

## MANAGING WILDLIFE DAMAGE: NUTRIA (*Myocastor coypus*)

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### Introduction

Nutria (*Myocastor coypus*) are large semi-aquatic rodents native to South America. Nutria were first introduced into captivity by the US fur industry in 1889. When the experiment failed in the 1940's, captive nutria were released from fur farms to the wild. These releases have resulted in many of the wild populations present today. Additionally, state and federal agencies moved nutria across the Southeast as a means to control unwanted aquatic vegetation. This is a role they perform too well. Nutria will consume aquatic plants to the point of eradication. They often remove valuable food and cover for other species. They can be a threat to agricultural resources.



### Taxonomy

Order Rodentia – Rats and Mice  
Family Myocastoridae – Nutria  
Nutria – *Myocastor coypus*

There is only one genus in the family Myocastoridae. Early Spanish explorers to South America believed the nutria was related to the European otter. They named it “nutria” – the Spanish word for otter. The genus name – Myocastor – translates to “mouse-beaver” – a reference to the long, scaly tail and semi-aquatic habits.

### Status

In Georgia, nutria are not protected and may be taken anytime during the year.

### Description

Nutria are semi-aquatic bank dwellers usually found near rivers, marshes, lakes, ponds, and flooded fields. They may be mistaken for beaver or muskrat. However, nutria are larger than a muskrat

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and smaller than a beaver. They have a round, lightly haired tail. The outer guard hairs are dark brown to yellow-brown and overlay dense, gray underfur. The forelegs are short compared to the hindlegs, which results in a hunched appearance when moving on land. The forepaws have five toes, of which one is reduced in size. Sharp claws are used in excavating burrows, grooming, and gathering food. The hindfoot contains four webbed, clawed toes and one unwebbed toe. Adult nutria weigh about 15-18 pounds with males a few pounds heavier than females. Typically, males are slightly larger than females. Average body length is 24 inches with a 13-16 inch tail. The nose and mouth are covered by a valve to prevent water from entering when they dive.

**Tell Tale Tails and Sign.** Distinguishing nutria, muskrats, and beaver can be difficult. These suggestions may help you decide which animal is living in your pond or wetland. A beaver's tail is flat and unique – you will not mistake it for any other animal. If the animal is out of the water and the tail looks like a big, thick, hairless rat tail then it is a nutria. A muskrat's tail is smaller than a nutria's; it has more fur than a nutria's and is flattened vertically while a beaver tail is horizontally flattened. Also, a muskrat uses its tail like a propeller, thrashing back and forth in the water, to push the animal through the water. Generally, when a nutria is swimming, you will not see its tail. If you do, it will not be moving very much; nutria propel themselves more often with their feet.

A muskrat and beaver have solid dark brown heads; a nutria has big, white whiskers. They are easy to spot even when swimming. Also, nutria often have a lot of gray hair around their mouth. Sometimes it is easy to see a patch of lighter fur, often tan to orange, at the base of the nutria's ears. One last thing, a beaver and muskrat often swim with a distinct purpose and in a nearly straight line. A nutria will sometimes just float on the water.

## **Ecology**

**Habitat.** Nutria are found along rivers, ponds, marshes, and sloughs. The greatest concentrations occur in coastal, freshwater marshes. Nutria require water and abundant emergent aquatic vegetation for feeding. They are adaptable to a wider variety of conditions than previously thought.

Nutria construct circular platforms of compacted, aquatic vegetation. These floating platforms are used for feeding, resting, birthing, and grooming. Often misidentified as muskrat houses, these platforms may reach heights of three feet. In the warmer months, they primarily live on the ground in dense vegetation. During other times of the year, they utilize underground burrows. Burrows are typically located in embankments, levees, and dikes. They may dig their own burrow or simply use an abandoned beaver or muskrat burrow. The burrow entrance is usually located on steep-sloped banks covered with vegetation and adjacent to water. Burrows may be as simple as a tunnel with one entrance, or they may have several entrances connected by a series of tunnels. Each tunnel system contains compartments located above the water line with ledges used for shelter, feeding, and resting. Burrows may be used by individuals or family groups.

**Reproduction and Biology.** Nutria are prolific, year-round breeders. Sexual maturity may be reached as early as 4 months of age. The gestation period for nutria is approximately 130 days. Individuals can produce two litters per year. Litters may contain up to 13 young, but average 5. Litter size varies according to habitat quality, season, and female age. Smaller litters occur in winter and among young females in poor habitat. The young are precocial meaning they are born fully furred with their eyes open. Young are able to swim and feed on vegetation within hours of birth, but will also nurse for 7-8 weeks.

Nutria may live up to six years in the wild. Freezing weather is a major limiting factor for populations. Up to 85% mortality has been reported following a few days of subfreezing temperatures. Fluctuations in water level, disease, and predation may also limit populations. Major predators include bald eagles (*Haliaeetus leucocephalus*), great horned owls (*Bubo virginianus*), alligators (*Alligator mississippiensis*), coyotes (*Canis latrans*), river otter (*Lontra canadensis*), and humans. Nutria carry the nematode *Strongyloides myopotami* which causes a severe rash called “marsh itch” in people who frequently handle nutria fur. The rash is caused by the larval form of the nematode penetrating the skin.

**Behavior.** Nutria move easily on land, but spend the majority of their feeding hours in the water. Primarily nocturnal, daytime movement may increase when food is limited or in response to freezing temperatures. Home range for nutria in the south is approximately 32 acres. However, in agricultural areas they may travel longer distances to take advantage of crop availability. Nutria rely primarily on hearing to detect danger because their eyesight is relatively poor. When threatened, they retreat to the water where they can remain submerged for several minutes.

**Food Habits.** Nutria consume up to 25% of their body weight daily. Food consists of aquatic and semiaquatic vegetation. Nutria are opportunistic feeders. They consume agricultural crops including clover, alfalfa, and root crops (carrots, cabbage, sweet potatoes). Mussels and crustaceans along with insects are sometimes consumed while eating plants. Unlike the native beaver and muskrat, nutria often feed on the base of plant stems. This reduces the plant’s ability to survive and may have a negative impact on aquatic plant communities.

**Range.** Nutria have been reported in 40 states, with the southern Gulf Coast having the highest density.

**Damage and Economic Impact.** Nutria cause damage throughout their range, but most damage occurs along the southern Gulf Coast. Estimates of annual damage exceed \$1 million. Nutria also have a positive economic value through income paid for pelts. In 2006-07, Louisiana trappers collected 375,683 nutria worth \$1,878,415. The income from trapping should be compared with the cost of damage when determining management plans for nutria control.

Nutria can damage levees, banks, and roadbeds by burrowing. This burrowing may weaken the structures leading to failure and requiring costly reconstruction. Burrowing under roads may weaken the substrate causing the road to collapse under the weight of machinery. Nutria are known to gnaw on cables exposed aboveground for short time periods during installation. Additionally, stream bank burrows may lead to increased erosion and destabilization.

When present in high densities, nutria may degrade native plant communities by overgrazing. Studies have found a reduction in aquatic vegetation diversity in marshes with abundant nutria populations; for example, flowering rush (*Butomus umbellatus*) and cowbane (*Cicuta virosa*) often become rare in the presence of nutria. The reduction or elimination of native plant communities may have severe impacts on wildlife that depend on the presence and variety of aquatic vegetation. In addition, a reduction in vegetation may cause an increase in erosion by eliminating the plants that stabilize wetland soils. Wetland plants form thick root mats which aid in trapping soil and their loss and the loss of the root mat could increase erosion. Overgrazing by nutria can also impede restoration of bald cypress, remove cover used by ground nesting birds, and facilitates the spread of the invasive plant purple loosestrife (*Lythrum salicaria*). Larger populations of nutria also can compete with and displace the native muskrat (*Ondatra zibethicus*) as well as compete with native wetland and marsh birds for food.

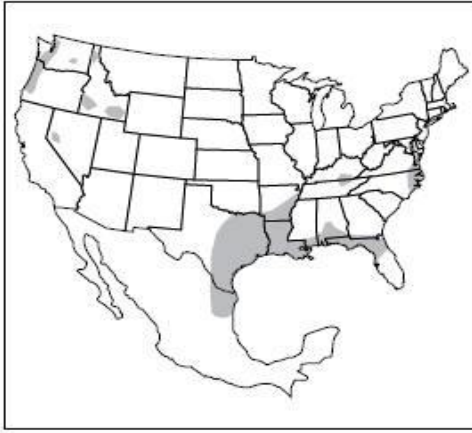


Figure 1. Range of nutria in North America.

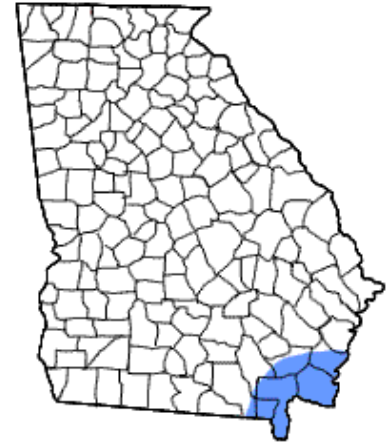


Figure 2. Range of nutria in Georgia.

Nutria can have a negative impact on agricultural crops. Corn, rice, beets, sugar cane, grains, peanuts, and vegetables have sustained documented damage. Nutria also girdle fruit trees and trees planted for timber production. In residential areas, damage has occurred to ornamental plantings as well as to sod.

## Control and Management

Presence of nutria can be confirmed from several lines of evidence. Look for sign such as burrows, resting structures, trails on banks, feeding platforms, gnawed vegetation, diggings for roots, and droppings. A variety of options exist for preventing or controlling nutria damage. When possible, the first step should always be prevention through habitat modification or exclusion.

**Habitat Modification.** Nutria are attracted to weedy, wet areas. In agricultural settings, well drained fields with a minimum of excess vegetation will discourage colonization by nutria. Gardens and nurseries should be located well away from wet areas inhabited by nutria. Repeated deep plowing of land that has been burrowed by nutria will destroy burrows and discourage new activity. Gently sloping banks are unattractive to nutria for burrowing purposes. To discourage burrowing, stream banks, levees, and drainage ditches may be graded to slope below 45 degrees (1:1 slope). If possible, lower slopes of 2:1 or 3:1 will be even more effective in deterring burrowing activity. In settings where water level can be manipulated, water level should be lowered in the summer to encourage emigration to other habitat. In winter, levels should be raised to flood nutria out of their burrows and expose them to cold weather.

**Exclusion.** Exclusion devices are very effective in preventing nutria damage, though their implementation may be too expensive on an agricultural scale. Woven-wire fences with the base buried at least 6 inches in the ground will effectively exclude nutria from lawns and residential gardens. Electric fences are effective in the same setting when the wire is placed approximately 6 inches off the ground. To protect individual trees from girdling, sheet metal may be wrapped around the base of the tree. Stands of seedlings may be protected by installing wire mesh fencing around the stand or by placing hardware cloth tubes around individual seedlings. Nutria may be discouraged from burrowing in banks by the presence of riprap. Gabions are wire baskets filled with rock and used to construct a wall along a bank. Gabions have been used successfully to discourage burrowing but this practice is expensive.

**Repellants.** No chemical repellants are registered for nutria. Frightening and harassment devices may be used but are likely only effective in the short term. Problem animals typically return bolder than before.

**Toxicants.** Zinc phosphide, a restricted use pesticide, is the only toxicant registered for use on nutria. Zinc phosphide may only be purchased and used by certified personnel or under their direct supervision. It is a dark gray powder used to control rodents that poses little risk to non-target species when properly applied. Contact your state USDA-APHIS-Wildlife Services office or Cooperative Extension Service office for information and assistance on treating nutria with zinc phosphide.

**Trapping.** Trapping is an effective method for reducing nutria damage and should be an integral part of any nutria management plan. In one case it took an intensive trapping campaign conducted over a 10-year period to eradicate nutria. A list of trappers may be obtained from state wildlife agencies or county Cooperative Extension Service offices. Leg-hold traps are commonly used in nutria management. Most trappers prefer No. 11 or 2 double longspring traps. Additionally, the No. 3 double longspring and No. 1½ coil spring may be used. Leg hold traps are highly recommended for nutria work due to their efficiency and versatility when compared to body-gripping traps. Leg hold traps are effective when baited and placed on the bank or on prebaited rafts. Bait (sweet potatoes or carrots) should be placed beside the trap jaws and the trap should be rigged as a drown set or securely staked. Body gripping traps, such as 220 conibears, are also effective in controlling nutria. Conibear traps should be placed in trails, den entrances, culverts, or anywhere movement is concentrated. Live traps 9 x 9 x 32 inches or larger are also used to remove nutria. Live traps are effective when nutria are to be translocated or impacts to non-target animals are a concern. Unwanted animals may be promptly dispatched while in the trap.

Snares are effective when the use of other traps are prohibited. Snares are safe, easy to set, and nearly invisible to humans. For nutria use, locking snares with a 3/32-inch diameter, flexible cable are recommended. Snares should be set in areas of concentrated use much like conibear traps. Nutria caught in snares must be dispatched by a shot or blow to the head.

**Shooting.** Shooting is a very effective nutria control method, potentially removing up to 80% of the animals in an area. Nutria may be shot from elevated platforms while they are on the bank or from a boat using a 22-caliber rifle, or a shotgun using No. 2 or larger shot. If using a 22-caliber rifle, do not shoot over water to avoid the risk of ricochet. The best times for shooting are early and late in the day, as well as at night where legal. The use of a “maw” call may stimulate nutria to respond vocally or investigate the source of the call, providing the shooter with an opportunity. The use of bait stations can efficiently congregate nutria for collection. Bait may be placed on floating rafts or bait boards for a few days and continuously illuminated by spotlight the night of the collection. All shooting methods decrease in effectiveness over time, so shooting operations are most effective when preceded by 2-3 weeks of no activity.

## **Further Reading**

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## Useful Websites

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<http://www.nutria.com/site2.php> <http://www.ces.ncsu.edu/nreos/wild/pdf/wildlife/NUTRIA.PDF>

<http://biology.usgs.gov/invasive/factsheets/Nutria%20damage%20control.pdf>

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