



Small Mammals



Dog Family: Foxes and Coyotes (Canidae)

Red Fox (*Vulpes fulva*) and Gray Fox (*Urocyon cinereoargenteus*)

Habitat: red foxes live in more open terrain while gray foxes prefer brush cover; they dig dens or use old woodchuck dens

Physical characteristics. Whereas the gray fox has a black-tipped tail, the red fox has a white-tipped tail. The red fox is generally light red or orange in color, with white underparts. The gray fox is dark-colored, with red around the face, shoulders, legs, and hindquarters. The red fox is the size of a small dog, weighing about 15 pounds. The gray fox is about the same size as its red "cousin".

Diet: rabbits, squirrels, mice, birds, fish, crabs, insects, fruits, berries, nuts



Coyotes (*Canis latrans*)

Diet: grouse, turkey, mice, rabbit, deer, fruit

Habitat: dens in logs, brush piles, bushes, rock crevices

Management: hunting and trapping. Because effective population control is difficult, hunting may represent one method of suppression. In many areas where the coyote is listed as a nuisance species, there are no “bag limits” and no set season within which hunting is designated. The coyote may eventually become a hunted species throughout the United States. In several Eastern states, coyote hunting seasons have been successfully established, with licenses issued. Some states have encouraged off-season coyote hunts with hounds.

Management: predation. The livestock threat from coyotes in the East is much easier to manage than the threat facing western ranchers. Eastern farms and ranches tend to be much smaller in acreage as well as in sheep flock size compared with the West. In the East, enclosed pens are the herd’s primary grazing space rather than the open range. The most successful preventive measure to reduce livestock predation by coyotes is to use electric fencing, which shocks the coyote when the fence is touched. Less expensive—but still effective—is using woven wire galvanized mesh fencing to exclude predators from the flock.



Beaver (*Castor canadensis*)

They live near water. They can weigh up to about 80 pounds. They have layers of fat and thick fur that insulate them from energy losses in the cold waters in which they live.

Beavers build dams and lodges (mounds of woody material). There are often two lodges in the middle of a lake or pond in which the beavers stay over the winter.

Flooded areas often produce abundant long-stemmed plants that are the forage of beavers. These animals store stems under water, keeping them for later use. Beavers also eat the underbark (cambium) and green bark of poplars, cottonwoods, aspens, and willows. As food supplies dwindle, they may eat conifers and other trees and shrubs. Water and distance from shore provide a special type of cover, giving beavers some protection from large predators.

Beavers produce abundant secondary benefits to other animals. Beaver marshes are usually rich in

- Bird life
- Muskrats
- Amphibians



Muskrats (*Ondatra zibethicus*)

Physical characteristics: The muskrat has a flat tail like the beaver. However, the muskrat's tail is flattened vertically. The brown muskrat is much smaller than the beaver (1 to 5 pounds) and lives on shorelines and in lodges built in the water. It's rarely seen in daylight.

Habitat. build lodges or piles of debris. They may also build homes in streams, lakes, and ponds or by digging tunnels in a river bank. This activity can loosen the earth in the dam, allowing water to flow through it. When the water reaches high levels, rushing water will destroy the dam.

Diet: eat plants, clams, crayfish, snails, insects, and carrion (parts of animals found dead). They consume large amounts of wetland vegetation and can clear vegetation from areas.

Disease, parasites, and mortality. As with other animals, when the population density is very high there are stresses, and the animals move into other areas. Disease and parasites are high during these periods.



Rats (Wood and Cotton Rats)

Wood rat. The wood rat is a large, handsome rodent that has become rare. It lives in caves and ancient forests. The wood rat collects acorns and other nuts that when dispersed increase the chances of future forest survival. This animal also serves as food for bobcats, hawks, owls, and weasels. The wood rat's habit of collecting and storing objects—small bones, unusual pebbles, and nuts—has provided insights into the ecological communities from the last glacier period in the United States.

Cotton rat. Rarely are attempts made to increase cotton rat populations. This is an example of a species for which stabilizing or decreasing the population are the two reasonable options. However, managers of hawk, owl, weasel, and snake populations would disagree. Cotton rats can cause serious crop damage. As the crop value increases, so does the damage.

METHODS OF RAT CONTROL: trapping, exclusion by fences, eliminating nest sites, poison control



Bobcat, Lynx (*Lynx rufus*, *Lynx lynx*)

Physical characteristics. These animals are short-tailed cats that can grow to 3 feet long and weigh about 40 pounds. They have strong, compact bodies, and their ears have conspicuous tufts (Figure 11). Colors vary from tan-brown to gray-brown, with many small black spots and streaks.

The northern lynx is larger than the bobcat (by about 10–15 pounds). The lynx lives in northern states and Canada, and there are several species of the smaller bobcat that range widely from New Mexico to Maine.

Habitat/management. Bobcats are found continent wide. Subspecies occur from Canada to Mexico. They're found in rough areas, dense brush, woodlands, canyons, ravines, and rock outcrops. The northern lynx is well adapted to the cold, deep snow, and spruce/fir forests.

Diet: As carnivores, bobcats eat a variety of animals and some carrion. However, rodents and rabbits are their major food. The northern lynx is strongly dependent upon the snowshoe hare population. As the hare population goes up and down, so too does the bobcat population.



White-tailed (*Lepus townsendii*) and Black-tailed (*Lepus californicus*) Jackrabbits

Physical characteristics. Jackrabbits (hares) have long ears and long hind legs. White-tailed hares are brownish gray in summer and white in winter. The tail is white. Black-tailed jackrabbits are smaller than white-tailed jackrabbits. The former are brownish gray year-round. They have black-tipped tails. Fur color for all animals probably has great survival (camouflage) value for them. However, another theory holds that most animal color is related to ability to effectively cool the animal's body during the heat of the day and conserve energy at night. In the case of the jackrabbit, its relatively large ears help maintain a desirable energy balance by functioning as "radiators."

Habitat. White-tailed jackrabbits live from the Great Plains westward; black-tailed jackrabbits have a more southern range that includes Mexico. Jackrabbits live in grasslands and meadows and usually avoid forests. However, they're found in savannas (grasslands with scattered trees and shrubs).

Jackrabbits are a food source for coyotes, bobcats, foxes, and eagles. They eat grasses and browse on bark and stems when other foods are scarce.

Jackrabbits are rarely protected by laws and can be hunted or trapped.



Mink (*Mustela vison*)

The mink is a carnivore who exists in the wild and is also raised commercially ("ranch mink"). Its short, dense fur is especially attractive. The mink is semiaquatic and feeds on crayfish, fish, and other wetland life—especially the muskrat. Mice, rabbits/hares, and squirrels are major food sources for the mink.

The mink weighs about two to three pounds. It will eat any small animal it can grab and overpower. In the past it has been heavily trapped. Populations have also been reduced by human land use. Food supplies for the mink have been reduced by pollution of many types.

Increasing population numbers. Trapping of mink needs to be very carefully regulated. Also, efforts should be made to increase these animals in the wild, because heavy trapping has partially led to generally low populations. The other causes of low mink numbers are pollution and sweeping land-use changes near waterways.

Mink aren't rapid reproducers. It's difficult to increase their populations because they feed upon other animals—not on vegetation. Not only pollution and trapping work against the mink, but also the laws of energy. Energy is lost at each step as it moves from the sun to plants, then to rodents, and then to mink. Thus the mink is at the end of the energy food chain.

