

# Porcupine

*Erethizon dorsatum*



## Other common names

North American porcupine, Canadian porcupine, common porcupine.

## Introduction

Porcupines are the second largest rodent in North America, behind the beaver, and the third largest rodent in the world, with the capybara being the largest. The name porcupine comes from an old French word, *porcespin*, which translates to “quill pig”. These quills are the porcupine’s most recognizable feature, and were used to decorate fabric and crafts by Native Americans before trade with Europeans brought them glass beads.

## Physical Description and Anatomy

Porcupines have a stout body, small head, short legs, and a thick, muscular tail. Adults are 24 – 35 inches (61.0 – 89.0 cm) long, and weigh 12 – 35 lbs (5.2 – 15.9 kg). They have large teeth that are covered with orange enamel, much like beavers. Their fur, which is interspersed with the quills, is coarse and dark at the roots, white at the tip. Their strong, curved claws and textured foot pads aid them in climbing trees. Their jaws are equipped with strong muscles to

grind the woody tissue that makes up most of their diet. They also have a large digestive system that takes up 75% of their body cavity, complete with symbiotic bacteria that helps break down cellulose.

An adult porcupine can have up to 30,000 quills on its body, everywhere except its belly. Each quill is actually a modified hair, developed for defense. Just like hair, these quills are shed on a regular basis, and new ones grow to take their place. It is a misconception that porcupines can shoot their quills, and they do not contain poison or venom. They are hollow and attached loosely to the skin, but can be raised erect like a cat puffing its tail, and are easily dislodged. They are barbed at the tip, and penetrate the flesh of any creature foolish enough to tangle with a porcupine. The barbs prevent the quills from being pulled out, and in fact they will work their way deeper into the flesh with each movement of the surrounding muscle. If left untreated they can work their way deep enough to puncture major blood vessels and vital organs, resulting in serious injury and even death.

**Caution:** It is not uncommon for dogs to get curious and get a face-full of porcupine quills. If this happens, DO NOT try and remove them yourself, as you will certainly cause more damage. Instead, immediately take your pet to a veterinarian for removal of the quills and treatment of the wounds.



A porcupine using its curved claws to hold an apple.



The back and tail of a porcupine, showing its bristling array of quills.

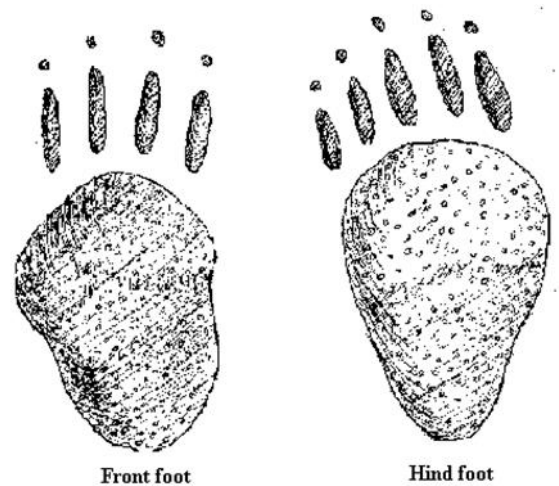


Close-up of porcupine quills. The dark tip has microscopic barbs that prevent the quills from being easily removed.

## Identifying features (tracks, scat, calls)

Porcupines are easy to identify in the wild because there isn't anything else that looks like a giant walking pincushion. Look for discarded quills along runs, at the base of trees, and outside dens. Their tracks are fairly distinctive, as they are pigeon-toed, with their feet pointing towards each other, and often accompanied by unique drag marks from the quills on its tail. Look up high in the canopy for signs of porcupine feeding.

Porcupines generally sit in the crown of a tree and strip the bark off the trunk. They also break off small branches to get to the buds and fruits at the ends of twigs, so look for piles of nipped twigs at the base of trees as well. Finally, if a porcupine has been in residence in a particular spot for any length of time, there will be large accumulations of scat, to the point that it looks like a river of scat flowing from the entrance to its den.



Porcupine tracks.

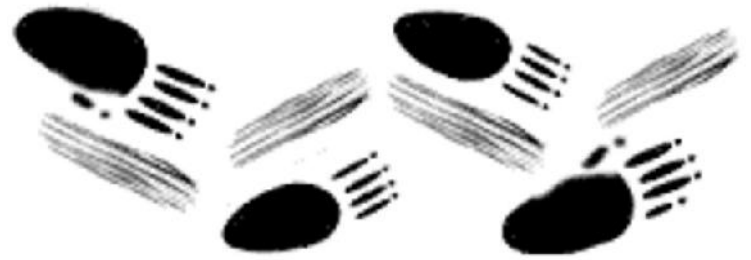
Front: (4 toes)  $1 \frac{5}{16}$  – 2 inches long by  $1 \frac{1}{8}$  –  $1 \frac{5}{8}$  inches wide

Hind: (5 toes)  $1 \frac{7}{16}$  –  $2 \frac{3}{4}$  inches long by  $1 \frac{1}{16}$  –  $2 \frac{1}{16}$  inches wide





Individual piles of porcupine scat.



Porcupine track pattern.



A river of porcupine scat, indicating this den has been in use for an extended period.



Porcupine feeding damage.





Close up of nipped twigs (top). Piles of discarded nipped twigs on the forest floor (bottom).

## Habitat

Porcupines are found in a variety of habitats, but they prefer mixed forests with plenty of ground cover. Most of their winter diet comes from both deciduous and coniferous trees, and they spend much of their time in the tree canopy.

## Behavior and Diet

Porcupines are semi-arboreal herbivores, spending much of their time off the ground and in the trees. They are adept at climbing, but on the ground they rarely move faster than an awkward waddle. Their built-in defense system means they don't often need to outrun predators. Instead, they raise their quills and swing their muscular tails. When angry or feeling threatened, they will

stomp their feet, hiss, grunt, shake their quills, and present their back and tail towards threats. There are few species willing to risk getting thwacked with a porcupine tail. The fisher is one of the only species that regularly preys on porcupines, though coyotes and bobcats occasionally take young individuals.

Porcupines are generally nocturnal, foraging at night. They do not hibernate, and they are active all year long. They are nearsighted, instead using their keen sense of smell to find food. Their diet is highly seasonal, changing with the availability of different foodstuffs. In spring, they feed on the new buds of red maple, and the leaf shoots and young leaves of aspen and red oak. In summer, they feed on fruits and herbaceous greens on the ground and in wetlands. They are able to swim, but will bring vegetation back to dry land to consume it. In early fall, they feed on mast crops like acorns and beech nuts, as well as apples and other fruit. In winter they eat the soft inner bark or cambium, buds, and foliage of hemlocks. Porcupines can cause serious damage to trees, and are capable of stripping a tree completely bare of bark and killing it. They eat about 0.9 lbs (0.41 kg) of food every day. The bulk of their diet is very low in nitrogen, and they are often at risk of starvation in winter months despite continuous eating.

Much of the food that porcupines eat grows at the outer edges of a tree's canopy, where the branches are slender and not capable of supporting the full weight of a fat adult porcupine. This often results in the porcupine breaking the branch and falling to the ground, impaling itself with its own quills and even breaking bones. This habit has resulted in porcupines evolving the ability to produce their own antibiotic compounds that coat the quills, preventing infection when they impale themselves. However, they can suffer serious injury or even death from a high enough fall. If they manage to avoid this, porcupines are actually one of the longest lived rodents, reaching 17 – 18 years.

**Caution:** It is not unheard of for people to be struck by falling porcupines. Neither you nor the porcupine will come out of this incident unscathed. Be cautious when you see signs of porcupines, and don't stand directly under them.

## Human Interactions

Porcupines are often considered a pest by forest managers because of their destructive bark stripping. They can become a nuisance to regular homeowners as well, gnawing on anything salty. This includes car tires and wood handled tools, as humans have sweat glands in their palms. The other danger from porcupines is injury to pets, most frequently dogs.

## Reproduction

Mating occurs in November and December. Males compete for mates, and perform courtship rituals with receptive females, which may include spraying the female with urine. After mating, females den in hollow trees, stumps, logs, under uprooted trees, rocky ledges, and sometimes in abandoned buildings. Gestation lasts 205 – 217 days before the female gives birth to one, rarely two, young. Quills of young porcupines, or porcupettes, are soft at birth, but harden within a few hours. Porcupettes begin feeding on vegetation at 2 weeks, but are not weaned until about 3 months. They are independent at 6 months, and begin breeding at 15 – 18 months.

## Fun Facts

An adult porcupine can have up to 30,000 quills.

A baby porcupine is called a porcupette.

A porcupette's quills are soft when it is born, so as not to harm the mother during birth, and harden within a few hours.

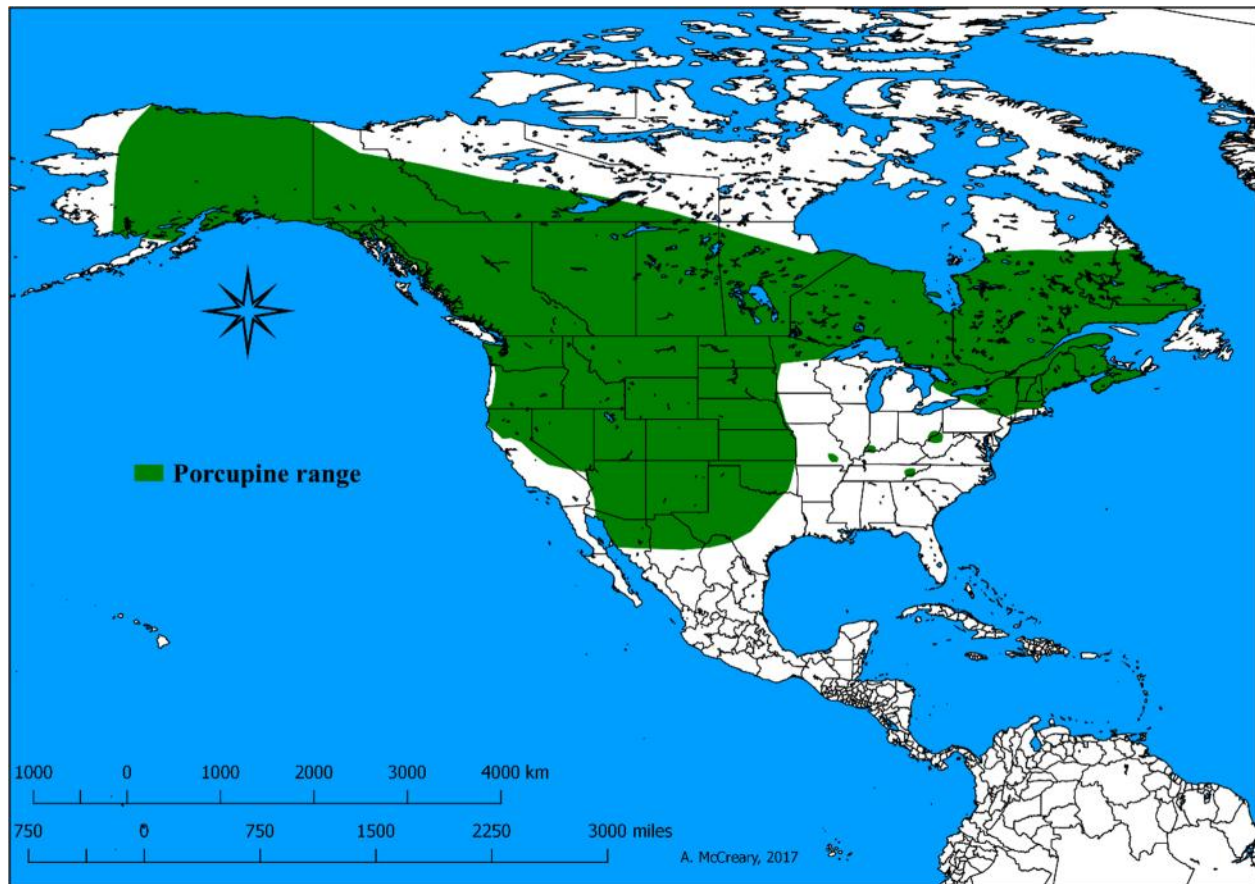
A porcupine's teeth never stop growing, and can grow up to 12 inches (30.5 cm) in a single year.

A porcupine can NOT shoot its quills, but it can raise them the way a cat puffs up its tail.

Porcupines produce antibiotic compounds that coat their quills, preventing infection when they accidentally impale themselves with their own quills.

## Range and Status

Porcupines are found across most of Canada, throughout the Midwest down to Mexico, and in the northeastern portions of the US. Populations are stable, and thought to be kept in check by predation by fishers.





## Management and Research in New York

Porcupines are one of the few unprotected species in New York, meaning they can be hunted and taken at any time of year, and there is no limit. However, a hunting license is still required to take unprotected species with a bow, crossbow, or firearm.

## Pictures

The following is a series of images taken of some porcupines enjoying apples at the Dyken Pond Environmental Education Center.













A pair of porcupines took up residence under this overturned boat behind the Education Center. Their accumulations of scat can be seen when the boat is lifted, along with one individual peeking out in the top right of the picture.

## At Dyken Pond

Porcupines are frequently seen waddling around Dyken Pond, especially around the Main Lawn near the parking. There is a crabapple tree behind the park office that provides delicious apples for porcupines to munch on. Just about every year some individuals take up residence in or around the tree, providing great photo opportunities for our visitors.

## Sources

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