

DOWNLOAD PDF BEAVERS AND OTHER RODENTS (PORTRAIT OF THE ANIMAL WORLD)

Chapter 1 : Best 25+ North american beaver ideas on Pinterest | The beaver, Beavers and Baby beaver

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Beaver dam The same dam four months later, showing enlargement Beaver dams are created as a protection against predators, such as coyotes, wolves and bears, and to provide easy access to food during winter. Beavers always work at night and are prolific builders, carrying mud and stones with their fore-paws and timber between their teeth. Because of this, destroying a beaver dam without removing the beavers is difficult, especially if the dam is downstream of an active lodge. Beavers can rebuild such primary dams overnight, though they may not defend secondary dams as vigorously. Beavers may create a series of dams along a river. Lodges "Beaver lodge" redirects here. For the town in Alberta, Canada, see Beaverlodge. These are created from severed branches and mud. The beavers cover their lodges late each autumn with fresh mud, which freezes when frosts arrive. The mud becomes almost as hard as stone, thereby preventing wolves and wolverines from penetrating the lodge. Illustration of beaver lodge Beaver lodge, approx. The lodge has underwater entrances, which makes entry nearly impossible for any other animal, although muskrats have been seen living inside beaver lodges with the beavers who made them. Beavers dig out their dens with underwater entrances after they finish building the dams and lodge structures. There are typically two dens within the lodge, one for drying off after exiting the water and another, drier one, in which the family lives. Beaver lodges are constructed with the same materials as the dams, with little order or regularity of structure. They seldom house more than four adults and six or eight juveniles. Some larger lodges have one or more partitions, but these are only posts of the main building left by the builders to support the roof. Usually, the dens have no connection with each other except by water. When the ice breaks up in spring, beavers usually leave their lodges and roam until just before autumn, when they return to their old lodges and gather their winter stock of wood. They seldom begin to repair the lodges until the frost sets in, and rarely finish the outer coating until the cold becomes severe. When they erect a new lodge, they fell the wood early in summer but seldom begin building until nearly the end of August. However, further research has shown that many animals and birds carry this parasite, and the major source of water contamination is by other humans. The " Lincoln Park beaver " has not been as well received by the Chicago Park District and the Lincoln Park Conservancy, which was concerned over damage to trees in the area. In March , they hired an exterminator to remove a beaver family using live traps, and accidentally killed the mother when she got caught in a snare and drowned. When the city council wanted to remove the beavers because of fears of flooding, local residents organized to protect them, forming an organization called "Worth a Dam". However, the project failed and the beavers, ten pairs, were released into the wild. Having no natural predators in their new environment, they quickly spread throughout the island, and to other islands in the region, reaching a number of , individuals within just 50 years. They are now considered a serious invasive species in the region, due to their massive destruction of forest trees, and efforts are being made for their eradication. In contrast, areas with introduced beaver were associated with increased populations of native puye fish *Galaxias maculatus* , whereas the exotic brook trout *Salvelinus fontinalis* and rainbow trout *Oncorhynchus mykiss* had negative effects on native stream fishes in the Cape Horn Biosphere Reserve , Chile. Groups this size or close to this size build more lodges to live in while smaller families usually need only one. Extra-pair copulations also occur. They also both mark and defend the territory and build and repair the dam and lodge. In the time after they leave the lodge for the first time, yearlings will help their parents build food caches in the fall and repair dams and lodges. Still, adults do the majority of the work and young beavers help their parents for reasons based on natural selection rather than kin selection. They are dependent on them for food and for learning life skills. However, while copying behavior helps imprint life skills in young beavers, it is not necessarily immediately beneficial for parents as the young beaver do not perform the tasks as well as the parents. In addition to helping build food caches and

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repairing the dam, two-year-olds will also help in feeding, grooming and guarding younger offspring. This behavior is common and is seen in many other animal species, such as the elephant and fathead minnow. To avoid such situations, a beaver marks its territory with as many scent mounds as possible, signaling to intruders that the territory holder has enough energy to maintain its territory and is thus able to put up a good defense. As such, territories with more scent mounds are avoided more often than ones with fewer mounds. A territory-holding beaver will investigate and become familiar with the scents of its neighbors. In April, an angler, near Minkovichi in the Brest region of Belarus, died after being bitten twice on the leg by a wild Eurasian beaver. The beaver at the bottom is about to bite his own testicles off. The beaver at the top, having already lost his, scarpers off with an anguished expression. Bodley, Folio 14r c. Both beaver testicles and castoreum, a bitter-tasting secretion with a slightly fetid odor contained in the castor sacs of male or female beaver, have been articles of trade for use in traditional medicine. Yupik medicine used dried beaver testicles like willow bark to relieve pain. Dried beaver testicles were also used as contraception. This belief, also recorded by Pliny the Elder, persisted in medieval bestiaries. Castoreum was described in the British Pharmaceutical Codex for use in dysmenorrhea and hysterical conditions. It is sometimes added to frozen dairy, gelatins, candy, and fruit beverages. Due to the difficulty and expense in obtaining castoreum, it is only very rarely used in common food products. In Canada a "made beaver" or castor gras that a native had worn or slept on was more valuable than a fresh skin since this tended to wear off the outer guard hairs. They were then shipped back to Great Britain and France where they were made into clothing items. Widespread hunting and trapping of beavers led to their endangerment. Eventually, the fur trade declined due to decreasing demand in Europe and the takeover of trapping grounds to support the growing agriculture sector. A small resurgence in beaver trapping has occurred in some areas where there is an over-population of beaver; trapping is done when the fur is of value, and the remainder of the animal may be used as feed. The English verb "to beaver" means to work hard and constantly. Beverly or Beverley, a placename found at various locations in the English-speaking world and also commonly used as a first name, derives from Old English, combining the words befer "beaver" and leah "clearing". The first Redwall book features an unnamed beaver who helps Constance the badger build a bow, the only one ever seen before the books shifted to focus on animals commonly native to the English Isles. The American horror comedy film directed by Jordan Rubin called Zombeavers, which follows a group of college kids on a camping trip that are attacked by a swarm of zombie beavers. As a national emblem The importance of the beaver in the development of Canada through the fur trade led to its official designation as the national animal in 1975. As a national symbol, the beaver was chosen to be the mascot of the Summer Olympics held in Montreal with the name "Amik" "beaver" in Ojibwe. Others who have used the beaver in their company or organizational symbol or as their mascot include:

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Chapter 2 : Beaver - Wikipedia

Over 80 illustrations. Among the most fascinating of all rodents is the industrious beaver, whose dams and lodges are marvels of instinctive engineering. These energetic animals change the face of the landscape by felling countless trees and creating ponds that provide wetlands for an array of.

Characteristics[edit] Drawing of typical rodent tooth system: The front surface of the incisors is hard enamel , whereas the rear is softer dentine. The act of chewing wears down the dentine, leaving a sharp, chisel-like edge. The distinguishing feature of the rodents is their pairs of continuously growing, razor-sharp incisors. As the incisors grind against each other, the softer dentine on the rear of the teeth wears away, leaving the sharp enamel edge shaped like the blade of a chisel. A gap, or diastema , occurs between the incisors and the cheek teeth in most species. This allows rodents to suck in their cheeks or lips to shield their mouth and throat from wood shavings and other inedible material, discarding this waste from the sides of their mouths. Rodent molars are well equipped to grind food into small particles. The lower jaw is thrust forward while gnawing and is pulled backwards during chewing. The Sciuromorpha , such as the eastern grey squirrel , have a large deep masseter , making them efficient at biting with the incisors. The Myomorpha , such as the brown rat, have enlarged temporalis muscles, making them able to chew powerfully with their molars. The Hystricomorpha , such as the guinea pig, have larger superficial masseter muscles and smaller deep masseter muscles than rats or squirrels, possibly making them less efficient at biting with the incisors, but their enlarged internal pterygoid muscles may allow them to move the jaw further sideways when chewing. The smallest rodent is the Baluchistan pygmy jerboa , which averages only 4. Rodents have wide-ranging morphologies, but typically have squat bodies and short limbs. The elbow gives the forearms great flexibility. The nails of burrowing species tend to be long and strong, while arboreal rodents have shorter, sharper nails. The majority of rodents have tails, which can be of many shapes and sizes. Some tails are prehensile , as in the Eurasian harvest mouse , and the fur on the tails can vary from bushy to completely bald. The tail is sometimes used for communication, as when beavers slap their tails on the water surface or house mice rattle their tails to indicate alarm. Some species have vestigial tails or no tails at all. Nocturnal species often have enlarged eyes and some are sensitive to ultraviolet light. Many species have long, sensitive whiskers or vibrissae for touch or "whisking". Some rodents have cheek pouches , which may be lined with fur. These can be turned inside out for cleaning. In many species, the tongue cannot reach past the incisors. When eating cellulose , the food is softened in the stomach and passed to the cecum , where bacteria reduce it to its carbohydrate elements. The rodent then practices coprophagy , eating its own fecal pellets, so the nutrients can be absorbed by the gut. Rodents therefore often produce a hard and dry fecal pellet. In some rodents, males are larger than females, while in others the reverse is true. Male-bias sexual dimorphism is typical for ground squirrels , kangaroo rats, solitary mole rats and pocket gophers ; it likely developed due to sexual selection and greater male-male combat. Female-bias sexual dimorphism exists among chipmunks and jumping mice. It is not understood why this pattern occurs, but in the case of yellow-pine chipmunks , males may have selected larger females due to their greater reproductive success. In some species, such as voles , sexual dimorphism can vary from population to population. In bank voles , females are typically larger than males, but male-bias sexual dimorphism occurs in alpine populations, possibly because of the lack of predators and greater competition between males. Some rodents thrive in human habitats. One of the most widespread groups of mammals, rodents can be found on every continent except Antarctica. They are the only terrestrial placental mammals to have colonized Australia and New Guinea without human intervention. Humans have also allowed the animals to spread to many remote oceanic islands e. Some species such as tree squirrels and New World porcupines are arboreal , while some, such as gophers , tucos , and mole rats, live almost completely underground, where they build complex burrow systems. Others dwell on the surface of the ground, but may have a burrow into which they can retreat. Beavers and muskrats are known for being semiaquatic, [1] but the rodent

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best-adapted for aquatic life is probably the earless water rat from New Guinea. Though some species are common pests for humans, rodents also play important ecological roles. In the Great Plains of North America, the burrowing activities of prairie dogs play important roles in soil aeration and nutrient redistribution, raising the organic content of the soil and increasing the absorption of water. They maintain these grassland habitats, [14] and some large herbivores such as bison and pronghorn prefer to graze near prairie dog colonies due to the increased nutritional quality of forage. As such, these rodents may play a role in maintaining healthy forests. When building their dams and lodges, beavers alter the paths of streams and rivers [17] and allow for the creation of extensive wetland habitats. One study found that engineering by beavers leads to a 33 percent increase in the number of herbaceous plant species in riparian areas. Some are omnivorous and a few are predators. It occasionally eats invertebrates such as insect larvae. It also practices coprophagy. It then returns to its burrow to sort through the material it has gathered and eats the nutritious items. Too many seeds are inside to be consumed in one meal, so the agouti carries some off and caches them. This helps dispersal of the seeds as any that the agouti fails to retrieve are distant from the parent tree when they germinate. Other nut-bearing trees tend to bear a glut of fruits in the autumn. These are too numerous to be eaten in one meal and squirrels gather and store the surplus in crevices and hollow trees. In desert regions, seeds are often available only for short periods. The kangaroo rat collects all it can find and stores them in larder chambers in its burrow. They rely on their fat reserves during their long winter hibernation. They store food for winter use by felling small trees and leafy branches in the autumn and immersing them in their pond, sticking the ends into the mud to anchor them. Here, they can access their food supply underwater even when their pond is frozen over. A functional-morphological study of the rodent tooth system supports the idea that primitive rodents were omnivores rather than herbivores. Studies of the literature show that numerous members of the Sciuromorpha and Myomorpha, and a few members of the Hystricomorpha, have either included animal matter in their diets or been prepared to eat such food when offered it in captivity. It has a chunky body with short legs and tail, but is agile and can easily overpower prey as large as itself. Adult dormice may have overlapping feeding ranges, but they live in individual nests and feed separately, coming together briefly in the breeding season to mate. The pocket gopher is also a solitary animal outside the breeding season, each individual digging a complex tunnel system and maintaining a territory. At high population densities, this system breaks down and males show a hierarchical system of dominance with overlapping ranges. Female offspring remain in the colony while male young disperse. Outside the breeding season, prairie voles live in close proximity with others in small colonies. A male is not aggressive towards other males until he has mated, after which time he defends a territory, a female, and a nest against other males. The pair huddles together, grooms one another, and shares nesting and pup-raising responsibilities. Cooperation in ground squirrels varies between species and typically includes making alarm calls, defending territories, sharing food, protecting nesting areas, and preventing infanticide. The burrows do not interconnect, but are excavated and occupied by territorial family groups known as coteries. Individuals within coteries are friendly with each other, but hostile towards outsiders. The naked mole rat lives completely underground and can form colonies of up to 80 individuals. Only one female and up to three males in the colony reproduce, while the rest of the members are smaller and sterile, and function as workers. Some individuals are of intermediate size. They help with the rearing of the young and can take the place of a reproductive if one dies. Rodents use scent marking in many social contexts including inter- and intra-species communication, the marking of trails and the establishment of territories. Their urine provides genetic information about individuals including the species, the sex and individual identity, and metabolic information on dominance, reproductive status and health. Compounds derived from the major histocompatibility complex MHC are bound to several urinary proteins. The odor of a predator depresses scent-marking behavior. This kin recognition is by olfactory cues from urine, feces and glandular secretions. The main assessment may involve the MHC, where the degree of relatedness of two individuals is correlated to the MHC genes they have in common. In non-kin communication, where more permanent odor markers are required, as at territorial borders, then non-volatile major urinary proteins

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MUPs , which function as pheromone transporters, may also be used. MUPs may also signal individual identity, with each male house mouse *Mus musculus* excreting urine containing about a dozen genetically encoded MUPs. This is known as the "dear enemy effect". Many rodent species, particularly those that are diurnal and social, have a wide range of alarm calls that are emitted when they perceive threats. There are both direct and indirect benefits of doing this. A potential predator may stop when it knows it has been detected, or an alarm call can allow conspecifics or related individuals to take evasive action. These species may have different calls for different predators e. Fifteen different call-types have been recognized in adult *Katapa* mole rats and four in juveniles. Audible vocalizations can often be heard during agonistic or aggressive encounters, whereas ultrasound is used in sexual communication and also by pups when they have fallen out of the nest. The vocalization, described as a distinct "chirping", has been likened to laughter , and is interpreted as an expectation of something rewarding. In clinical studies, the chirping is associated with positive emotional feelings, and social bonding occurs with the tickler, resulting in the rats becoming conditioned to seek the tickling. However, as the rats age, the tendency to chirp declines. Like most rat vocalizations, the chirping is at frequencies too high for humans to hear without special equipment, so bat detectors have been used for this purpose. They are therefore classified as dichromats ; however, they are visually sensitive into the ultraviolet UV spectrum and therefore can see light that humans can not. The functions of this UV sensitivity are not always clear. In *degus* , for example, the belly reflects more UV light than the back.

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Chapter 3 : A Portrait of the Animal World: Beavers and Other Rodents by Paul Sterry (, Hardcover) | eBay

An informative series that provides, in a concise format, better understanding of animals and their habitats. Fascinating in its diversity, the natural world comes to life on the pages of these spectacularly illustrated volumes.

See Article History Alternative Title: Beavers are the largest rodents in North America and Eurasia and the second largest rodents worldwide. Their bodies extend up to 80 cm 31 inches long and generally weigh 16â€”30 kg 35â€”66 pounds, with the heaviest recorded at more than 85 pounds. They live in streams, rivers, marshes, ponds, and shorelines of large lakes and construct dams of branches, stones, and mud, forming ponds that often cover many hectares. Adult beavers and kits *Castor canadensis* in the Rocky Mountains. Beavers have short legs and a stout body with a small, broad, and blunt head. Massive chisel-shaped incisor teeth have orange outer enamel because iron has replaced calcium, and this makes them stronger than most rodent incisors. Upon submergence, folds of skin valves close the nostrils and the stubby rounded ears, and the eyes are protected by a membrane that keeps water out nictitating membrane. The fur-lined lips close behind the incisors, blocking water from the mouth and lungs and allowing the animal to cut, peel, and carry branches underwater. Small front feet with five clawed digits dexterously manipulate food. The hind feet are quite large, and the five digits are connected by webbing, which makes them useful as paddles for propulsion underwater. Claws of the second hind digits are split and have serrated edges used for grooming the fur. Fur consists of a grayish to brown layer of short, fine, and dense underfur that keeps water from reaching the skin. Over this layer are long, coarse, glossy guard hairs ranging in colour from yellowish brown through reddish brown to black; underparts of the animal are paler. The distinctive tail is scaly, flat, and paddle-shaped and measures up to 45 cm about 18 inches long and 13 cm 5 inches wide. Both sexes possess castor glands that exude a musky secretion castoreum, which is deposited on mud or rocks to mark territorial boundaries. Anal glands secrete oil through skin pores to hair roots. From there it is distributed with the front feet and grooming claws over the whole body to keep the fur sleek, oily, and water-repellent. Beavers are colonial and primarily nocturnal. Their characteristically dome-shaped island lodges are built of branches plastered with mud. In marshes, lakes, and small rivers, beavers may instead construct bank lodges, and in large rivers and lakes they excavate bank dens with an underwater entrance beneath tree roots or overhanging ledges. Each lodge is occupied by an extended family group of up to eight individuals: Lodges are usually 3 metres 10 feet high and 6 metres 20 feet across the base but can be as large as 5 metres 16 feet high and 12 metres 39 feet wide. An entry tunnel leads to the nest chamber above the waterline. In winter the moist walls freeze, adding insulation and making the lodge impenetrable to predators. The dam impedes the flow of the stream and increases the depth of the water that surrounds the lodge. Dams also create additional wetland habitat for fish and waterfowl and contain or impede the downstream movement of oil spilled into rivers. Despite the environmental services these dams provide, land owners and farmers often regard beavers as nuisance animals because beavers sometimes destroy ornamental trees, devour crops, or flood roads and fields with water impounded behind their dams. They leave the lodge only to feed on branches cached beneath the ice. Slow swimmers, beavers can remain submerged for up to 15 minutes and propel themselves primarily with the webbed hind feet while the front feet are held tight against the body. On land they walk or run with a waddling gait. Their diet consists of the soft cambium layer beneath bark, as well as the buds, leaves, and twigs of certain trees willows and aspens are preferred. Pond vegetation and bankside plants are also eaten. Herbaceous vegetation is consumed mostly during summer and woody matter during winter. Shrubs, saplings, and trees are felled by beavers, cut into portable lengths, and dragged along mud slides or floated through beaver-made canals to the lodge. Edible branches are cached underwater and anchored in mud near the lodge entrance, where they are to be eaten all winter when the beavers cannot break through the ice to cut fresh branches. Beavers are monogamous, mating between January and March in the north and November or December in the south. One litter per year of one to nine usually four kits is born in the spring after a gestation of days. Beavers communicate by postures,

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vocalization, scent marking, and tail slapping. When alarmed on land, they retreat to water and warn others by slapping the surface of the water with their tails, producing a loud, startling noise. Eagles, large hawks, and most large mammalian carnivores prey on beavers. Beavers were at the heart of the fur trade during colonial times and contributed significantly to the westward settlement and development of North America and Canada. As the animal was trapped out in the east, trappers moved progressively westward, and settlers followed. Nearly extirpated by through excessive trapping for their luxuriant coat, they have reclaimed, either by natural movement or human reintroduction, much of their former natural range, and regulated trapping continues, particularly in Canada. American beavers have been introduced into Finland, where they are flourishing. Efforts to reestablish the Eurasian species began in Sweden in the early s. Eurasian beaver Eurasian beaver *Castor fiber*. With no close living relatives the mountain beaver belongs to a separate family, modern beavers are remnants of a rich evolutionary history of 24 extinct genera extending back to the Late Eocene Epoch of Asia and the Early Oligocene of Europe and North America. Most were terrestrial burrowers, such as *Palaeocastor*, which is known by fossils from Late Oligocene–Early Miocene sediments of western Nebraska and eastern Wyoming. They probably lived in upland grasslands in large colonies, excavated extensive burrow systems, and grazed on the surface, their entire lifestyle being much like that of modern prairie dogs. The largest rodent that ever lived in North America was the amphibious giant beaver *Castoroides* of the Pleistocene Epoch. Fossils indicate that it had a body length of two metres and was about the size of a black bear.

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Chapter 4 : 13 best Beaver images on Pinterest | Beaver dam, Wild animals and Beavers

Synopsis. Among the most fascinating of all rodents is the industrious beaver, whose dams and lodges are marvels of instinctive engineering. These energetic animals change the face of the landscape by felling countless trees and creating ponds that provide wetlands for an array of aquatic species.

Share Shares The mere mention of rodents evokes dread. For millennia, they have been our unwanted guests, creeping in the shadows, feasting on garbage, and spreading disease. Why do these critters elicit such powerful emotions? Is it because they are so alien? Because rodents offer a shadowy reflection of humanity? Some specimens reach nightmarish proportions. Here are some of the giants. Norbert Nagel The Louisiana bayou is under attack. With a voracious appetite for aquatic vegetation, these rodents turn wetlands into open water. Without the bayou to absorb storm surges, flooding could wash away southern Louisiana. The family behind Tabasco sauce released nutria into Southern swamps in the s, hoping to provide an alternative to the beaver fur trade. Now they are breeding out of control. A culinary event called Nutriafest was launched to promote eating the invasive rodent. Enthusiasts tout their flesh as having more protein than beef and less fat than farmed catfish. Some take to the air. Experts observed the first known specimen in a bush meat market in Laos, and no one knows how many exist. Only 10 other specimens have been found, and they all came from freezers. A membrane of skin attached from ankle to wrist acts more like a parachute than true wings. Their tail acts as a stabilizer and cartilage rods in their wrist help steer. The Laotian giant is the second known species of the *Biswamoyopterus* genus. The other is the Namdapha flying squirrel, which is known by a single specimen collected in from northeast India. Given the limited number of *Biswamoyopterus* in existence, no one knows the extent of their ranges. Other giant flying squirrels, like the red giant variety, range from Afghanistan to the islands of Southeast Asia. Like all flying squirrels, the red giant is arboreal and nocturnal. The Big Apple had once been the home of *Castoroides*—bear-sized beavers who were centimeters 7 ft long and weighed over 90 kilograms lb. For comparison, the largest modern beavers top out at 27 kilograms 60 lb. These prehistoric beasts died out 10, years ago, along with the other Pleistocene mega-fauna of New York like mammoths and saber-tooth cats. These mega-beavers figure prominently in the mythology of several Native American tribes of the Northeast. In the legends of the Pocumtuk of Massachusetts, giant beavers are man-eaters. Given the limits of fossilized specimens, we have no idea whether they had webbed feet or a flat tail. Their teeth, however—centimeter 6 in incisors—have remained for us to find. Did they use these dental daggers to chop trees? Or were these terrifying teeth designed to tear flesh? Modern beavers are no small animal themselves. These aquatic workaholics are the second-largest rodents alive, only outweighed by the South American capybara. These remarkable creatures can chop down trees, swim underwater for 15 minutes without breathing, and turn open fields and forest into ponds with their compulsive dam-building. Only humans outmatch beavers in their ability to alter environments. The creature was over 40 centimeters 16 in long and chewed through solid concrete to enter the home. The rat survived the snap only to suffocate when it tried to drag the trap back into its lair. Experts say the brown rats are the size of cats, twice as big as they once were. Exterminators recently trapped a centimeter 24 in specimen in a Dublin flat. Not only are the rats getting bigger, they are mutating. These fast-breeding rodents have evolved an immunity to poison. Exterminators currently use bromadiolone but claim it no longer works. If so, how long until the rats mutate again? Karelj The capybara is the largest living rodent. Haunting the steamy plains of South America, these semi-aquatic beasts top out over 45 kilograms lb , about the size of labrador retrievers. Traditionally, Venezuelans eat capybara on Easter. Most diners would probably prefer not to know that this monster rodent has a nasty habit of eating its own feces. Some folks have domesticated these rodents. Pet capybara spend most of their days in pools. They get along well with cats, dogs, and horses, but reports suggest they enjoy taunting rabbits and get vexed by tortoises. A word of warning: Capybara can be aggressive. Their teeth are sharp, and bites are no laughing matter. Far larger rodents than capybara once roamed Venezuela. In Urumaco, kilometers mi west of

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Caracas, scientists unearthed a rodent 10 times bigger than the current heavyweight champ. *Phoberomys pattersoni* was a relative of modern guinea pigs. Urumaco was a home to giants of all varieties—the largest turtle ever, some of the largest crocodiles, and an array of unidentified monstrous fish once lived alongside *Guineazilla*. Experts believe these oversize rodents went extinct because they were too large to hide from predators. Two million mice run rampant on this lonely outpost in the South Atlantic. These bloodthirsty rodents are 50 percent larger than mice elsewhere. The non-native critters fuel their supersized growth with Atlantic petrel chicks. On nearby Tristan da Cunha, black rats have already devoured a separate petrel population. These invasive rodents have no predators to fear on these far-flung islands. The Gough Island mice have been known to attack and devour chicks of the Tristan albatross, which are times larger than the mice. Analysis reveals that 1. When you stay on the island, they crawl over you when you sleep in your bed. Everyone agrees that something needs to be done to combat the mice and stop their predation of the endangered ashy storm petrel, but not everyone agrees on the method. The plan to carpet bomb the island with pesticide from helicopters has been met with disapproval. Plus, the poison would need to kill every mouse. A single pregnant female could repopulate the island. There is a precedent for island rodent eradication. Not surprisingly, there are fewer bleeding hearts in Alaska than the Bay Area. The bones belonged to the *Josephoartigasia*, the largest rodent ever. This prehistoric beast dominated the woodlands of South America four million years ago. Analysis of the skull suggested a creature as large as a bull, up to centimeters 8 ft long and weighing over a ton. This monster resembled a giant capybara and was more closely related to guinea pigs and porcupines than mice and rats. The teeth of the *Josephoartigasia* suggest a diet of aquatic vegetation and fruit, but that does not imply passivity. These mega-rodents lived in a hostile world of saber-tooth cats, meat-eating marsupials, and 3-meter 10 ft birds of terror. Perhaps their teeth were used for defense or by males to fight over breeding rights. Even the local Kasua tribe, who provided trackers for the research party, rarely set foot inside the crater. With steep walls nearly meters 0. This volcanic depression in the Papua New Guinea highlands contained 40 species new to science and believed to exist nowhere else on Earth: The centimeter 32 in creature with a lush, silvery coat was incredibly docile, indicating that it has had no exposure to humans. While the Bosavi woolly rat is the largest living rat, much larger specimens stalked the jungles of Southeast Asia as recently as 1, years ago. Archeologists in East Timor unearthed the bones of a rat three times larger than the Bosavi specimen dating from this period. These extinct giants weighed up to 6 kilograms 13 lb. The giant rat expedition uncovered the remains of 13 rodent species, 11 of which were unknown to science. Given the dense forest and difficult terrain of East Timor, it is possible that new, even larger specimens are waiting to be discovered. No one knows what is out there. These bear-sized beasts are known as *Ambyrhiza*, also called the giant hutia, and they were 1, times larger than a modern rat. These creatures were heavy and slow, indicating that they had no predators. The fossil record confirms that there were no other large mammals on the island at this time. The island the giant hutia stalked was much larger than it is today. Due to reduced sea levels during the last ice age, St. Martin, and Anguilla were all part of one island known as Greater Anguilla, which was 12 times larger than the current island. When the ice age ended and the sea level rose, the giant hutia could not adapt to its smaller environment. It went the way of the dodo.

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Chapter 5 : "Let the Rodent Do the Work": Reflections of a Beaver Believer

Beavers are among the largest living rodents in the world. They have thick fur, webbed feet and flattened, scale-covered tails. With powerful jaws and strong teeth, they fell trees in order to.

At weights of up to 70 pounds, they are one of the largest rodents in the world, second only to the South American capybara. And are second only to human beings in their ability to completely alter their environment. Beavers are round, well-furred animals, with small ears, large, orange-colored front teeth, beady eyes, and webbed hind feet. Their most distinctive physical feature, though, is a flat, naked, and leathery tail. But despite the myth, beavers do not use their tails to carry mud, or pack it down. The beavers' incredibly thick, double coat of fur was once extremely popular, particularly in the millinery industry where it was used to make the finest, water-proof top hats for people like Abraham Lincoln. As the Eurasian beaver population was depleted, the demand for beaver pelts spurred on the exploration of Canada, and fed the fur trade between French, English and Native American peoples. The beaver also has strong, nimble, hand-like front paws, that have semi-opposable little fingers not thumbs, with which they maneuver all sorts of building materials. And they are remarkable engineers, using twigs, mud, rocks, branches and entire logs to build two different types of structures, dams and lodges. When beavers come into a new location, they first build dams across small streams. The dam traps water behind it and creates a pond. The purpose of the dam is to provide deep enough water for the beaver to build a safe home - called a lodge. Beavers build their lodge in the middle of the pond, where the pond water provides safety from predators like bears and wolves. But the water level must also be deep enough not to freeze solid in the winter, because beavers live under the ice in the winter, accessing their lodge from underwater entrances and eating twigs and branches they have stored in their submerged larder. The beaver is a vegetarian who eats not just aquatic plants, but also the twigs, leaves and soft branches of all sorts of trees. They also eat the cambium of the tree, which is the soft, woody layer just beneath the mature bark. Cambium makes up a large part of the beavers' diet, and requires that they chew straight through the tough outer bark to get to it. The beavers' four front teeth need to be so strong that the enamel on the face of the teeth is infused with iron. The iron-rich enamel is resistant to the acidic qualities of tree bark, and causes the teeth to be a bright orange color. The back surface of the teeth are a softer dentin, so the back of the teeth wear out faster than the front, maintaining a tapered cutting edge like a chisel. There are two species of beaver, the North American beaver, and the Eurasian beaver. They are very similar in appearance with the North American animal being a bit larger, with a rounder head, and a wider tail. They are both highly social animals that live in small, busy, incredibly cooperative family groups. Beavers have the longest childhood of any rodent, with youngsters staying with parents for 2 to 3 years as they learn the skills of hydro-engineering. Most active at night, they rely on their excellent senses of smell and hearing, but are extremely near-sighted, and will sometimes simply feel around for things with their little hand-like front paws. They constantly manipulate their environment, often for the betterment, but sometimes to the detriment of those around them, they communicate often, with squeaks, whines and moaning sounds, they are affectionate with family members engaging in play and mutual grooming, and they also mate for life. They create a wide, cone-shaped lodge with underwater entrances to live in, and they build dams to provide them with areas of deep, calm water within which to build their lodge. Beavers may build several dams along waterways in order to flood a large enough area for a safe home. The lodge requires a water depth of at least 4 feet to prevent freezing of the underwater entrance ways. Dams average about 15 feet in length and 5 to 8 feet deep, but sizes vary considerably. There is a 2, foot long dam in Canada, that was discovered in when it was seen by satellite. It was constructed over 30 years ago, and is maintained by 14 different beaver colonies. Beavers start construction of the dam by laying a base of stones or thick tree stumps across the waterway. They can move objects as heavy as themselves, and can fell trees as wide as 24". Once the dam foundation is in place, they begin to place logs and branches across it. They weave these together as they build, and leave lower relief

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areas along the crest of the dam for water to flow over. Finally, they pack any crevices with mud, pebbles, and moss, to make the dam even more watertight. If the initial dam does not create a deep enough pond to make a lodge, the beaver may build numerous secondary dams to stop more water flow. Once the pond is deep enough, lodge construction begins. Beavers create an island of mud in the middle of the pond by dredging the bottom, and pushing mud into a pile with their front paws. Then they build a house on top of the mud, using logs and branches. They cover the lodge with mud, except for the very top which serves as a ventilation hole. Beavers usually re-mud right before the first frost, so the mud freezes and hardens the roof. In preparing for winter, the beaver gathers large amounts of fresh branches, and carries them underwater to a larder by the entrance of the lodge. They push the ends of the branches into the mud to keep them in place, and access this food during the winter, when the pond has frozen over. Even when the ice is hard, and predators can walk on it to get to the lodge, it is too well constructed for them to reach the beavers inside. They may see the steam of the beavers breath rising from the chimney hole the beavers leave in the top of their lodge, and may hear the beavers inside, but many a frustrated wolf or cougar has dug at a beaver lodge with no success. The beavers will emerge in the spring, when the ice has melted, and their family is usually several members larger than it was when they settled down for the winter. On rare occasions, beavers get trapped inside their lodge, when the water level is too low, or they may be forced to try to get out when they run out of food in their larder, but usually the busy beavers have prepared more than adequately, and survive another cold winter under the ice, in the warmth of their incredible lodge. Like most rodents, the beaver is a fairly active animal with a relatively high metabolism, but the beaver has allot to show for all the activity. The North American beaver can be found throughout much of the continent, in areas where there are streams and rivers. They require areas wooded with some younger growth deciduous trees such as Aspen, cottonwood and willow, which they use both as a food source and as building material. A group of beavers is called a family or lodge, but most often, a colony. The typical colony has 6 to 12 members, which are generally a mature pair and their last 2 or 3 batches of youngsters. Immature beavers are called kits, and they take awhile to mature, hanging around the lodge with mom and dad for 2 to 3 years, learning how to build a proper home. Beavers are peaceful animals, and show little, if any, aggression. When wild beavers require human handling, for whatever reason, they rarely attempt to bite, but may whine and squeal in protest. Likewise, the lodge they work so hard to build and maintain, may be used by numerous different animals, including dormice and muskrats. These creatures may even eat from the food stores the beavers procure for themselves. But when new beavers attempt to settle in the pond, the colony will drive them off together. They will also mark the perimeter of their pond with dirt mounds that they scent mark with their own special odor. Beavers have two castor sacs under their tails from which they secrete castoreum, a goo that actually smells rather good to humans, and is occasionally used as a perfume extract and vanilla food flavoring. The beaver colony spends much of their time maintaining and repairing both their lodge, and any dams they have built, and collecting and storing food for the winter. Edible branches are stored in an underwater pantry called a larder, which they will access from the lodge, when the pond has frozen over. The family may even have a less elaborate summertime lodge that they use until it is time to commit to the winter lodge. And entire colonies may relocate to an entirely new region, if or when resources are scarce. Youngsters will travel about the pond with their parents getting lessons on tree-felling and roof repair. Parents may use their big flat tails to slap the water as a warning of approaching danger, and the entire colony will dive for cover. In the water, the beaver is supremely adapted. Their large hind feet are completely webbed between the toes, the tail can be used for both propulsion and steering, the nose and ears clamp closed with special valves when they submerge, and they can hold their breath for about 15 minutes underwater. On land, however, the beaver is a bit awkward, short-legged and round, with a slow, rocking gait and poor eyesight. Even 60 pound adults can be quick victims when on land, so they prefer not to travel too far on logging trips. When trees and other resources are too far away, they solve the problem by digging canals sometimes hundreds of feet long. These canals, created by simply shoving mud out of the way, are often dug deep enough for the beaver to float log sections down. Their yearly courtship involves happy wrestling and play, and

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mating takes place inside the lodge, at the coldest time of year. Mother beavers have 3 to 5 babies on average, and the youngsters are called kits. Gestation is about days, and in the last week or so, the mother prepares a soft nest in a nursery chamber of the lodge, which is usually higher up than the main living chamber, and further from the entrances. The mother gives birth in early spring, when the ice has melted, and the other family members can bring fresh food for her. Newborn beavers are relatively large and well developed. They weigh about 14 ounces, and are already covered with waterproof fur. Kits begin to chew on fresh vegetation at only a few days old, and are weaned at 2 or 3 weeks. They will follow closely behind their mother, not in single file as many baby animals do, but in a little half-moon pattern around her rear. When they get tired, they will actually climb up and ride on her back. Father beavers are exceptional parents and will begin to take the kits on excursions once they have been out a few times. The other family members, are usually yearlings or teenagers from the last 2 years litters. They also help with the rearing of the babies, swimming with them and babysitting. Unlike many rodents which are moved out of the house and completely independent in a matter of weeks, a juvenile beaver has an engineering degree to study for. They begin to train in what is practically an apprenticeship. Watching at first as their parents demonstrate tree chopping, stone positioning, twig arrangement, and waterproofing, and then diving in to help with these various chores. Yearlings begin to work on their own, particularly with the less demanding job of waterproofing the roof of the lodge, or plugging holes in the dam, dredging up armfuls of mud and moss, and pushing it into crevices with their nimble paws. Eventually, at 2 or sometimes 3 years old, young beavers leave the family pond, usually one at a time, upstream, downstream, or boldly across the valley. This is undoubtedly the most dangerous time in a beavers life. Without the safety net of family, the security of a familiar landscape, even the comfort of the lodge to sleep in, they may travel for days, and as far as 40 miles to find their own piece of land. Along the way, other beaver colonies will chase them off, or they may be lucky enough to run into another wanderer of the opposite sex. Whether alone or in a new relationship, the young beaver will find a new, untouched stream, or perhaps an old dam and lodge, abandoned years before when the large trees ran out, that has regrown, and is perfect for a new colony. This Form cannot be submitted until the missing fields labelled below in red have been filled in [Vote Here for Your Favorite Animal!](#) Can beavers fight the impact of drought? Fortunately, beavers are making a comeback, but across Asia, Europe and North America, many of the areas where beavers used to be plentiful are suffering from drought. Drought is a period of low precipitation - a basic lack of rain.

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Chapter 6 : Beavers & Other Rodents: A Portrait of the Animal World by Paul Sterry

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Now, he says, restoration of beaver populations can help humankind fight drought, improve water quality “ even address climate change. Why did you decide to write about beavers? The project relocates those beavers to headwater streams high in the Okanagan-Wenatchee National Forest. The idea is that up there the beavers can create fantastic wildlife habitat and store water without damaging private property. Being out there with the Methow Beaver Project team “ particularly with Kent, who is a gifted interpreter of the landscape “ I realized that my mental model of what aquatic ecosystems should look like omitted beavers. I started to realize that beavers are a really important landscape-scale actor in North America, and that I needed to revise my conception of a healthy stream to include these incredible rodents. The transformative role of beavers on the landscape became muted, of course, because the animals themselves largely disappeared. When did that happen? Europeans trapped beavers out of every single river, stream, lake, and pond they found, or traded for pelts with Native people. And as beavers vanished the wetlands they created dried up. Untold millions of acre of watery habitat was lost. By the time the second wave of farmers showed up a few decades later, North America had been permanently transformed by the fur trade. Colonists came to internalize this much drier, beaver-less landscape as natural. We lost countless beaver-created ponds and wetlands without realizing the extent of the destruction. As a result, when we envision a stream as a clear, clean, straight, shallow, narrow thread running through the landscape, we forget to include the network of ponds and wetlands and side channels that beavers would have created. Aquatic ecosystems would have been much more complex than they are today. Those trappers obviously saw beavers a commodity. But as you write, there emerged a hostility to beavers even after the fur trade disappeared. We tend to feel hostile towards animals that cohabitate well with us. Beavers, in some ways, are a lot like us. Just as we modify our own surroundings to maximize our food and shelter, beavers are relentlessly driven to change their environment as well. We like to build towns and farms and roads in floodplains, while they like spreading water all over those floodplains. The inevitable result is conflict, and, in most cases, the offending beavers get killed. How exactly do beavers transform the land? And what did North American landscapes look like before the fur trade? The classic beaver behavior that every school kid knows, of course, is that they build dams. The purpose of those dams is to create ponds and wetlands that provide shelter. A beaver on land is a slow, fat, waddling snack for wolves and bears and cougars. By contrast, beavers are incredibly powerful and agile swimmers. In so doing, they inadvertently create huge amounts of habitat for other creatures as well. In the American West, wetlands cover just 2 percent of the land area but support 80 percent of the biodiversity. Frogs and salamanders breed in beaver ponds. Juvenile trout and salmon use ponds as rearing habitat. Waterfowl forage in beaver ponds and even nest directly atop beaver lodges. Moose hang out in beaver ponds to cool off. Woodpeckers will use dead trees killed by rising water levels. While beavers were nearly wiped out, you also call them one of the great success stories of the conservation movement. How have populations recovered so successfully over the past century? They were also assisted by humans: In the early s, naturalists and biologists started to wise up about how important beavers are, and began relocations and reintroductions all over the country. The most famous beaver relocation occurred in Idaho, where biologists stuck the animals in crates, strapped them to parachutes and dropped them out of airplanes. They air-dropped 76 beavers into the Idaho wilds in , and 75 of them survived. In New York the state introduced about 20 beavers from Canada and Yellowstone in Just 11 years later, there were 15, beavers in the region descended from those early relocations. By the s, all of those New York beavers had started to disperse into other states and recolonize the landscape. To what extent have efforts to restore beaver populations affected these landscapes? It depends on the place. There are areas where beavers are doing really well and approaching their historic densities again “ and helping to re-water pretty arid

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ecosystems. But in general beaver populations are still a tiny fraction of what they could be. In Utah, for example, scientists estimate that beavers occupy between 8 and 17 percent of the available habitat. People always ask if beavers are endangered. The answer is no: But then you think about how ubiquitous they were when Europeans first arrived. Early naturalists estimated that as many as million beavers inhabited the continent. So 15 million starts to look a little depressing. They can certainly be a challenging species to coexist with. So they can be challenging for sure. You can pass the pipe through a beaver dam or road culvert, move some water out of the beaver pond, and regulate the height of the pond – hopefully to a level that is acceptable to both humans and rodents. Have you learned anything about beavers that surprised you? Photo by Ben Goldfarb Goldfarb: But I was surprised to find the number of farmers and ranchers who are also getting into beavers. This is especially true in arid states, like Idaho and Utah and Nevada, where people in the agricultural community recognize that your most important resource is water – and nothing stores water like a beaver. I found a lot of rural livestock producers actually modifying their agricultural operations to facilitate the recovery of beavers, and, as a result, becoming more resilient in the face of drought. What lessons can humans learn from beavers as we try to address our own environmental challenges? To me the fundamental lesson of beaver restoration, and of the book, is the importance of working with nature rather than against it. As a species our inclination is to dominate nature – to channelize streams, pave over wetlands, and clearcut forests. Rather than dominating the natural world, beaver work is really about cooperating with it. Beaver restoration suggests a new approach to ecological restoration in general – one that is more holistic and in tune with the natural world. Photo by Ben Goldfarb.

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Chapter 7 : Beaver Facts - Animal Facts Encyclopedia

Rodents (Rodentia) are a group of mammals that includes squirrels, dormice, mice, rats, gerbils, beavers, gophers, kangaroo rats, porcupines, pocket mice, springhares, and many others. There are more than species of rodents alive today, making them the most diverse of all mammal groups.

Castor fiber Beavers are more than intriguing animals with flat tails and lustrous fur. American Indians called the beaver the "sacred center" of the land because this species creates such rich, watery habitat for other mammals, fish, turtles, frogs, birds and ducks. We now know that beaver damming provides essential natural services for people too. Beavers prefer to dam streams in shallow valleys, where the flooded area becomes productive wetlands. These cradles of life support biodiversity that rivals tropical rain forests. Almost half of endangered and threatened species in North America rely upon wetlands. The latter occurs because several feet of silt collect upstream of older beaver dams, and toxics, such as pesticides, are broken down by microbes in the wetlands that beavers create. Thus, water downstream of dams is cleaner and requires less treatment for human use. That is just one reason why we find the flat-tailed species fascinating. While some beaver behavior is instinctive, they also learn by imitation and from experience. Donald Griffin, the father of animal cognition, has said, "When we think of the kinds of animal behavior that suggest conscious thinking, the beaver comes naturally to mind. An Indian word for "beaver-like" also means "affable. Both parents care for the kits usually one to four that are born in the spring. The youngsters normally stay with their parents for two years, and the yearlings become babysitters for the new litter. By damming streams, beavers often raise the water level to surround their lodge with a protective moat, and create the deep water needed for winter food storage in northern climes. While other wildlife endure wintertime cold and hunger, beavers stay warm in their lodges with an underwater food cache of branches nearby. A beaver colony, can consist of six or more, including parents, yearlings and kits, yet they peacefully coexist in a lodge with underwater access to the iced-up pond for four months or more in the North. Natural Population Control Beavers rarely overpopulate because they breed only once a year, defend large streamside territories from strangers, and the two-year-olds leave home each spring to find mates. They are limited to a small fraction of the landscape that is close to waterways. Kits have many predators including hawks, owls and otters. Bears, wolves, dogs and coyotes will also take older beavers that are especially vulnerable when seeking new territories. Accidents are another frequent cause of mortality, including falls into abandoned wells, and especially traffic accidents. Trapping is the most common source of mortality. Beavers have fewer kits when occupancy reaches a certain level and food becomes scarce. In vast areas without trapping, beaver populations will peak, and then slowly drift down to a sustainable level. Removing beavers stimulates larger litters from survivors in the area. By the early s, beavers were almost extirpated from North America, Europe and Asia due to trapping and the subsequent draining of lands for agriculture. Estimates of the current N. When conflicts with humans arise, using modern methods can provide lasting solutions.

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Chapter 8 : List of rodents | blog.quintoapp.com

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Chapter 9 : About Beavers Â» Beavers: Wetlands & Wildlife

Beavers are the largest rodents (gnawing animals) in North America and the second largest in the world, behind the South American capybara. Beavers are powerful swimmers that can swim underwater for up to 15 minutes.