



Eastern Coyote (*Canis latrans*)



The eastern coyote (*Canis latrans*) has created a great amount of controversy in Rhode Island. To some people, seeing a coyote in the wild or hearing them howl at night is a rewarding experience. To others, the coyote represents a threat to game animals, pets and livestock. Some people are fearful just knowing coyotes exist in the vicinity of their homes and neighborhoods. Although coyotes can potentially be a threat to free-ranging pets, they are rarely a threat to people and can even be beneficial by controlling rodent and deer populations. By using common sense and preventative measures, we can avoid creating situations and environments where coyotes can be a threat to pets or humans.

Coyotes are the most successful wild canid in North America, with populations found all across the country. This success is owed largely to the coyotes feeding habits. They are not specialized predators, but instead generalist and opportunistic predators and scavengers, consuming a wide variety of foods including small mammals, deer, carrion, birds, insects, fruit, berries and garbage. Additionally, they are able to thrive in a wide variety of natural and human-altered environments, including deserts, grasslands, forests, agricultural land, suburbs and urban areas.

Description

The coyote belongs to the mammalian Order Carnivora, a large group of mammals that are characterized by teeth designed primarily for chewing meat. The scientific name *Canis latrans* means “barking dog” and coyote (pronounced “ky-o-tee”) is a Spanish modification of the Aztec word “coyotl”.

The eastern coyote is predominantly brownish-gray, with varying amounts and shades of brown, black and tan. However, coloration of individuals can be highly variable. The tail is straight and has a black tip, and the fur is dense, long and coarse.

On average, eastern coyotes are larger than western coyotes. It is likely that some interbreeding has occurred between coyotes and eastern wolves in the past. Typical adult males generally weigh between 35 and 45 pounds with some individuals approaching or exceeding 50 pounds. Adult females weigh less, usually between 30 and 40 pounds.



Life History

Historic range and current range: At the time Europeans first established settlements in North America, the coyote's range was likely restricted to the prairie regions of North America west of the Mississippi River from southwestern Canada to central Mexico. The dominant canine predator in Northeastern North America at that time was the gray wolf (*Canis lupus*), some now question whether this was/is a separate species. Throughout the 18th and 19th centuries European settlement expanded westward, and the extensive eastern forests were cleared for agriculture and timber products. A network of linear travel corridors was created as roads, bridges, and railway systems were constructed. In addition to the unprecedented alteration of habitat, there was direct persecution of large predators such as the wolves and mountain lions that had previously competed for food resources with coyotes. Through habitat loss and unregulated hunting, populations of white-tailed deer, the primary prey of wolves and mountain lions, were also decimated.



Figure 1. Probable distribution of coyote in North America prior to European settlement

The range expansion of the coyote in North America is well documented. Coyotes followed settlers and prospectors westward, feeding on dead horses and livestock as well as in garbage dumps along travel routes.

With the wolf gone from most of Eastern North America and the landscape now consisting of a patchwork of agricultural and forest lands, there was an opportunity for the adaptable coyote to move east. The first eastern

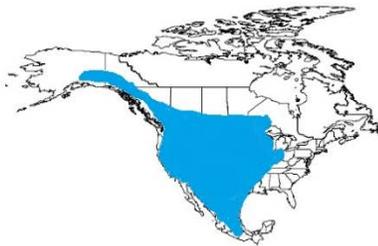


Figure 3. Approximate distribution of coyote in 1900 North America



Figure 2. Approximate distribution of coyote in 1990 North America

coyotes in New York State were documented in the 1920s. By the 1930's, coyotes had been documented in Maine, and in the 1940s Vermont (1942) and New Hampshire (1944). They were first reported in Massachusetts in 1957 and in Connecticut in 1958. As it states in the 1962 edition of "The Mammals of Rhode Island" by John Cronan and Albert Brooks "The coyote has never occurred in Rhode Island but its range has been extending steadily eastward in recent years and at some future date it might be seen in Rhode Island." In 1966 there were two reports of coyotes being killed by automobiles, one in North Smithfield and one in Cranston. In 1969, a coyote was shot in the Touisset section of Warren. Within the next several years coyotes began to appear in other communities such as Warwick, Smithfield, South Kingstown, and North Kingstown. Today, coyotes can be found in all Rhode Island communities except Block Island.

Behavior: Coyotes are generally shy and secretive animals. In proximity to humans, coyotes tend to be mostly nocturnal but may also be active during early morning and sunset, and may rarely be active during daylight hours searching for food. With a litter of pups, adults may need to forage for food continuously to keep them fed.

In urban and suburban environments coyotes prefer to travel through, and remain in close proximity to, areas with abundant hiding cover. This could include powerline rights-of-ways, urban stream corridors or parks and other open space areas. Taking shortcuts through suburban backyards to and from food sources is common.

An animal's home range is generally defined as that area that is used on a regular basis but not actually defended. The home range area can be flexible and may vary considerably with food availability, geography, season and other factors. It may also overlap with the home range of other individuals.

A territory is a smaller area within a home range, and it is defended against other individuals or groups of the same species. Home ranges for coyotes have been measured between 5 and 25 square miles. Coyote family groups or "packs" are often territorial and will defend their territory against other coyotes. They delineate territorial boundaries with markers consisting of scat and scent posts. Within any given area there may also be individuals that are transient, or do not belong to a particular pack.

Coyotes can produce a variety of sounds, including barks and howls. They use these sounds to communicate amongst each other, identify themselves and to convey their location or distance from other individuals.



Food Habits: Coyotes are generalists and eat a wide variety of food items. They will prey on a wide variety of animals including rabbits, squirrels, woodchucks, deer, mice, voles, birds, snakes, and insects. A large component of their diet consists of carrion: carcasses of animals that may have died naturally, or other causes such as starvation or auto strikes. Fruit and other plant materials are an important component of their diet as well. Coyotes will readily eat wild and cultivated apples, grapes, blueberries, strawberries, and even cultivated corn when it is available.



Breeding and rearing of young: Female coyotes come into "heat" once per year, usually during January or February. Coyotes are monogamous and maintain pair bonds for several years but not necessarily for life. Gestation lasts for approximately 63 days. Litter sizes range between four and seven, varying due to factors such as the females' age and health. Pups are born blind and helpless, and generally weigh between 8 and 10 ounces. The pups' eyes open at about 14 days. The mother nurses the pups for about the first two weeks after which time they are fed regurgitated food by the adults. The young begin eating solid food at around three weeks and are weaned at about seven weeks of age. The young begin to emerge from the den after about three weeks at which time they begin to follow the adults.

Occasionally other individuals, usually siblings from the previous year's litter, assist the parents with rearing the pups. After weaning, the den is abandoned and the pups are taught to hunt by the adults and older siblings. Pups

reach adult weight at about nine months. The family stays together until the autumn, at which time the young coyotes begin to disperse. Sometimes the young will remain with adults through the following year.

Coyotes den in a variety of locations including holes dug into embankments, rock piles or ledges, and dense thickets or under piles of debris, preferably in areas that are free from human disturbance. The same den may be used from year to year. Moving pups from one den to another because of disturbance or parasite infections is common.

Diseases

Coyotes are affected by a wide variety of parasites and diseases, including ticks, fleas, intestinal worms and heartworms. Coyotes may also be infected with canine distemper, canine parvovirus and sarcoptic mange. Coyotes, like all other mammals, are susceptible to the rabies virus; however, coyotes historically have not been a frequent wildlife host of the virus. Since their arrival to Rhode Island in the mid-1960s, there has been only two confirmed cases, of a coyote infected with rabies in Rhode Island.

Sarcoptic mange is caused by a mite that burrows into the skin, creating a great deal of discomfort and often leading to a weakened condition of the animal. Animals infected with mange often have little or no hair on their tails and backs. Mange also commonly infects red foxes.

Canine heartworm is commonly found in adult coyotes. In severe cases it can lead to impaired stamina and death.

Regulatory Status

Coyotes are classified as protected furbearers under Rhode Island General Law 20-16-1. In Rhode Island, this state law allows a property owner to kill, by legal means, any furbearer (as defined in RIGL 20-16-1) that is killing or attempting to kill any livestock or domestic animals, destroying crops, creating a health hazard, or causing economic damage to their property. However, the law does not allow for the random taking of wildlife, for the taking of furbearers for their pelts outside the open season, or for killing of animals outside the boundaries of the property of the person with the problem. Also, it does not allow for unlawful methods of take such as poisons, snares, foothold traps, or discharge of firearms in violation of state or local ordinances. The law states that animals taken in such circumstances must be reported to the DEM within 24 hours.

Through regulation, the Division of Fish and Wildlife has established a “no closed season” for coyotes. They can be taken at any time of the year by legal means. The use of foothold traps, snares, or poison is prohibited. For complete rules and regulations regarding the hunting or taking of coyotes or other furbearers contact the Rhode Island DEM Division of Fish and Wildlife, Field Headquarters at 401-789-0281 or Division of Enforcement at 401-222-3070. Town and city ordinances may prohibit or further restrict hunting or discharge of firearms in residential and urban areas. Check with your police department for local laws.

Avoiding Problems

Eliminating food sources around the home will eliminate unnecessary interactions with coyotes as well as other wild animals. Coyote attacks on humans are actually very rare; researchers White and Gehrt (2009) found only 146 cases of coyotes biting humans in all of North America between 1960 and 2006 compared with the

approximated 4.5 million dog bites on humans that require medical attention each year in the United States (CDC, 2015).

Some things you should do to avoid or eliminate problems with coyotes:

- Do not leave garbage containers open or accessible to animals.
- Do not feed your pets outside. If you must, remove all uneaten food immediately.
- Never intentionally feed coyotes or other wild animals.
- Keep small pets, especially cats, indoors. A coyote will not make a distinction between your house cat and any other small mammal.
- Keep your pets' vaccinations and heartworm prevention up to date.
- Inform young children never to approach any wild animals.
- Protect vulnerable domestic fowl and livestock in enclosures, particularly during birthing season. Properly dispose of carcasses. Consult with the Division of Fish and Wildlife for ways to protect livestock from coyotes and other predators.
- Use loud noises such as whistles, air horns, shouting or whatever is available to discourage coyotes from taking shortcuts or frequenting backyards.
- Inform local or DEM officials of any contact between coyotes and pets or people.

Not all coyotes have bad habits or create problems. A coyote walking down the street during the early morning or walking along the back edge of your lawn next to the adjacent woodlot is not necessarily stalking you or your children. Coyotes have been part of Rhode Island's fauna for more than fifty years and are an important natural resource and component of the ecosystem. All indications are that they will continue to be part of our fauna for a long time to come. As proven in the West, campaigns to eradicate coyotes, though sometimes effective at lowering population levels for a short term, are expensive and have generally proven unsuccessful in the long term. The coyote's reproductive capacity and ability to disperse into new areas ensures that unoccupied habitats will not remain so for long.



Coyote in back yard in Greenville, R.I. Photo courtesy of A. Alexander

If you have questions regarding coyotes, are having problems with coyotes, or have any questions about wildlife, visit www.wildlifehelp.org, a collaborative online resource by government and non-profit wildlife agencies. You can also contact the RI DEM Division of Fish and Wildlife at the Great Swamp Field Headquarters by emailing DEM.DFW@dem.ri.gov or by calling 401-789-0281.

Selected References

Centers for Disease Control and Prevention [CDC]. 2015 May 18. Preventing Dog Bites. Retrieved From: <http://www.cdc.gov/features/dog-bite-prevention/>

Chapman, J. A., and G. Feldhamer. 1982. *Wild Mammals of North America, Biology, Management, and Economics*. The Johns Hopkins University Press, Baltimore and London. p. 1147.

Cronan, J. M. and A. Brooks. 1968 revised. *The Mammals of Rhode Island*. Wildlife Pamphlet No. 6 Rhode Island Department of Natural Resources, Division of Conservation. p. 133.

Parker, G. R. 1995. *Eastern Coyote, The Story of Its Success*. Nimbus Publishing, Halifax, Nova Scotia, Canada. p. 254.

Ray, J. C. 2000. *Mesocarnivores of Northeastern North America: Status and Conservation Issues*. WCS Working Papers 15: 84.

The Conservation Agency [TCA]. 2014. *Narragansett Bay Coyote Study*. Retrieved From: <http://theconservationagency.org/narragansett-bay-coyote-study/>

Trout, J. 2001. *Solving Coyote Problems, How to Outsmart North America's Most Persistent Predator*. The Lyons Press, Guilford, CT. p. 286.

Whitaker, J. O., Jr., W. Hamilton, Jr. 1998. *Mammals of the Eastern United States*. Cornell University Press, Ithaca and London. p. 583.

White, L. A. and S. Gehrt. 2009. *Coyote attacks on humans in the United States and Canada*. *Human Divisions of Wildlife*. 14: 419-432.

Coyote photographs courtesy of Maine Department of Inland Fisheries and Wildlife and the United States Fish and Wildlife Service.

It is the policy of the Department of Environmental Management to offer its services and accommodations to all orderly persons, and, as required, to all properly licensed persons, without regard to race, religion, color, national origin, ancestry, sex, age, or disability. If you believe you have been discriminated against in any program, activity, facility, or if you desire further information, please write to the Office for Equal Opportunity, US Department of the Interior, Office of the Secretary, Washington, DC 20240.