

Foxes in New Jersey

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Management of Fox Problems:

Problems associated with foxes include depredation on domestic animals, perceptions of danger to humans (healthy foxes pose virtually no danger to humans), and their potential to carry disease organisms. Foxes will prey on small livestock such as ducks, chickens, rabbits, and young lambs, but generally do not bother larger livestock. Cats may also be preyed on. Foxes often carry their prey to a secluded area or their den where it is eaten by the adults and young.

Livestock can be protected from foxes by secure pens, coops, or fencing. Most predation occurs at night so it is particularly important to provide protection at that time. Foxes will dig or squeeze under poorly maintained fences and may climb over small fences. Some electric fence designs can provide good protection. Outdoor dogs may also keep foxes away. Potential food sources, such as pet food, meat scraps on compost piles, and fruit below fruit trees should be eliminated. Dead livestock should be properly disposed.

Many of the methods used to protect livestock can also be used to protect pets. Pets are often easier to protect because they can be kept indoors at night and can be supervised while outdoors by their owners. Human presence is often a deterrent to foxes. Foxes that travel into residential yards should be harassed or scared with loud noises to prevent them from becoming habituated. During the spring, disturbing a den site physically or with unnatural odors (or a natural deterrent, such as coyote urine) may prompt foxes to move to an attractive den which may be farther from yards and houses.

Foxes, especially red foxes, commonly live in close association with human residences and communities. They frequently inhabit yards, parks, and golf courses, especially areas that adjoin suitable, undeveloped habitat. Healthy foxes pose virtually no danger to humans. Foxes can grow accustomed to human activity but are seldom aggressive toward people. Expanding housing development, particularly in historically rural areas, increases the chances of interactions between humans and foxes, as well as other wildlife.

Many homeowners do not realize that their lawn may be a more attractive habitat to foxes than surrounding mature forest. Eliminating healthy foxes is not warranted based solely on human safety concerns. People uncomfortable with the presence of foxes should remove attractants, exclude foxes with fencing and employ scaring techniques. In many cases, homeowner's perceptions of problems are unfounded, and in some cases, the mere presence of a fox is perceived as a problem.

Foxes can carry the organisms responsible for several contagious diseases such as mange, distemper and rabies. Animals that appear sick or that are acting abnormally should be avoided. The following symptoms may indicate the presence of rabies or other neurological diseases in mammals: unprovoked aggression, impaired movement, paralysis or lack of coordination, unusually friendly behavior and disorientation.

Local animal control officers, police, or the Division of Fish and Wildlife's Wildlife Control Unit or the DEP Hotline (877-WARN-DEP). should be contacted if assistance is needed with a diseased animal. Please note that healthy wildlife cannot be trapped and relocated by animal control officers or destroyed.

Residents seeking additional guidance on managing wildlife are invited to consult with wildlife officers at the Wildlife Service office of NJDEP at 908-735-4513.

Background Information on Foxes

The Red Fox. Historically, Red Foxes were divided into two species, *Vulpes vulpes* in the Old World and *Vulpes fulva* in the New World, but today they are considered to be one species, *Vulpes vulpes*.

If red foxes were native to New Jersey during early colonial times, the animals were not abundant. Conflicting records and a presumed difference between the native red fox and the introduced European red fox caused confusion concerning early accounts regarding the distribution and introduction of the red fox in North America. A few accounts have assumed that there was no native race of red foxes, whereas others maintain that introductions were limited in scope although introductions were undoubtedly made at several sites. The reason for these introductions was augmentation of fox populations for hunting; settlers were unhappy with the sport given by the native gray fox, which treed rather than ran or ran in a much smaller area than would the red fox. Records suggested that red fox were introduced from Great Britain to the colonies in the late 1600s.

Today, red fox is found throughout North America and Eurasia, portions of North Africa and Australia where they were introduced during the nineteenth century. In New Jersey, the red fox is classified as both a game and furbearer species (i.e., it has both an open hunting and trapping season).

The pointed ears, slender muzzle, and slanted eyes, bushy and unusually long tail, coupled with its small dog size and typical orange-red coloration, make the red fox instantly recognizable to most observers. The tail is typically up to 70% of head and body length. The eyes of mature animals are yellow. The nose is dark brown or black.

The pelt color of red foxes ranges from a pale yellowish red to deep reddish brown on the head, sides and back, and white, ashy or slate gray on the underside. The lower legs are usually black and the tail has a white tip.

Two other color variations occur with the range of the red fox, but rarely south of Canada. The cross fox has reddish brown fur and a cross pattern which is a black stripe down its back and another across its shoulders. The silver fox is black or very nearly so with a white tip on the tail and silver frosting on the tips of some or nearly all of the guard hairs.

Male foxes, (both red and gray) are called "dogs" and females are known as "vixens".

The exact breeding period for red foxes varies across the geographic range of the species: January-February in the central regions (including New Jersey), December-January in the south, and February-April in the north. Gestation takes about 52 days. Females may mate with more than one male but will establish a partnership with only one. Prior to and for a time after giving birth the female remains in or at the den. The male provides food for the female but does enter the den. The male remains nearby and assists the female in raising the young.

Litters size may vary from one to as many as fourteen pups, with an average of about five. Red fox pups are born blind but open their eyes by about 14 days after birth. The pups will leave the den by 4 or 5 weeks after birth and are weaned by 8 to 10 weeks. The family group remains together until the autumn after the birth when the young will disperse. Sexual maturity is reached by 10 months for both male and female young.

Red foxes can weigh from about 8 to 15 pounds, but in New Jersey will generally weigh about 12 to 13 pounds for a large, adult male. Males average about 2 pounds heavier than females. Generally, adult foxes measure 39 to 43 inches from the tip of the nose to the tip of the tail. In their first autumn, juveniles are as large as adults.

Other than when raising young and during breeding season, the red fox is a solitary animal and does not form a pack like wolves. As with all species, home ranges will vary in size depending on the quality

of the habitat. Home ranges normally will be between about 2 and 7.5 square miles. During some parts of the year adjacent ranges may overlap somewhat, but parts may be regularly defended suggesting that red foxes are at least partly territorial.

Family groups and/or individuals use a main earthen den in conjunction with other emergency burrows within their home range. Foxes often take over and utilize dens of other animals, such as woodchucks. The dens may be enlarged during the winter and prior to birth and rearing of the young. Several generations of foxes will often use the same den site.

Red foxes are strictly terrestrial and rarely enter water. Red foxes most often hunt and move about during evening, nighttime and early morning hours. Being a nonspecific predator, the red fox utilizes a variety of food types and prey. It is also a very efficient scavenger, and garbage and carrion are can be important to the fox's diet.

Throughout much of the year, however, meadow voles are the major prey, making up about one half of the red fox's diet. Other rodents are also eaten whenever available. In northeastern North America, dependent on season and local, woodchucks, eastern cottontails (and snowshoe hares where they are present) may also be preferred. Gamebirds such as bobwhite, ring-necked pheasants and ruffed grouse are seasonally utilized as well as any ground nesting birds and/or their eggs and young during spring and early summer. During late summer and autumn, fruits, berries, and insects may be eaten.

The Gray Fox. The Gray Fox (*Urocyon cinereoargenteus*) is one of the most beautiful furbearers in North America. Common in New Jersey as well as many parts of the United States where deciduous woodlands provide habitat, it is a seldom seen, secretive carnivore. Habitats for gray fox include wooded, brushy, and rocky areas. And, although they are occasionally seen in old fields and farm country, they do not prefer agricultural habitats, unlike the red fox.

Geographically, gray foxes live in North, Central and South America and range from extreme southern Canada to northern Venezuela and Colombia This range excludes the mountainous northwestern United States, the Great Plains, and eastern Central America.

Like most foxes, gray foxes resemble small, slightly built dogs with bushy tails. The general coloration of a gray fox is a strikingly beautiful grizzled gray that appears on the face, sides and tail. Portions of the legs and lower sides as well as large areas of the neck, ears and bottom portion of the tail are a rusty, reddish color with white areas on the chin, belly and insides of the legs.

Adult gray foxes weigh from about 6.5 to 15 pounds; generally, though, a large male will weigh somewhere around 11 to 12 pounds, and males will be slightly larger than females. Total length measurements (body and tail) range from about 30 to 44 inches including the 11 to 17-inch tail. A gray fox skull differs from all other North American canids by widely separated temporal ridges that form a U-shape.

The breeding season for gray foxes in New Jersey and the mid-Atlantic region usually occurs in February but within the gray fox's geographic range this will vary somewhat; occurring earlier farther north and later in the south. Gestation takes about 53 days and the litter size is generally four to six young but can range from one to seven. Males assist the females in raising the young.

By about three months, the pups will begin to accompany their parents while they hunt. After about four months, the young will have their permanent teeth and will forage on their own. In autumn the family group will break up as the young reach maturity and disperse. Both male and female will reach sexual maturity by one year.

Gray foxes generally have a home range of about 500 acres, however, home range size varies and can be much larger, because as with other animals the lack of availability of prey and den sites may extend or limit home range size.

Gray foxes have a capability unique for a member of the dog family; this is their ability to climb trees. Their strong, hooked claws allow them to scramble up trees to avoid predators and to obtain fruit. They descend primarily by jumping from branch to branch. Gray foxes are nocturnal or crepuscular and they usually remain dened during the day in hollow trees, stumps or old woodchuck burrows.

The gray fox is a generally a solitary hunter, but they may hunt as a pair, usually with a mate or offspring. They eat a wide variety of food types. The most important food source for the gray fox may be the cottontail but voles, field mice, shrews, and birds are readily eaten. The gray fox generally supplements its diet with whatever fruits are in season; generally utilizing more vegetable matter than the red fox.