep the sand in solution. Protect the tree bark from the ground to a height of 4 feet. The color of the paint is a personal preference. Avoid painting young trees less than 6 feet tall. The sand-paint technique works best when beavers have alternative food sources available.

### Toxicants

None are registered for the control of beavers.

### Shooting

In South Carolina, there is no closed season on beaver for private landowners with a valid hunting license. A free depredation permit may be issued to landowners who do not possess a hunting license. Go to www.dnr.sc.gov/ for additional information. Shooting is suitable for removing one or two beavers. In many suburban areas, firearms may not be discharged within 500 feet of dwellings without a permit. Consult your local ordinances before discharging a firearm.

### Trapping

The use of traps often is the most effective, practical, and environmentally safe method for control of beavers. Several methods and types of traps are effective, depending on the situation. The effectiveness of trapping depends on the trapper's knowledge and ability to read beaver sign, recognize food preferences, and use the proper trap and trap placement. An experienced trapper with a dozen traps generally can remove all the beavers associated with a single dam in a week. More effort will be required in watersheds with several colonies. Traps should be checked daily.

Use a walking staff when wading in ponds to locate deep holes, runs, or trails. This will prevent stepping into water over waders or hip boots. It is not uncommon to find runs and entrances to lodges or dens 2 to 3 feet below the rest of the impoundment bottom in older ponds and bottomland swamps where beavers are common.

In South Carolina, the legal trapping season is December 1 – March 1 for licensed trappers, however a private landowner may apply for a free depredation permit outside of the regular trapping season or if they do not have a trapping license. Permits can be obtained from any South Carolina DNR office or conservation officer.

Go to www.dnr.sc.gov for more information.

## Disposition

### Euthanasia

Carbon dioxide chambers are effective for euthanizing beavers. A single bullet (.22-caliber or higher) to the brain is effective, but must be done carefully, as low-powered bullets may ricochet off the skull. Be careful if shooting in or near water.

## Resources

Government or private agencies, universities, extension service.

### Web Resources

http://www.dnr.sc.gov

http://wildlifecontroltraining.com

http://icwdm.org/

http://wildlifecontrol.info

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