WILDLIFE DAMAGE
Publication Series

WARNELL
SCHOOL OF FORESTRY AND NATURAL RESOURCES
THE UNIVERSITY OF GEORGIA

WDS–09--11 July 2009

Managing Wildlife Damage: American Beaver (*Castor canadensis*)

Aaron Hecht[1] and Michael T. Mengak[2]

INTRODUCTION

The beaver (*Castor canadensis*) is North America's largest rodent. It inhabits streams, ponds, and lakes throughout most of North America. They are widely known for building dams, canals, and lodges. By the end of the 19th century, beavers were near extinction in Georgia, as well as most of North America, through unregulated trapping and habitat loss. With the advent of hunting and trapping regulations and other wildlife management programs in the 1900s, the beaver has made a remarkable recovery. Today it is a nuisance in some situations. Dam building activities by beaver can flood timber, pasture, and crops. Beaver can cause severe damage to corn, ornamental trees, timber, culverts and roads. Property damage can exceed tens of thousands of dollars per year. However, beaver have a beneficial side as well. Beaver ponds create valuable wetland habitat for many species of fish, frogs, toads, salamanders, songbirds, wading birds, ducks and geese, and numerous mammals.

TAXONOMY

The genus name, *Castor*, is derived from a Greek word "kastor" meaning beaver. The species name, *canadensis*, is Latinized for "of Canada," the location of the first beaver to be scientifically described.

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Rodentia
Family: Castoridae
Genus: *Castor*

[1] Graduate Research Assistant, Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA
[2] Associate Professor-Wildlife Specialist, Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA

STATUS

American beaver are abundant and widely distributed in Georgia. They are considered a nuisance in some situations. There is no closed season on beavers in Georgia. They may be trapped or shot year round, day or night.

DISTRIBUTION

Beavers are found throughout most of North America, excluding the high arctic tundra, peninsular Florida, and southwestern deserts. Present in areas with year-round water flow, beavers inhabit streams, lakes, farm ponds, wetlands, freshwater tidal creeks, and low lying land and swamps along flood prone creek and river bottoms. They can also inhabit roadside ditches, drainage ditches, and sewage ponds, and are becoming more abundant in urban areas. In Georgia, beaver are found statewide.

Figure 1. Distribution of beaver in North America

NATURAL HISTORY

Identification. In the wild, beavers generally live 10 to 12 years, but can exceed 19 years in captivity. In Georgia, adult beavers average 35 pounds in weight and in extreme northern latitudes can exceed 100 pounds. They have adapted well to the semi-aquatic environments they live in. They have large webbed feet for swimming and a split claw in the hind foot used for grooming.

Perhaps the most noticeable characteristic of the beaver is their tail. Beavers have a flat tail that is used as a rudder when swimming or as a warning device when slapped on the water. This behavior alerts neighboring beavers of danger. On land, beavers use their tail for stability while feeding or chewing trees. They close valves in their ears and nose when submerged, to prevent water from entering. Beavers are also capable of chewing submerged wood without getting water in their mouth by tightening their lips behind their protruding front teeth.

Habitat. Beavers live in semi-aquatic environments and need 2 to 3 feet of water year round for survival. They inhabit streams, ponds, and the margins of lakes throughout most of North America, excluding the arctic tundra, peninsular Florida, and southwestern deserts. Beavers modify their habitat by controlling water levels on streams, ponds, and lakes by building dams.

Reproduction. Beavers are not sexually dimorphic. Distinguishing between a male and female can be difficult and requires a thorough physical examination. They are social animals that live in colonies consisting mainly of family members. They breed once a year, generally in January and February. They have a 107-day gestation period and usually give birth in May or June to three or four young called “kits”.

Feeding. Beavers are herbivores with variable feeding habits. Their diet varies depending on the season. In the winter, they feed on woody vegetation including sweetgum, ash, willows, popular, cottonwoods, pines and fruit trees. In the spring, they seek out aquatic plants and green shoots of many species.

Behavior. Beavers are social animals and active throughout the entire year. Generally, they are most active for 2-3 hours around dusk and dawn. They are territorial animals. A colony will consist of two adults, young of the year and subadults from the previous year. A colony will establish a territory and defend it from members of other colonies. Defense rarely involves fighting or actual contact. Rather, territories are marked to indicate occupancy or "ownership". Scent mounds are the primary means of marking a territory. The scent mound is a pile of leaves and mud. Both male and female beaver will deposit an oil secretion called "castor" from castor glands located near the anus onto the leaf pile. Scent mounds are located along trails near the water. Families can occupy 0.5 miles of a stream with 200-250 yards between families. Young usually disperse from their colony during the spring of their second year. Individuals can travel a mile or more seeking an unoccupied territory before settling down and forming a new colony.

Predators. Coyotes, bobcats, fox, and occasionally large birds of prey are predators of adults and young beavers in Georgia.

DISEASE

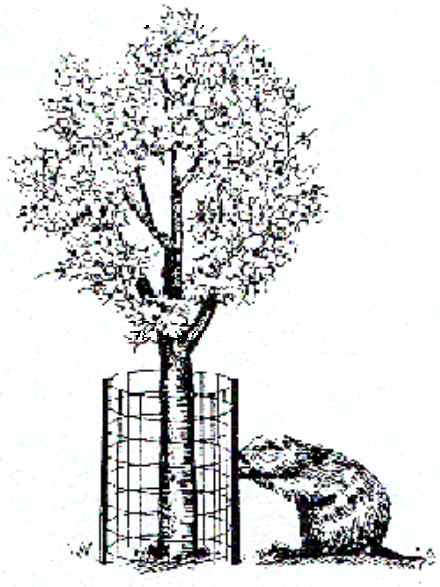
In the northern United States tularemia, an infectious bacterial disease has been reported several times in beaver populations. Tularemia has never been document in beavers in the Southeast. Beavers are also susceptible to infection by protozoan parasites in the genus *Giardia*. Giardiasis is zoonotic and a common cause of gastroenteritis and diarrhea of humans. Due to the possible presence of this parasite in native water, campers, hunters and hikers should treat all water by filtering or boiling before use.

ECONOMIC VALUE

Beavers were vital to economic growth in the 1600-1800's. Their fur was used to make hats, coats, and sometimes used as currency. Oil from their castor glands was an essential component in manufacturing perfumes. Beaver coats were extremely desirable in the 1700's and 1800's making the beaver the most intensively sought natural resource in the United States.

DAMAGE ISSUES

Annually, beavers account for in excess of $100 million dollars of damage in the southern United States. Damage varies by geographic location and amount of human activity. In urbanized areas, damage includes flooding of agricultural crops, destruction of trees, and unwanted flooding of private land. Road damage due to blocked culverts is another common form of damage induced by beavers in many areas. Controlling the number of beavers is the most effective means of minimizing beaver damage in an area of high beaver density.



Medicinal Value

None

Legal Aspects

Beaver are not protected in Georgia. There is no season or bag limit.

CONTROL

Exclusion. A rigid or electric fence along a shoreline or pond perimeter will exclude beavers. The bottom of the rigid fence

should be buried and the top should be at least 3 feet high. Rigid fences can be constructed of welded wire or chain link. Electric fences should be placed 8-10 inches off the ground. Fencing works very well to prevent damage induced by plugged drainpipes and culverts. Groups of shrubs or trees can be protected with 36-inch high fences made of welded wire, woven wire or 12 inch high tensile electrified wire with a minimum of three strands of wire spaced at 4-inch intervals.

Toxicants. There are no registered toxicants available.

Repellents. Commercial repellents sold for deer and rabbits may have limited use for deterring beaver damage. A paste of mud and course sand spread on tree trunks may deter gnawing.

Drainage Devices The Clemson beaver pond leveler is probably the most effective device to control water levels in beaver ponds. Developed by Clemson University, it has proven effective in some situations at allowing continuous water flow and manipulating water levels in beaver ponds. Other devices such as a "3-log drain" and 8-inch plastic pipe with numerous holes on the inlet side can also be effective at controlling water level. Plans for constructing and installing these devices can be found on numerous Extension webpages.

Beavers will often build a new dam over the inlet of the water-leveling device. Sometimes they will build further up or down stream requiring additional control activities. Installation of a drainage device is often most effective if incorporated with population reduction. Monitoring of the site for new beaver activity will allow a landowner to stay ahead of a beaver problem.

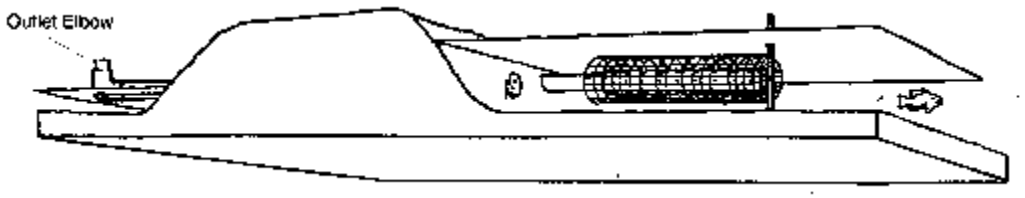
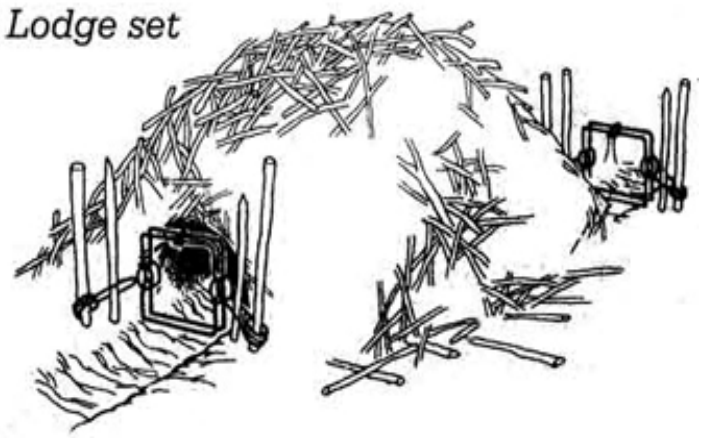


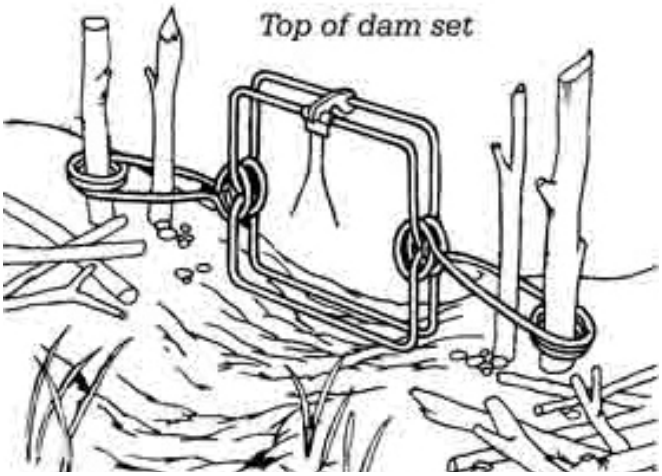
Figure 2. The Clemson Beaver Pond Leveler. The pond level is regulated by turning the swiveling elbow at the outlet. Here, the elbow is turned so that the outlet is pointed up, causing the pool level to rise above the baffle.

Trapping. Another effective way to control beaver damage is by trapping. An experienced trapper can use steel leg-hold traps, snares, Conibears, or live traps. Traps should be placed in an area of frequent travel, such as beaver slides. If you use Conibears, which kill the animal quickly, use a 330 Conibear. All traps should be checked twice daily. Always check local trapping laws and obtain the necessary permits and licenses. Before relocating a captured animal to other suitable habitat, check with your local state wildlife agencies for further instructions in your state. Relocating beavers may not be considered humane and is not recommended in most states.

Lethal Control. Sharpshooting is another option for reducing beaver damage. When shooting can be carried out safely, this is the most effective way for landowners to control beaver damage. Use of

shotguns is recommended and 12 gauge shotguns with No. 4 and No. 6 shot are often used. Shoot only from elevated stands when using rifles or the bullet may ricochet. Using rifle on flat water, like a pond, is not recommend but may be safe along streams or wetlands with dense cover.





Further Readings

D'Eon, R. G. and others. 1995. The Beaver Handbook: A guide to understanding and coping with beaver activity. Northeast Science and Technology, Natural Resources, Canada, NEST Field Guide FG-006.

Gregory, D. and G. Waters. 2002. Beaver Management and Control in Georgia. Georgia Department of Natural Resources Wildlife Division publication.

Jenkins. S. H. and P. E. Busher. 1979. *Castor canadensis*. Mammalian Species. American Society of Mammalogists. No. 120, 8 pages. http://www.science.smith.edu/departments/Biology/VHAYSSEN/msi/

McNeely, R. 1995. Missouri's beaver: A guide to management, nuisance prevention, and damage control. Missouri Department of Conservation. Jefferson City, Mo 30 pages.

New York State department of Environmental Conservation www.dec.ny.gov/animals/6992.html

Warnell School of Forestry and Natural Resources
Athens, Georgia 30602-2152
Telephone 706.542.2686 Fax 706.542.8356

In compliance with federal law, including the provisions of Title IX of the Education Amendments of 1972, Title VI of the Civil Rights Act of 1964, Sections 503 and 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, the University of Georgia does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, disability, or military service in its administration of educational policies, programs, or activities; its admissions policies; scholarship and loan programs; athletic or other University-administered programs; or employment.. In addition, the University does not discriminate on the basis of sexual orientation consistent with the University non-discrimination policy. Inquiries or complaints should be directed to the director of the Equal Opportunity Office, Peabody Hall, 290 South Jackson Street, University of Georgia, Athens, GA 30602.Telephone 706-542-7912 (V/TDD).Fax 706-542-2822