

INVASIVE SPECIES: NUTRIA

Introduction

The wetlands that fringe our coastal estuaries, rivers and floodplains perform many valuable functions contributing to the health of our watersheds. In many cases around the country, these wetlands are disappearing at alarming rates. Louisiana, for example, has lost about 25 square miles of coastal land each year from 1983 - 1990. Subsidence and compaction, natural parts of the delta cycle, are the primary causes of the sinking of Louisiana's coastal lands and of the subsequent retreat of Louisiana's coastline. However, land loss rates in Louisiana are influenced by a number of other factors, including the grazing of marsh vegetation by a large population of an invasive species, the nutria. Besides accelerating coastal land loss, this exotic species is also responsible for the decline of the muskrat, a species native to the Gulf Coastal Plain.



Nutria, *Myocastor coypus*, are large South American rodents that have a stocky body, short neck, webbed feet and inch-long, dark orange incisors. Known in some places as "swamp beavers," these semi-aquatic rodents are found in a variety of wetland habitats, ranging from marsh (salt, brackish, intermediate and fresh) to freshwater forested wetlands. Nutria reach sexual maturity at six months of age and breed year-round with an average litter of four to five offspring. Although the young are nursed, as are other mammals, baby nutria also begin to feed on marsh grass days after birth. Adult nutria weigh about 15 pounds and have a plush, velvety fur beneath their coarse guard hairs.

A Historical Nuisance

It is the quality of nutria fur that first inspired people to bring them from South America (Argentina and Chile) to North America in the late 1800s. Fur-farming attempts failed due to high mortality rates and low reproductive success in captivity. Accidental and intentional releases led to the establishment of wild populations of nutria in at least 15 other states. Sightings have been reported in 40 states and three Canadian provinces. While nutrias have



made their way to many watersheds in the United States, Louisiana has the unfortunate distinction of hosting the largest wild population of this animal. Recent estimates put the population of nutrias in southeast Louisiana as high as 6,000 animals per square mile.

Nutrias have a body similar to a large rat and a head that resembles a beaver. They are easily identified by their hairless round tail and four large front teeth that are bright orange in color. Their soft, grayish-brown underfur is covered by coarse brown guard hairs.

The hind feet of a nutria are webbed making them excellent swimmers. Full-grown, nutrias weigh between 12 to 16 pounds. Nutrias are vegetarians and will graze upon a variety of wetland plants, including water hyacinths (another exotic species), cypress seedlings, cordgrass and duckweed. Nutria have also been known to feed on lawn grasses and shrubs in residential areas.

This large population of nutrias got its start in 1937 on Avery Island, the home of Tabasco hot-sauce magnate E. A. McIlhenny when McIlhenny imported a handful of nutria to begin a fur farm. The animals readily adapted to their new home and successfully bred in captivity. Hurricanes along the Louisiana coast in 1939 and 1940 have been given responsibility for the escape of these animals from several fur farms in the area, including McIlhenny's. It was hoped that the alligator, the only natural predator of nutria, would keep the population in check, but within two years nutria had spread to Texas and Mississippi. The nutria population grew to tremendous numbers, an estimated 20 million animals by the late 1950s (Lowry, 1974), which supported a vibrant trapping and fur industry for several decades in Louisiana. Between 1962 and 1986 Louisiana trappers harvested more than 1 million nutria each year. Around 1986, the fur industry in Louisiana fell on economic hard times, making trapping of nutria economically unattractive. At the same time, reports of nutria damage in the coastal wetlands began to escalate.

Impacts on the Environment

The nutria is a nonindigenous (non-native or exotic) species that has become invasive. Although nutrias live in a burrow on land, they have webbed feet and spend much of their lives in the water. They are marsh dwellers.

At first, when nutria escaped to the wild from fur farms, they did not disrupt the existing ecosystem. However, as time passed and their numbers increased exponentially, nutria began to do serious damage to Louisiana's wetlands.

Many hoped that the natural predators of nutria, such as the American alligator, would eat enough of the rodents to keep the population in check. This simply did not happen. The large populations of nutria continue to cause two types of damage in estuaries in coastal Louisiana: herbivory and burrowing damage.

Herbivory damage. In the late 1980s, increasing complaints from land managers regarding herbivory damage by nutria became routine in southeast Louisiana. A 1993 survey by the Louisiana Department of Wildlife and Fisheries of six parishes (counties) detected 91 damaged areas that covered more than 15,000 acres. "Eatouts," or areas where marsh grass was completely grazed, were easily recognized from the air. Some eatouts measured up to 500 acres in size. Another study, located in the newly forming Atchafalaya and Wax Lake deltas, used exclosures



to document that grazing by nutria and waterfowl seriously slows the development of wetland vegetation in newly forming deltaic environments. Interestingly, duck herbivory created an approximately equal amount of damage as the nutria did to emergent vegetation. However, reduction of duck populations in the marshes of south Louisiana conflicts with the interests of wildlife managers interested in maintaining large duck populations for recreational hunting. In order to maximize growth of newly created marsh environments, control of the nutria population is considered essential.

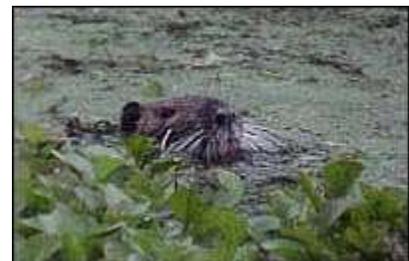
Herbivory damage to emergent marsh grasses is not the only problem caused by nutria appetites. Concerted efforts to regenerate bald cypress forests have largely been unsuccessful due to nutria damage. Nutria herbivory of bald cypress seedlings has been documented since the early 1960s. Nutria find the tender roots of newly planted bald cypress seedlings particularly irresistible. One study by the Louisiana Soil Conservation Service and the Baruch Forest Science Institute of South Carolina found that nutria destroyed 86-100 percent of hand-planted cypress seedlings set out with various types of protective devices. This same study found that chicken wire fencing was most successful in protecting newly planted seedlings, but this protective measure is costly and time-consuming to install.

Nutria burrowing. Nutria burrowing is also causing significant damage in areas of infestation. Large underground tunnels built by nutria have weakened the sides of drainage canals, water impoundments and levees. Nutria overgrazing exacerbates cave-ins and erosion problems in these areas. It is estimated that since 1990 in Jefferson Parish, Louisiana, more than \$8 million in damages to the parish canal system can be attributed to nutria damage. In Florida, nutria burrowing into the banks of golf course ponds has caused cave-ins. Also, large numbers of nutria sunning themselves on some of the golf course's tees, especially in the summer, have scared golfers who often mistake them for giant rats.

Prevention & Control Measures

Methods of directly controlling the nutria population include trapping (e.g., live trapping, leg-hold trapping), poisoning (zinc phosphide is the only chemical approved for nutria) and shooting. Indirect methods include using exclosures, individual tree sleeves or seedling protection, aromatic plantings and rodent repellents (e.g., Ropel). The most cost-effective control measure is trapping, which benefits the economy and lowers the population of nutria in the environment. For trapping to succeed however, pelt prices need to be at a profitable level for trappers.

All lethal methods to control the nutria population are controversial. Shooting is effective to remove small, relatively isolated populations of animals. This technique was employed in an effort to control the nutria population in Jefferson Parish, Louisiana. The Jefferson Parish SWAT team was deployed to practice their sharp-shooting skills in an effort to eradicate, or at least significantly



reduce, the nutria population that was doing so much damage to the parish drainage system. Animal rights groups protested and the nightly sharp-shooting practice was suspended. Recommendations were made to use zinc phosphide (a rodent poison that breaks down quickly in water and kills with one dose), but this option also received a negative response from the public.

In Britain, where nutria were also imported for their fur, major damage to crops, drainage systems and native plant communities led to a decision to begin an intensive 10-year trapping program in 1981. Live traps were set and regularly checked. Other native species caught in the traps were released, and nutria were shot. The program has led to the eradication of nutria in Britain.

Online Resources

- Louisiana Department of Wildlife & Fisheries — www.nutria.com
- University of Michigan. Museum of Zoology. Animal Diversity website. — [http://animaldiversity.ummz.umich.edu/accounts/myocastor/m_coypus\\$narrative.html](http://animaldiversity.ummz.umich.edu/accounts/myocastor/m_coypus$narrative.html)

Print Resources

- Annin, P. 1993. **The Rat That Ate Louisiana: The furry nutria is making a pest of itself.** *Newsweek*, March 8, 1993 edition, p. 67.
- Barrett, M., 1996. **I'll be Here Long After You're Gone** *Coast and Sea*, Louisiana Sea Grant College Program, p. 6-8.
- Conner, W. H., 1993. **Cypress Regeneration in Coastal Louisiana and the Impact of Nutria Upon Seedling Survival.** *Proceedings 13th Annual Conference of Wetland Scientists*, New Orleans, Landin, M. (ed.), South Central Chapter of the Society of Wetland Scientists, p. 130-136.
- Evans, J. 1970. **About Nutria and Their Control.** *Bureau of Sport Fisheries and Wildlife*, Denver Wildlife Research Center, Resource Publication No. 86, 64 p.
- Evers, D. E., C. E. Sasser, J. G. Gosselink, D. A. Fuller, J. M. Visser, 1998. **The Impact of Vertebrate Herbivores on Wetland Vegetation in Atchafalaya Bay, Louisiana.** *Estuaries*, v. 21, no. 1, p. 1-13.
- Gardiner, S. 1998. **Club opens fire on varmints.** *Metro Jacksonville.com*
- Gosling, L. M., S. J. Baker, and C. N. Clarke, 1988. **An Attempt to Remove Coypus (*Myocastor coypus*) from a Wetland Habitat in East Anglia.** *Journal of Applied Ecology*, v. 25, p. 49-62.
- Hesse, I. D., W. H. Conner, and J. M. Visser, 1997. **Nutria, Another Threat to Louisiana's Vanishing Coastal Wetlands.** *Aquatic Nuisance Species Digest*, v. 2, no. 1, p. 4-5.
- The New York Times on the Web Archive, December 14, 1997, [Louisiana is Trying to Turn Pest Into a Meal.](#)
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