SPECIES AT A GLANCE

Nutria

Don VandeBergh, ODFW

REPORT THIS SPECIES!
Oregon: 1 866 INVADER or OregonInvasivesHotline.org;
Washington: 1 877 9 INFEST or www.invasivespecies.wa.gov/report.shtml;
California: www.dfg.ca.gov/delta/mittencrab/sightings.asp

The **nutria** is a large, semi-aquatic rodent native to South America. Nutria were introduced to the United States for their fur. They are often mistaken for beavers but can be distinguished by their smaller size and round tails, which are pointed at the tip (beavers have broad, flattened tails). After a boom in the creation of nutria ranches during the 1930s, nutria escaped or were intentionally released from fur farms in the Pacific Northwest, New Mexico, Louisiana, and other states. They are now considered a threat to wildlife (especially native muskrats), wetland habitat, water quality, and human health.

Species in the news

Case Study: "Shedding Light on Nutria" Portland State University Ph.D. graduate Trevor Sheffels studied nutria's social and ecological impacts. Link to the blog: http://blogs.oregonstate.edu/wise/2014/11/21/interview-trevor-sheffels-nutria-expert/

Learning extensions

"Myocastor Multiplier" lesson plan. See how fast they multiply! Calculate the growth of a nutria population over five years. The lesson plans are available at MenaceToTheWest.org.

Resources

Species guide from the United States Department of Agriculture: http://www.invasivespeciesinfo.gov/aquatics/nutria.shtml

Why you should care

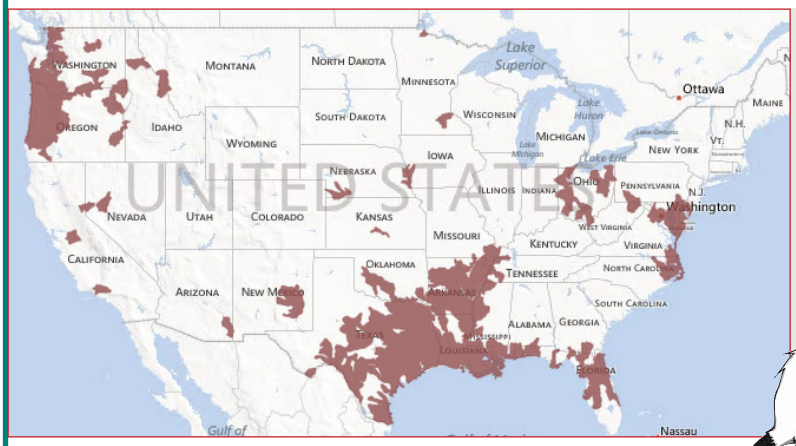
Nutria may look cute, but they are a big problem for wildlife, water quality, and human health. Nutria construct burrows in banks of rivers, sloughs, and ponds, sometimes causing considerable erosion. They heavily graze streamside vegetation, impeding the growth of important native plants and excluding native wildlife. Nutria can also spread disease and parasites to other animals, and even to humans. They carry a parasite that causes "nutria itch," which causes painful skin irritation.

How they got here and spread

Nutria were first introduced to the western United States as early as 1899 for their fur. They escaped or were intentionally introduced into natural and artificial streams, ponds, and rivers.

What you can do

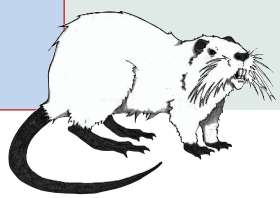
Tell people about the problems nutria cause. Do not feed or go near these giant rodents, because they may carry diseases or be aggressive. Never transport nutria to a new area.



Nutria Invasive Range Map, USGS. Note that this map includes historical populations where nutria no longer exist (e.g., Great Lakes Region, California, Nevada, and eastern Oregon).

COOL FACTS

Trading Places: Did you know that the nutria was imported from South America to replace beaver pelts? The United States exported the beaver to South America's tip, Tierra del Fuego, where they have become a major ecologic and economic nuisance.



Ed Mouton, Louisiana Department of Fisheries

Nutria

Myocastor coypus

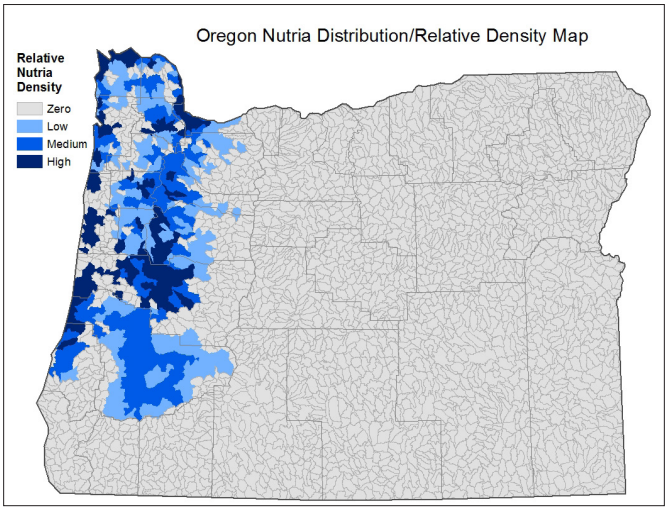
The nutria is a semiaquatic mammal that looks like a small beaver or large muskrat. Nutria have a round, rat-like tail; beavers and muskrats have flattened tails. Nutria are well adapted to water, with eyes set high on the head and the ears small. The hind legs are larger than the forelegs, which gives nutria a hunched appearance when on land. The forepaws have five toes; four of the toes are clawed, and the fifth toe is small. The hind foot has webbing across four of the five toes, which creates a powerful paddle for moving freely in water. Nutria can grow up to 20 pounds in weight and up to 42 inches in length, including the tail. Males are slightly larger than females. Young nutria weigh about one-half pound at birth. Female nutria have four to five pairs of nipples located on the side of their torso, which allow their young to nurse while swimming or standing.

NATIVE AND INVASIVE RANGE

Nutria, which means otter in Spanish, are native to South America, including Argentina, Bolivia, Chile, and Uruguay. In the United States, nutria are established in Oregon, Washington, and the Southeastern states from Texas to Florida. Nutria populations are also present in Maryland and the surrounding area.

WEST COAST DISTRIBUTION

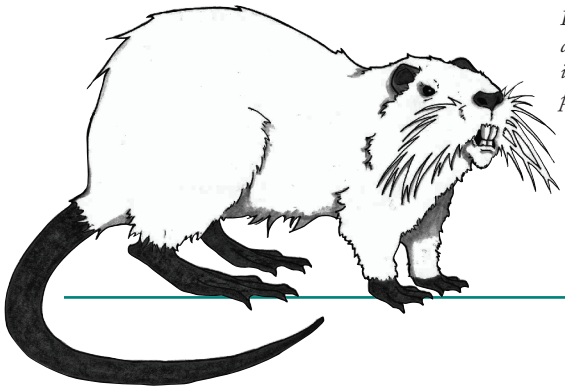
Lowland areas of western Oregon, including the Willamette River and coastal areas, have well-established nutria populations dating back to the 1930s. In Washington, they are present in the Puget Sound lowlands. Artificial and highly channeled waterways, ponds, and dikes are readily colonized by nutria if there is an abundance of fresh water, succulent vegetation, and steep, muddy banks in which to burrow. Although California did once have feral populations, conditions are generally not favorable for nutria in the wild, due to extensive wetland loss in the state. California lost 91 percent of its wetlands between the 1780s and 1980s. Along with this wetland loss, nutria were eventually eradicated and eliminated by 1978.



Trevor Sheffels

Top: Nutria Invasive Range Map, USGS. Note that this map includes historical populations where nutria no longer exist, including California, Nevada, and eastern Oregon.

Bottom: Current distribution of nutria in Oregon, shown in population density.



ECOLOGY

Life cycles and migration patterns

Nutria occupy aquatic ecosystems, where they burrow into the banks of rivers, lakes, and ponds. They usually stay within 600 feet of their burrows, except when food is scarce or agricultural crops lure them away from marshes and swamps.

Nutria tend to be nocturnal, with peak feeding activity occurring around midnight. During daylight hours, nutria rest and groom, unless food is scarce enough to force them to search longer into the day or if they become accustomed to being fed by humans during the day. Cold temperatures at night may also force more daytime activity.

Like many rodents, breeding can occur throughout the year. Females can reproduce when they are six to nine months old, and they can have almost three litters a year. Each litter can have two to 11 young, but an average-size litter has five young. Young are born fully furred, with open eyes. They are able to swim and feed on green vegetation within a few hours after birth.

The young wean at seven or eight weeks and may stay in the home burrow with the family group, expanding burrows as they begin to breed. Captive nutria can live as long as 12 years, but their life span in the wild is much shorter. Mortality each year is estimated to be 80 percent during the first year of life, and few animals live more than two or three years.

Habitat and food webs

Nutria can be found in a variety of habitats when they become established in an area. It is not uncommon to find nutria in swamps, lake and river beds, and brackish marshes.

Nutria can exist only in temperate climates. They cannot tolerate extreme cold, and prolonged exposure to freezing weather can cause high mortality; in fact, several consecutive subfreezing days can cause 80 to 90 percent mortality. Kind of interesting, considering it's a mammal with a fur coat!

Adults burrow three to 18 feet into steep banks and may share a complex system of tunnels with multigenerational family groups. Tunnels are often compartmentalized for resting, feeding, and hiding from predators or weather. The main den is located well above waterline, where rough nests are made of discarded food material. In summer, nutria live above ground in dense vegetation or on small, flattened islands in shallow water. These islands are constructed of coarse vegetation and serve as platforms for escape, feeding, resting, grooming, and even birthing.

Nutria feed on aquatic and semiaquatic vegetation, but they will venture into crops and gardens to eat a range of vegetables, including corn, beets, cabbage, carrots, potatoes, melons, wheat, alfalfa, and clover.

Humans, coyotes, eagles, bobcats, and fox prey on adults, while younger nutria are sometimes taken by

COOL FACTS

Did you know that the nutria was imported from South America as a replacement for a dwindling population of beavers, due to overhunting in the United States to obtain beaver pelts? Later on, the beaver was exported to South America's Tierra del Fuego to replace nutria pelts! There, beaver have become a major ecological and economic nuisance, just like the nutria are a nuisance here!

Nutria swim with their mother and feed on plant matter within 24 hours after birth.

Nutria are able to multitask! The female mammary glands are on the sides of the back, enabling the young nutria to nurse while the mother is in water.

In 1940, a hurricane washed the first colony of 150 nutria off Avery Island into other parts of Louisiana. Since that storm, the nutria population has expanded to 1 million individuals in Louisiana alone.

Officials from the Louisiana Department of Wildlife and Fisheries tried to reduce the nutria population by increasing the demand for nutria meat. Locals say it tastes a lot like rabbit!

Levees and dikes that prevent flooding have been damaged by burrowing nutria. There is evidence that nutrias may have partially contributed to the failure of dikes in some part of New Orleans.

Matt Cleland

Nutria can be distinguished from beaver by its long, white whiskers and rat-like tail.

great horned owls, mink, and weasels. Nutria hear better than they see, and they occasionally sniff the air to sense danger. When disturbed, nutria can move surprisingly fast and will head straight for water, at times diving down for up to ten minutes. They can close their nose and mouth to keep out water (valvular), and they can see underwater.

HOW IT GOT HERE

Nutria were introduced to the United States in 1899 by California fur producers hoping to spark a profitable fur industry.

HOW IT SPREADS

The market for nutria fur failed to materialize, so fur farmers abandoned their operations and let loose their nutria stock, which caused a rapid introduction of this nonindigenous species to Oregon's waterways. In the Southeastern United States, nutria were deliberately released to control weeds. Flood events, combined with rapid reproduction, allow nutria to colonize new waterways.

ECOLOGICAL IMPACTS

Over the past 20 to 30 years, nutria impacts on marshes and wetlands have become increasingly noticeable and present a significant long-term threat. Nutria are voracious herbivores, and their large appetite for succulent plants (such as rushes and sedges) and tree bark denudes areas of important native plants. Overharvesting of desirable food plants leads to the growth of less-favorable foods for nutria and other wildlife species. Nutria can eat up to 25 percent of their body weight in plants each day.

Nutria can eat entire plants, but they often leave a large amount of plant material behind after uprooting and killing the plant. They dig up roots, tubers, and bulbs, which disrupts soil stability and changes the

Tania Siemens

Nutria cause damage to streams, undermining the banks and causing considerable erosion, which impacts water quality and increases sedimentation.

hydrology of an area. For example, by digging up and destroying plant root systems, nutria can change the flow of water in Eastern shore marshes. Tidal water that was once slowed by vegetation can now flow into the marsh and prevent native plant recovery, even after the nutria are removed.

Rapid reproduction and resulting large populations of nutria reduce habitat available to native species, such as muskrats and waterfowl. Muskrat populations have been greatly reduced or eliminated where nutria have become established.

Nutria burrows can undermine the banks of streams and can cause considerable erosion, which can increase sedimentation and decrease water quality.

ECONOMIC IMPACTS

Nutria burrows can cause banks, roadways, and dikes to collapse, threatening the integrity of nearby homes. Nutria

Nutria look-alike comparison chart

Species	Nutria	Muskrat	Beaver	Groundhog	Otter
Profile					
Weight	10–20 lbs.	2–5 lbs.	40+ lbs.	12–15 lbs.	10–30 lbs.
Length	30 inches, including 10-inch tail	20 inches, including 9-inch tail	50 inches, including 12-inch tail	20 inches, including tail	34–60 inches
Front feet	Five toes, only four show up in tracks	Five toes		Four toes visible	
Hind feet	Partially webbed	No webbing between toes; fine, stiff hairs along margin of toes to aid in swimming	Fully webbed feet	No webbing	Fully webbed feet
Tail	Heavy, scaly, ratlike tail, sparsely covered in bristly hairs	Thin, ribbon-like, scaly tail, thinly covered with fine, black hairs	Large, oval-shaped, and flattened scaly tail, with no hairs present	Short, stubby tail, heavily furred in bushy hairs.	Thick, muscular, tapered tail covered in fine, dense fur
Tail cross-section	Circular/round	Taller than wide, sharp ridge on top and bottom	Flattened	Round/furry	
Distinguishing features	Long, white whiskers and large, orange teeth	Serpentine tail movement when swimming	Slaps tail on water surface	Hibernates during winter	Slender, elongated body
Scat (feces)	Large, 2- to 3-inch scats resembling Tootsie Roll; may float in water; juvenile scat is smaller	Smaller, kidney bean-shaped scats, often deposited in small piles on logs and other structures	Large, loose piles of sawdust-like scat, usually deposited in water		Loose, tar-like scat comprised of fish scales
Den	Creates beds of cut vegetation; sometimes digs volleyball-sized bank dens at water's edge.	Creates hut out of mounds of vegetation and mud; entrance to den is under water; also digs softball-sized bank dens	Creates large lodges out of branches and mud; entrance also under water; also digs basketball-sized bank dens; uses dams to create ponds	Digs holes and tunnels in upland habitats. Loose dirt piled in front of holes.	Constructed in the burrows of other animals, or in natural hollows, such as under a log or in river banks

After U.S. Fish and Wildlife's Chesapeake Bay Nutria Eradication Project website (last updated October 19, 2011).

For more information, including additional photos and a sound clip of nutria, see the Project website at http://www.fws.gov/chesapeakenutriaproject/Biology.html?

have been implicated in the failure of the levees after Hurricane Katrina hit New Orleans, Louisiana, in 2005.

Nutria foraging damages agricultural crops, lawns, home gardens, streambank restorations, and native revegetation projects. Nutria will eat the bark all around orchard trees, deciduous and coniferous forest trees, and ornamental shrubs. High reproduction and dispersal rates make control methods difficult, costly, and often ineffective.

Nutria are harvested in South America for fur and continue to be harvested for fur and meat in Louisiana. Initial expectations of using nutria as a valuable fur farm animal failed to materialize.

CULTURAL IMPACTS

People are becoming attached to nutria because they are perceived as "cute" and docile. People will come into close contact with or feed nutria that have invaded urban parks and waterways. It is important that people keep a good distance from nutria because nutria carry disease and can be aggressive.

Officials from the Louisiana Department of Wildlife and Fisheries tried to reduce the nutria population by increasing the demand for nutria meat. Locals say it tastes a lot like rabbit!

POLITICAL IMPACTS

In Oregon, the nutria is classified as unprotected Nongame Wildlife (OAR 635-044-0132), which means nutria may be shot or trapped but not relocated. No license is needed for a landowner to control nutria on his or her property.

In the state of Washington, the nutria is classified as a Prohibited Aquatic Animal Species (WAC 220-12-090). This means all live-trapped nutria in Washington should be euthanized and not returned to the wild.

In California, nutria and most other species of the order Rodentia are classified as Restricted Species under California Administrative Code Title 14, Section 671. Importation, transportation, and possession of the restricted animals on this list are unlawful except under permit issued by the California Department of Fish and Game.

HEALTH HAZARDS

Nutria are a human health concern. Their habit of defecating in the water can contaminate it with giardia, and they harbor parasites, including flatworms, roundworms, fleas, and lice. The roundworms infesting nutria result in human health problems when roundworm larvae penetrate human skin. Known as "nutria itch," it can result in severe inflammation requiring medical attention. Nutria can transmit serious infectious diseases to people. Diseases most commonly associated with nutria are tuberculosis, septicaemia, and tularaemia.

Also, people, livestock, and machinery can fall into nutria burrows!

MANAGEMENT STRATEGIES

Trapping is labor intensive and must be done almost continuously where waterways are connected. Extreme care must be taken to avoid accidentally trapping and killing domestic animals or pets.

Various fencing methods can be used to exclude nutria from home gardens and lawns, but the fence must be buried six inches deep. Sheetmetal shields effectively protect trees from nutria damage.

Nutria prefer to establish burrows in steep banks. When possible, avoid creating steep banks to keep nutria from establishing in new waterways or channels.

Harassing nutria with loud noises or water guns is a short-lived control method; the animals adjust and soon return. Large dogs can effectively keep nutria off lawns and away from home gardens, but when nutria are cornered or captured, they are aggressive and can inflict serious bites on pets and humans.

WHAT YOU CAN DO!

For your safety, do not feed or come into contact with nutria, because they can bite and carry diseases.

Do not trap and transport nutria from one place to another. Only professionals should trap nutria. Contact your state wildlife agency for solutions and a list of certified trappers.

Educate others about the negative impacts of nutria so they don't become attached to or develop a fondness for these destructive animals. It is even more difficult to control a species after people develop a fondness for them.

Take precautions against nutria damage when planning a streamside restoration project.

INFORMATION GAPS

Scientists and land managers need more information to understand how nutria impact wetland restoration in Oregon and native plant and animal species in the Pacific Northwest. Other information gaps include estimates of regional population size, information about what diseases regional nutria populations are carrying, and the level of economic damage caused by regional nutria populations.

REFERENCES

Benson, A. J. and C. P. Boydstun. 1999. Documenting over a century of aquatic introductions in the U.S. Pages 1–31 in R. Claudi and J. H. Leach, editors, *Nonindigenous fresh water organisms: vectors, biology, and impacts*. Lewis Publishers, Boca Raton, Florida, USA.

Pilot Program to Control Nutria at the Blackwater National Wildlife Refuge in Maryland: Oversight Hearing Before the Subcommittee on Fisheries Conservation, Wildlife, and Oceans of the Committee on Resources, 105th Cong. 11–13 (1998) (expert testimony of Glenn Carowan, Refuge Manager, Blackwater National Wildlife Refuge). http://commdocs.house.gov/committees/resources/hii50341.000/hii50341_0.HTM [last accessed October 2014].

Gingerich, J. L. 1995. *Florida's fabulous mammals*. World Publications, Tampa Bay, Florida, USA.

Nowak, R. M. 1991. *Walker's mammals of the world* (5th edition). Johns Hopkins University Press, Baltimore, Maryland, USA.

Maryland Sea Grant. 2013. *Aquatic invasive species in the Chesapeake Bay: nutria.* Maryland Sea Grant brief by Jenny Allen and Daniel Strain. College Park, Maryland. http://www.mdsg.umd.edu/sites/default/files/files/Nutria_AIS%20brief_PI-2013-02.pdf [last accessed October 2014].

Maryland Sea Grant 2013. *Nutria.* Aquatic Invasive Species in Chesapeake Bay, A Maryland Sea Grant Fact Sheet. http://www.mdsg.umd.edu/sites/default/files/files/Nutria_AIS%20brief_PI-2013-02.pdf [last accessed November 2014].

Mitsch, W. J. and J. G. Gosselink. 1993. *Wetlands* (2nd edition). Van Nostrand Reinhold, New York, New York, USA.

Oregon Department of Fish and Wildlife, Springfield Field Office. 2014. *Living with wildlife: nutria.* http://www.dfw.state.or.us/wildlife/living_with/nutria.asp [last update March 18, 2014; last accessed October 2014].

Sheffels, T. R. and M. Sytsma. 2007. *Report on nutria management and research in the Pacific Northwest*. Center for Lakes and Reservoirs, Portland State University. http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1023&context=centerforlakes_pub [Last accessed October 2014].

Global Invasive Species Database. 2008. *Myocaster coypus*. Previously published as National Biological Information Infrastructure fact sheet and database on nutria. http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts=&lang=EN [last update April 13, 2008; last accessed October 2014].

Link, R. 2014. *Living with nutria.* Washington Department of Fish and Wildlife, Olympia, Washington. http://wdfw.wa.gov/living/nutria.html [last accessed October 2014].

Willner, G. R., J. A. Chapman, and D. Pursley 1979. *Reproduction, physiological responses, food habits, and abundance of nutria on Maryland marshes.* The Wildlife Society, *Wildlife Monographs*, No. 65.

Whitaker, J. O., Jr. 1988. *The Audubon Society field guide to North American mammals*. Alfred A. Knopf, New York, New York, USA.

ADDITIONAL RESOURCES

Skulls Unlimited

Good picture of the skull of the nutria on site for business specializing in animal skulls.

http://www.skullsunlimited.com/record_variant.php?id=3876

USGS National Wetlands Research Center

Worldwide Distribution, Spread of, and Efforts to Eradicate the Nutria (*Myocastor coypus*)

Interactive map that allows you to learn more about the details of the global spread of nutria by clicking around the map.

http://www.nwrc.usgs.gov/special/nutria/

Louisiana Department of Wildlife and Fisheries

Nutria.

Visit this site and get ideas for creative nutria recipes such as chili, sausage, and gumbo!

http://www.nutria.com/site14.php

VIDEOS

Regional nutria management online videos

PSU/USGS/USFWS/USDA Nutria Research Program

Behind-the-scenes look at video shoot for nutria documentary that aired on National Geographic Channel in summer 2012.

USFWS Video #1: http://www.youtube.com/watch?v=dxWGHfeAEGI

PSU/USGS/USFWS/USDA Nutria Research Program

Behind-the-scenes look at research to track regional nutria populations in urban habitats using radio telemetry.

USFWS Video #2: http://www.youtube.com/watch?v=FUejil9ZyyE

Other regional nutria videos

Nutria: In western Oregon, nutria are ruining the state's waterways.

Summary of nutria impacts occurring at two local urban wetland sites.

Statesman Journal Video #1: http://www.statesmanjournal.com/VideoNetwork/49609077001/Nutria

Nutria traps: Salem resident Bob Miller works to keep the lakes around Cinnamon Lakes Condominiums free of nutria.

Efforts of a Salem resident to remove nutria from urban wetlands near a condominium complex.

Statesman Journal Video #2: http://www.statesmanjournal.com/VideoNetwork/49609078001/Nutria-traps

Nutria

Oregon Field Guide segment on the introduction of nutria in the Pacific Northwest.

Oregon Public Broadcasting Video: http://www.opb.org/programs/ofg/segments/view/1117

Hi! I'm a nutria!

Support for the viewpoint that nutria are a naturalized species and should be left alone.

New York Times Opinion Editorial Video (by Drew Christie, March 19, 2012): http://www.nytimes.com/video/2012/03/19/opinion/100000001437865/hi-im-a-nutria.html#100000001437865