



# Porcupines

The porcupine (*Erethizon dorsatum*) is fairly common in northern Arizona. You don't often observe them, but road-killed porcupines are often seen in Yavapai County and, if you are a dog owner, you or your furry friend may have had an unfortunate encounter. Porcupines prefer to live in coniferous forests, but sometimes wander to lower elevation riparian areas and wooded uplands. They eat herbaceous plants (including corn, alfalfa, and other crops), inner tree bark, twigs, leaves, and show a preference for Ponderosa pine, pinyon pine, aspen, cottonwood, and willow. Trees with thin, smooth bark are often preferred over those with rough, thick bark. On older trees, they are attracted to the thin bark that accompanies the new growth at the top of a tree.



Porcupine (*Erethizon dorsatum*) in tree (Joseph O'Brien, USDA Forest Service, Bugwood.org).

Porcupines are active year-round and are primarily nocturnal. They usually rest in a tree during the day. They also use caves, screes, thick timber, or slash piles for protective shelter. It is interesting to note that their feeding habits indirectly benefit other wildlife species. Clipped twigs that fall to the ground are used by deer and other mammals during winter months. In addition, the damage they do to trees exposes the sapwood. This allows insects, fungi, and birds to feed on the decaying wood. Other wildlife species then use these tree cavities for shelter and reproduction.

Porcupines are the second largest rodent in North America (the beaver is the largest native rodent). They breed in fall, and after a seven-month gestation period, usually produce one offspring in spring. The young are capable of eating plant material within a week of birth and they generally stay with the female through the summer. Survival rates of young porcupines are usually high.

Porcupines have long claws and the soles of their feet have a pebbly surface. This helps them climb trees and provides them with a keenly developed sense of touch. Contrary to popular belief, they do not "shoot" their quills. Rather the quills are loosely attached and easily dislodged when the flailing tail makes contact with an enemy. Tiny barbs on the quill tip expand when moistened by the enemy's tissue fluid and are pulled inward by muscle contractions. Each animal has about 30,000 quills. The tail quills also help them to grip tree trunks and branches.

Predators do a fairly good job keeping porcupine populations in check. Some porcupine predators in our area include coyotes, bobcats, mountain lions, black bears, and great horned owls. The literature mentions that coyotes are noted for eating the quills. How they maneuver these through their digestive tracts is not known, but they have been noted in scat.

In agricultural and residential areas, porcupines cause a variety of unwanted damage. Fruit and ornamental trees, sweet corn, alfalfa, and small grains are often consumed. They have also been known to chew on wooden tool handles and canoe paddles in search of salt and buildings in search of plywood resins. They also pose a significant threat to domestic dogs, which never seem to learn to leave them alone.

The best strategy to prevent damage from porcupines is exclusion. Fences, climbing barriers, and cages around plants are commonly used. For gardens, 18 inch tall poultry wire with a smooth electric wire 1.5 inches above the top is effective. Also, a simple smooth electric wire 4-6 inches above ground can provide adequate protection. This also prevents beaver damage. Of course, porcupines are not the only pests to exclude from your garden. Javelina, wood rats, deer, elk, etc. must also be considered.

Trees can be protected by wrapping the trunk with 30" wide aluminum flashing (this makes it difficult to climb) or creating a sheet metal barrier that they cannot climb around that is fixed to the trunk. Live trapping is the best solution to dissuade persistent porcupines. These can be baited with salt soaked cloth, sponge, or piece of wood. Do not shoot or lethally trap a porcupine without first calling the Arizona Game and Fish Department. They should also be able to provide you with a suitable release site for live-trapped animals (at least 25 miles from your current location). You may also simply call a licensed wildlife damage control operator to handle this for you.



Porcupine damage to conifer tree trunk and branches (Joseph O'Brien, USDA Forest Service, Bugwood.org).

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