

Beaver Management And Control In Georgia



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Wildlife Resources Division
Game Management Section

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Preface

This booklet is intended to provide general information on beavers in Georgia and to assist individuals or landowners experiencing beaver damage problems. The Wildlife Resources Division (WRD) hopes this booklet will serve as a quality source of information for handling nuisance beaver problems. If you need additional assistance with beaver nuisance abatement or other wildlife related issues, contact your local WRD office.

Game Management Offices

Region I	Armuchee	(706) 295-6041
Region II	Gainesville	(770) 535-5700
Region III	Thomson	(706) 595-4222
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Region IV	Fort Valley	(478) 825-6354
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INTRODUCTION

Beavers (*Castor canadensis*) were once virtually eliminated from Georgia, as well as most of their range throughout the United States, primarily because of unregulated trapping and habitat loss. The Georgia Department of Natural Resources and the United States Fish and Wildlife Service responded to this loss and began a restoration program in the 1940's. The Piedmont National Wildlife Refuge, newly established at the time, was used as the first location to restock beavers. Following the success of this establishment, a statewide restocking effort was conducted from 1949-1959. During the last few years of this restoration program, Georgia was considered one of the leaders in beaver restoration. As the beaver population increased, new management regulations were established that allowed them to be harvested as a renewable resource for their fur.

Since demand and pelt prices for beaver have subsequently remained relatively low, beavers have thrived and are common statewide. Today, the trapping of beaver in Georgia is limited because of low prices, low fur demand and fewer trappers. In fact, beavers are quite abundant, little trapping pressure exists and there is no closed season on beavers in Georgia.



*Beaver
sitting
creekside*

LIFE HISTORY

Physical Characteristics

Characterized as North America's largest rodent, beavers are large semi-aquatic animals spending portions of their lives on both land and in water. Perhaps the most commonly recognized feature of beavers is their broad flat tail. While on land, they will use their tail for stability while sitting, feeding or chewing trees. In water, the tail serves as a warning device when slapped on the water to alert other beavers of danger and as a rudder for swimming.

Beavers have many other adaptations that make their lifestyle unique. The front feet are equipped with heavy toenails for dredging mud used in dam building, digging bank dens or handling food and construction material. The large webbed feet assist with swimming and stabilization while standing or walking on soft ground. The fourth toe on their hind feet has a double toenail that is used to comb fur and preen (distribute oil from oil glands to waterproof the fur). Their eyes are located near the top of their head allowing them to see above water while keeping most of their body submerged. Additionally, a thin transparent membrane covers their eyes allowing them to see quite well when submerged. The ears and nose have valves that close and keep out water when submerged. Finally, the lips on beavers are positioned to meet behind the incisor teeth, preventing water from entering their mouth and allowing them to chew while underwater.

Reproductive Characteristics and Social Structure

Distinguishing between male and female beavers is quite difficult without an actual physical examination. Both sexes have a single cloacal opening that is used by both the reproductive and excretory systems. The male organ is actually contained inside the cloacal opening.



Adult beaver

Beavers are social animals and usually live in family units called colonies. A single colony may contain a breeding adult pair and both yearling and juvenile offspring. Beavers usually mate for the life of an individual. If a mate is killed, the remaining beaver will form a new breeding pair with another beaver. Breeding in Georgia typically occurs in October through March. Offspring are born 105-107 days following breeding. Beavers become sexually mature at two years of age and will then produce one to four kits (young) annually. Once the offspring reach sexual maturity, the young either leave to find their own territory or are forced out by the adults.

Beavers are territorial animals. Male and female beavers produce scented oil or castoneum from their castor glands that is used to mark territory and attract mates. Leaves and mud are hauled out of nearby water to create a mound on which castor is deposited to mark territory. Although castor mounds are built year-round, increased mound building activity occurs during the winter and early spring during times of dispersal and mating.

Feeding Habits

Beavers are one of the many herbivores (plant-eaters) found in Georgia. Their diet varies seasonally. During the winter months, woody vegetation is the meal of choice. Preferred winter foods include sweet gum, ash, willows, poplar, cottonwoods, pines and fruit trees. However, no tree is safe when a beaver is hungry. During the spring and summer, beavers seem to depend less on

trees and relish aquatic plants and lush tender green shoots of terrestrial plants. When available, beavers will eat green corn and use the stalks for dam building.

In preparation for winter, beavers may create a food cache or feed bed. Trees are cut down and chewed into manageable sections and floated to the food cache. These food storage areas are usually located underwater near winter dens for easy access during times of harsh weather. In appearance, food caches will look like brush piles located in the water but with all the bark chewed off the limbs. However, food caches are not always built, especially in the south. Because winters are typically milder than in the north, beavers will sometimes opt to survive on whatever food is nearby their winter lodge.

Lodges, Dens and Dams

Shelter is an essential component of any animal's habitat. Beavers create their own shelter in the form of either bank dens or lodges. Dens are created by digging holes in banks of lakes, ponds, rivers, creeks or streams. Dens may collapse when flooded causing beavers to either move and create a new den or patch the holes in the existing den using mud and sticks. Beavers oftentimes will have a series of dens in case one den becomes unsuitable. If the banks are not suitable for digging, beavers will opt to pile up sticks and form a lodge. Entrances to either the den or lodge are positioned underwater but the den itself is usually located 1-2 feet above the water level.

Beaver creating a meal out its preferred winter food.



Beaver lodge

Beaver dam



One of the most famous characteristics of beavers is their ability to build dams. Beaver dams have three primary functions. The first is to control water levels to protect lodges and dens. Dams help mediate flooding thereby minimizing damage. The second function is protection. Beavers move more efficiently in water and are able to avoid predators more effectively. The third, and most important, function is to assist them in feeding. Beaver dams back up water and flood vegetation to create ponds, which allows beavers to feed in an aquatic environment. Plus, it is easier to float sticks in water than to drag them on land.

Distribution

Beavers can be found throughout Georgia and most of North America wherever suitable habitat exists. Present in most areas with a year-round water flow, beavers are found in streams, lakes, farm ponds, wetlands, and low lying land or swamps along flood-prone creek and river bottoms. Beavers occasionally are found in roadside ditches, drainage ditches, and sewage ponds and are becoming more common in urban areas.

IMPORTANCE OF BEAVERS

Ecological

From an ecological standpoint, beavers are one of the most important animals in Georgia. Other than man, no animal makes such dramatic landscape changes to the habitat in which they live. Ponds created from beaver dams provide excellent wetland habitat for numerous plants and animals. Beaver ponds are critical habitat for many species of waterfowl and other migratory birds.



Beaver ponds provide excellent habitat for a host of wildlife species.

Landowners benefit from having beaver ponds on their property in the form of additional hunting, fishing and bird watching opportunities. Beaver ponds are useful for irrigation, flood control and help maintain water tables during droughts. Beaver ponds also act as a natural filtration system, removing silt and other impurities from water.

Economic

Historically, beavers had a positive impact on the economy and were the most widely and intensively sought natural resource in North America during the 1700's and 1800's. Their fur was used for clothing, especially hats in Europe during the 1800's. Oil from their castor glands was an essential component in many high quality perfumes. Beaver coats and other garments were extremely desirable throughout much of North America.

Today, beavers remain one of the most valued fur sources, yet prices remain relatively low, especially in Georgia. Southern furs are considered poor quality when compared to furs from the North. However, beavers are still desirable for coats, hats and other outer garments and their castor glands are marketable for use in the lure or perfume industry.

In recent times, beavers are considered by some to have more negative economic impacts than positive. Flooding caused by dams may result in damaged timber, crops or pasture. Highway departments may spend thousands of dollars every year attempting to clear beaver plugged culverts or paying trappers for nuisance beaver removal. When feeding, beavers girdle and destroy trees and shrubs, some of which are highly valued and expensive. Beavers will feed on agricultural crops, especially corn and soybeans, resulting in diminished yields for the farmer. Beavers often may damage fish and farm ponds through den and dam construction.



Highway department unclogging a culvert plugged by beavers

DAMAGE PREVENTION AND CONTROL

Beauty is in the eye of the beholder when it comes to beaver damage situations. One individual may gain happiness and satisfaction seeing beaver ponds with chewed trees on their property and knowing that wildlife is alive and flourishing on the land. Others may find displeasure seeing flooded land with damaged or dead trees (although it is important to remember that even dead trees can provide valuable habitat to certain wildlife species). Individuals having problems due to flooding, damaged crops, trees or landscaping may want beavers removed from their property.

NONLETHAL METHODS

If you don't mind having beavers on your property but don't want the nuisance problems associated with beavers, there are several options.

Fencing

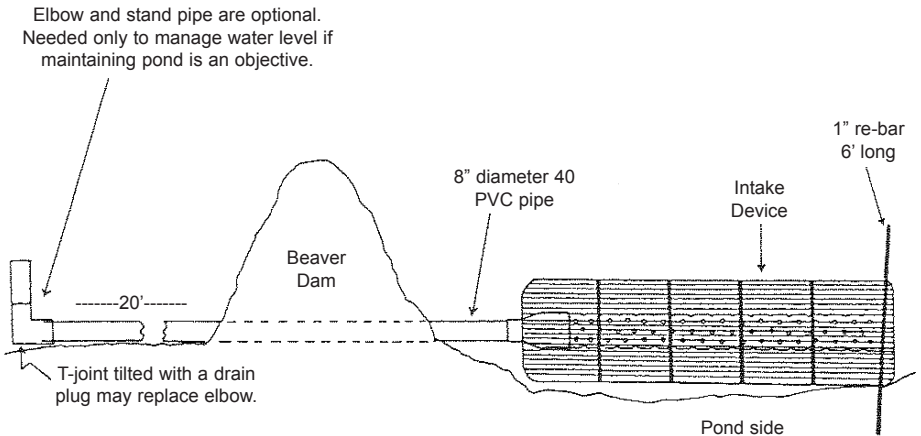
If you have a small area of trees or plants to protect, a perimeter fence may be the best choice. Constructing a rigid fence or an electric fence along the shoreline or perimeter of the area to be protected will exclude beavers. The bottom of a rigid fence should be buried into the ground while the top of the fence is at least 3-feet high. An electric fence should be placed approximately 8-10 inches off the ground. A perimeter fence also will help with other chewing problems like those caused by rabbits, rats and mice.

Fencing may be an appropriate solution when beavers are plugging up drain-pipes and culverts. Using #6 gauge cement reinforcing wire mesh staked in a rounded fashion well into the ground at a distance beyond the end of the drain-pipe will discourage beavers from plugging up the drain pipe directly. However beavers may just build up against the fence and still cause flooding problems. The addition of a drainage device incorporated in the fence will provide continued water control even with a dam built up against the fence.

Wire fencing certainly is the most efficient method to protect individual trees. A rigid welded wire fence using a 2x4-inch mesh or smaller or ¼-inch hardware cloth is often effective in preventing beaver damage. Wrap the fence around the base of the tree with the bottom firmly staked to the ground and the top of the fence at least 3-feet high. Be sure to leave 2-3 inches between the tree and the fence so the tree has room to grow.

Drainage Devices

Probably the most effective device to control water levels in a beaver pond situation is the Clemson beaver pond leveler. Developed at Clemson University, it has proven effective in allowing continual water flow and facilitating the manipulation of water levels in beaver ponds for moist-soil management that is beneficial for migratory waterfowl and shorebirds.



Clemson Beaver Pond Leveler

The Clemson beaver pond leveler consists of a 10-inch diameter perforated PVC pipe encased in heavy-gauged galvanized hog wire. The encased portion is placed upstream of the dam or blocked culvert in the deepest part of the stream.



It is connected to non-perforated sections of PVC pipe that are run through the dam or culvert to a water control structure downstream. To manipulate the water level of the pond, attach an elbow to the downstream end with a pipe extending up to the desired water level. The Clemson beaver pond leveler works best in relatively flat locations. It is effective because beavers cannot detect the sound of falling or flowing water as the pond or culvert drains. Therefore, they do not try to plug the pipe.

A "3-log drain" may be one of the most cost-efficient methods to permit water flow through a beaver dam. To construct this drain, fasten together three logs approximately 6-9 inches in diameter and 12-16 feet long. Logs should be wired together with 2 logs side-by-side and 1 on top forming a triangle. A piece of light gauge sheet metal (or old roofing tin) should be wrapped around the logs to act as a pipe to permit water to flow between the logs. Place the three logs in the dam with the upstream end of the logs at least one foot lower than the downstream end. It is recommended to punch several holes in the top piece to improve water flow. Beavers may build over the ends of the 3-log drain resulting in frequent maintenance, so longer logs are suggested.

Variations on the 3-log drain include substituting PVC sewer pipe for the three logs. Use perforated PVC (upstream end) connected to solid PVC (downstream end). No sheet metal should be needed with this modification. Cap the upstream ends or cover them with wire to keep debris from clogging the pipes.

In many instances especially in roadways, culverts are placed large enough to handle the hydrologic needs of that area. However, recent evidence suggests installations of oversized culverts in areas where beavers are present will minimize the tendency of beavers to block culverts. Culverts should be enlarged to at least a size that maintains the natural stream width. Oversized culverts may not be a practical solution for established roadways but should definitely be considered when constructing new roads where beaver exist.

An important point to consider before installing any type of drainage device is how beavers will react to the device. Oftentimes if beavers cannot plug a drainage device or a leaking dam, they will simply build a dam in another location.

Repellents

Using repellents to alleviate beaver damage is practical only on a small scale, is extremely short-term and its effectiveness is uncertain. Individual trees or small areas of high value crops can be treated with repellents to keep beavers from chewing. However, there are very few -if any- repellents that are practical, effective, environmentally safe and registered for beavers. Commercial deer repellents like Hinder and Ropel may be used but their effectiveness on beavers is questionable.

Dam and Lodge Removal

Beavers are highly industrious. Therefore, removing dams and lodges has little impact on deterring beavers from an area. Dam removal is a laborious and expensive task. Often dams will be repaired by the next day. Continuous destruction of a dam will sometimes, depending on availability of construction materials, cause beavers to move to another site. However, displaced beavers may be even more troublesome at their new location. Therefore, dam removal is not effective unless the nuisance beavers are removed.

LETHAL CONTROL METHODS

As mentioned previously, there is no closed season on beavers in Georgia. Therefore, you may trap or shoot beavers year-round, day or night. To eliminate beaver problems, the most effective and efficient method is to kill beavers either by shooting or trapping.

Shooting

Shooting beavers can be an effective and cost-efficient control method. However, this option may not be available to those within city limits. Beavers are primarily nocturnal, meaning they are mostly active at night. Therefore, the best time to shoot beavers is at dusk. To shoot beavers at night will require some preparation. Locate the lodge or den and any active feeding stations. Additionally, tear out a portion of the dam prior to shooting. Position yourself near the lodge, feeding station or dam and simply wait for the beavers to appear at dusk. As darkness falls, a 6-volt light will aid in seeing the beavers and likely will not spook them. If you wait until a full moon night you may not even need a light! Beavers do not see well above water, so it usually isn't necessary to hide as long as the shooter stays motionless. If possible, shoot from an elevated position for safety and efficiency. At short range, a shotgun loaded with heavy steel shot (#2 shot or larger) or a .22-caliber rifle is recommended. Remember, there is a danger of ricochet when shooting around water so take proper precautions and know your surroundings. It is advisable to contact the local WRD Conservation Ranger before shooting at night.

Trapping

In the majority of situations, trapping is the most effective, practical and environmentally safe method of beaver control. Success depends on the trapper's knowledge of beaver habits, use of proper traps for the situation and trap placement. For this reason, Wildlife Resources Division (WRD), Game Management Section offices maintain a list of licensed nuisance trappers. In most cases, licensed trappers are experienced in trapping beavers and will be happy to assist you with beavers and other nuisance problems. Typically, a fee for their service is required. However, if you choose to trap on your own, a variety of sizes and types of traps may be obtained from your local hardware store or you can contact a WRD Game Management Section office for information on purchasing traps and trapping suggestions.

Besides eliminating beavers, trapping is extremely beneficial when managing beavers for a desirable population level. The trapping methods discussed below are designed to be lethal. It is possible to catch beavers in a live or cage trap, but is extremely difficult. If beavers are trapped alive, it is not recommended or legal to relocate beavers without the landowners permission. Few people are willing to have beavers released on their property plus diseases and parasites associated with the animal may be spread.

If you decide to trap in Georgia, remember:

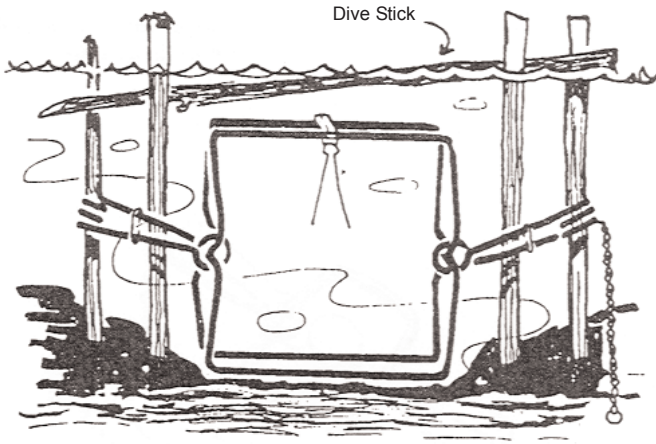
- Traps must be tended at least once each 24-hour period.
- Traps and snares must be labeled with the owner's name or owner's permanent trapper's identification number provided by the department.
- Foot-hold traps for beavers must be smooth or rubber jaw steel.
- Body gripping traps in excess of 9-½ inches square must be used in water or within 10 feet of water.
- Snares must be used in water or on land within 10 feet of water.

For a description of all the trapping regulations in Georgia, contact your local WRD Game Management Section office. Trapping regulations also can be found on the WRD Web site at www.gohuntgeorgia.com.



Example of a snare

Example of a 330 Conibear beaver trap



For beavers, the most popular and effective trap is the 330 Conibear, a body-gripping trap. Designed for water use, this lethal trap is not likely to capture non-target animals such as dogs and cats. It is effective in deep and shallow water. Lodge or den entrances, narrow channels, dams, natural inlets or trails worn by beavers are excellent places to set this trap. When setting this trap, place sticks in the ground surrounding the trap to restrict movement and funnel beavers into the trap. A dive stick should be placed on the surface of the water to trigger beavers to dive deeper and swim through the trap. To increase success, use bait (such as willow or cottonwood sticks) and lures (such as castor gland) to attract beavers. "Setting tongs" may be required to set the trap. Because this trap exerts tremendous pressure and impact when tripped, appropriate care must be exercised when using it to keep from injuring hands or arms.

Snares can be easily and effectively set in the water or on beaver trails at or near the water's edge. Advantages associated with snares are that they can be used to catch beavers alive for later dispatchment and otters are less likely to be caught in them. Snares should be made from a 4-5 foot length of 3/32" cable and a small piece of angle iron, which allows the snare to tighten but not loosen. Construct an 8-10 inch loop for the snare with the bottom either on the ground or 1-inch above the ground. Use a 14-gauge support wire long enough to run from a stake to the snare itself to keep beavers from leaving with the snare. A properly anchored snare is essential because beavers are powerful animals and can easily chew or pull out of an improperly anchored snare. Once caught, snares can be set with a drowning line to euthanize caught beavers. Snares can easily be made at home or purchased commercially. However, for the beginner, snares probably should be bought from a trapping supply company.

Experienced trappers have used foot-hold traps for many years. However, for the novice, foot-hold traps are not the best choice. If you choose to use a foot-hold trap, a minimum jaw spread of 6-inches is best. Traps are positioned in similar locations to that of body-gripping traps and snares. Beavers are powerful animals and to prevent them from escaping, drowning sets must be employed. The most common drowning technique is to use a "slide-wire" with one end fastened underneath the water. With the trap chain attached to the wire through a piece of angle iron, the trap will slide freely down the wire, holding beavers underwater. Traps set in this fashion are most effective when set where beavers enter or leave the water.

Finally, if you choose to use trapping as a beaver management technique, it is best to contact the local WRD Game Management Section office for guidance on purchasing and setting traps and trapping suggestions.

SUMMARY

The landowner should decide whether the beneficial aspects (waterfowl habitat, hunting and fishing opportunity, non-game animal habitat, flood prevention, irrigation potential) of having beaver on their property outweighs the possible harmful aspects (flooding timber, pasture, or croplands, damage to roads, destruction of ornamental trees or shrubs) prior to using control measures. If action is needed, take the time to carefully choose an appropriate and legal control measure for the situation.

For information on locations to purchase nuisance abatement equipment or trapping supplies, a list of nuisance trappers in your area, or if you have additional questions and are unable to resolve nuisance beaver issues, contact the local WRD office (numbers listed at the beginning of this booklet). In addition, the United States Department of Agriculture, Wildlife Services (706-546-5637) can be contacted to provide professional, on-site assistance with beavers or other nuisance wildlife problems.



Landowners should decide whether the beneficial aspects of beaver dams on their property outweighs the negative aspects prior to using control measures.



Example of typical beaver cuttings in Georgia



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