



GET TO KNOW THE PLATEAU

North American Porcupine

Erethizon dorsatum

Habitat & Ecology

The North American porcupine is a large rodent that is flexible in habitat use and not restricted to specific plant communities. It ranges across most of North America, except for the southeastern coastal plain and the eastern great plains. Porcupines generally live 5-7 years and are common in forested and riparian areas on the Colorado Plateau, but they also occur in grassland, chaparral, and desert scrub. Porcupines are not gregarious except during winter in colder habitats where denning sites (rockfall caves, hollow trees, abandoned buildings, and brush piles) may contain multiple individuals of both sexes. Movements and home range vary with climate. Winter space use may be limited to a few hectares in colder climates with summer home ranges over 100 hectares. In contrast, winter and summer home ranges are similar in warmer locations. Densities vary considerably across their distribution, ranging from 1-10 individuals per square kilometer. Porcupines are primarily vegetarian and forage in arboreal and terrestrial settings. They feed on nearly all trees. Winter diet can be nearly exclusively cambium, phloem, and foliage. The principal winter food is conifers and hardwoods, but they also consume numerous woody shrubs. Spring and summer foraging generally shifts from arboreal to terrestrial vegetation, but they do feed on buds, catkins, and new leaves during spring. Ground vegetation consumed includes: herbaceous forbs, grasses, sedges, and riparian and aquatic plants. Individuals on the Colorado Plateau eat fruits of prickly pear cactus.

Description

Porcupines are large (3.5-18 kilograms) rodents conspicuously covered with long and sharp spines (quills) intermixed with hair. They are generally dark colored but highly variable (e.g., chestnut, cream,

A close-up of two porcupine quills. New quills will grow to replace lost ones. (Louann Barker)



North American Porcupine/NPS

brown, gray, yellow) with a short clublike tail. Their face is relatively small with a blunt muzzle, and they possess prominent claws. The porcupine is distinct among North American mammals as it possesses hairs modified as quills which are distributed dorsally from behind the nose to nearly the tip of the tail. Quills are primarily composed of keratin, they are stiff, sharp, and have tiny barbs at the tip. Porcupines erect the quill area when alarmed as a unique defense mechanism, and barbule covered sharp ends of quills may become lodged in the tissue of predators or overly curious individuals.

Conservation Status and Threats

North American porcupine is not listed as threatened or endangered in any state or country, and they are considered a species of "Least Concern" globally. Porcupines can be hunted in Colorado, Arizona and New Mexico but are considered protected species in Utah and not subject to harvest. Porcupine population trends aren't well studied and there's a notable absence of quantitative data throughout their range. However, the State of Maryland listed porcupines as endangered during 1971. Subsequent protection and habitat management by the state led to delisting in 2014.



Typically, this is how most North American porcupine are sighted, a dark ball of fur and quills high up in a tree. (Potawatomi Zoo CC BY-SA)

More commonly, porcupines are considered a pest, particularly in the timber industry, and they have been actively controlled in many states via bounty systems, poisoning, repellents, and mechanical barriers.

Related/Similar Species

Extant New World porcupines (Mammalia, Rodentia, Erethizontidae) are classified into three genera (Chaetomys, Coendou, Erethizon). The North American Porcupine is the monotypic member of the genus *Erethizon*, similarly the bristle-spined rat of South America is the only member of the genus *Chaetomys*. In contrast, there are 18 species of tree porcupines in Central and South America grouped in the genus *Coendou*. Tree porcupines are arboreal and possess prehensile tails.

Of Note

Old (Hystriidae) and New World (Erethizontidae) porcupines of the order Rodentia are an example of when convergent evolution gets prickly. Old World porcupines occur in Africa, Europe, and Asia, whereas New World porcupines are found in the America's. Both families of porcupine are readily recognized by coats of sharp spines, or quills, that protect them against predation. However, Old and New World porcupines are not closely related.

They evolved independently and are thought to have diverged from a common ancestor very early in rodent evolution. To the point, porcupines provide an example of convergent evolution, the process where unrelated species evolve similar traits independently, often due to similar environmental pressures.

References

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