

The Coyote (*Canis latrans*) in Virginia

By: Jim Parkhurst, Virginia Tech

Originally native to western Canada, Mexico, and the central prairies and arid southwest of the U.S., the coyote (*Canis latrans*) has gradually expanded its range to include all U.S. states, except Hawaii, as well as much of Central America (Figure 1). This expansion coincided with, and likely was facilitated by, the human-enhanced demise of most other large predator species throughout this range. During the early 1900s, coyotes originating from the northern prairies moved north and east through southern Canada, where they encountered and interbred with gray wolves (*Canis lupus*), before heading into New England, the eastern Great Lakes region, and ultimately into the mid-Atlantic area (Figure 2). Similarly, coyotes originating from the southern plains moved east through the southeastern states, where they encountered and interbred with red wolves (*Canis rufus*). These two founding populations ultimately merged here in Virginia beginning in the 1950s. Coyotes were also brought to and released in Virginia (illegally) by hunt clubs and managers of commercial penned hunting operations. Today, coyotes have dispersed across all of Virginia and populate every county.

Although more commonly found in rural settings, seeing coyotes roaming the streets of suburban neighborhoods and even heavily urbanized cities (e.g., in Washington, D.C.'s Rock Creek Park) is not unusual today (Figure 3). A coyote's home range may extend over 8 to 16 square miles and will be largest in areas where food resources are less abundant or unreliable. Coyotes prefer to hunt in and travel through open woodlands, forest edges, meadows, and riparian draws or gullies. Small woodlots, pastures, fence rows, and other brushy or overgrown habitats in both rural and suburban areas provide excellent cover and foraging opportunities.

Coyotes have been hunted, trapped, and poisoned for more than 150 years in response to livestock depredations and to supply the fur trade with pelts. Yet, these programs have had little impact on overall coyote populations, due to the coyote's exceptional adaptability and resilience (as demonstrated by its successful range expansion). Although it is possible to

temporarily reduce coyote numbers within small areas for short periods of time, such exploitation often stimulates increased reproductive output among remaining individuals. Further, non-territorial individuals (called floaters) will disperse from surrounding areas and quickly recolonize depopulated areas.

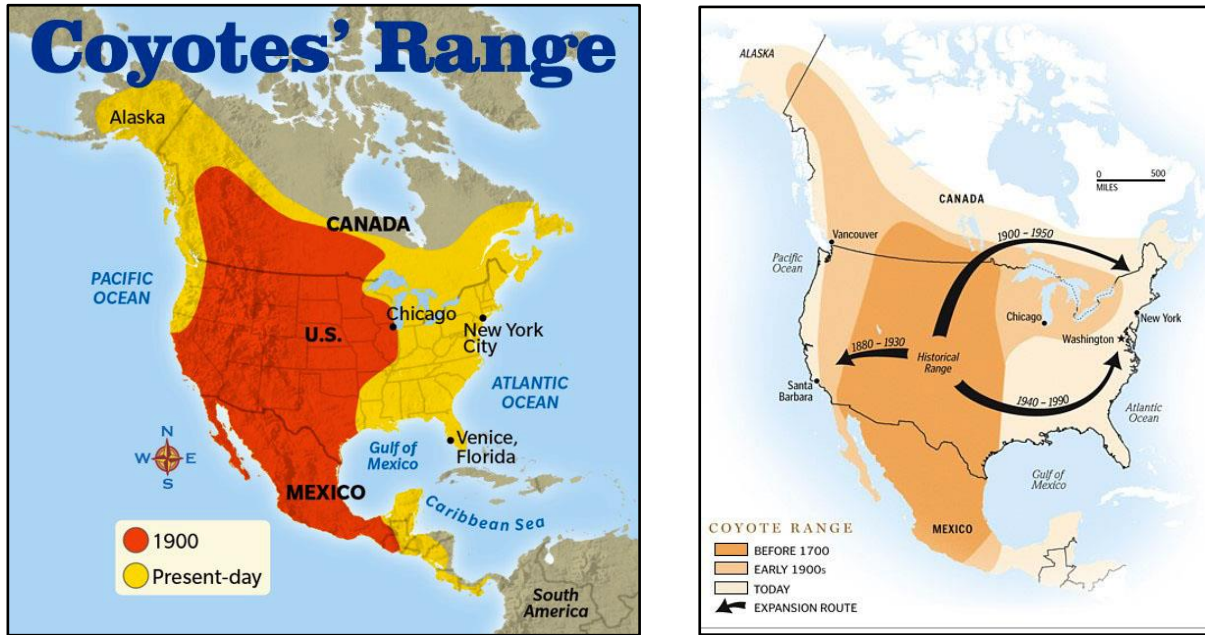


Figure 1 (left). Map of range expansion by coyote within North and Central America. Image from: <https://sn56.scholastic.com/content/dam/classroom-magazines/sn56/issues/2018-19/090318/coyotes-come-to-town/SN56090318-Coyotes-Popup-2.png>.

Figure 2 (right). Historical record of coyote dispersal during range expansion across the US. Image from: <https://urbancoyoteresearch.com/coyote-info/north-american-distribution>.

In appearance, coyotes are larger than a fox, being approximately the size of an adult collie dog (Figure 4). Adult females normally weigh between 18 and 35 pounds, whereas males are usually larger, weighing between 25 and 45 pounds. They have a noticeably pointed muzzle and erect pointed ears. Pelt color can be highly variable; the typical individual appears light tan overall, mixed with gray, brown, and black tones that give them a salt and pepper look. Although not common statewide, some individuals are silky black. The tail is 12 to 15 inches long, tipped with black, and carried at a downward slant. In the wild, coyotes rarely live longer than 6 to 8 years.



Figure 3. A coyote runs along an urban street.

Photo from: <https://www.MercuryNews.com>.

Coyotes maintain territorial family units that consist of a mated pair of adults, the current year's pups, and several offspring from a previous litter. Juvenile males disperse or are driven off by the adults after their first year. Although often considered nocturnal animals, coyotes actually are quite active throughout daylight hours, particularly during spring and early summer when gathering food to feed growing pups.

More often, we refer to coyotes as being crepuscular, where they are most active during early morning and at or just after dusk. Coyotes' eyesight, hearing, and sense of smell are all very well-developed. They communicate principally through scent marking and various vocalizations, for which they have earned the distinction of being one of the most vocal mammals in North America. Coyote vocalizations include short barks, ending in a high-pitched howl, and various whines, yelps, and growls.

Coyotes are omnivorous (eat both plant and animal matter) and their diet reflects whatever is most available and/or abundant at the time. Their diet typically consists of seasonal berries and fruits, grasses, and insects; rabbits, groundhogs, voles, and mice, as well as game birds (ruffed grouse, wild turkey, bobwhite quail) and ground-nesting non-Parkhurst. Virginia Forest Landowner Update. V. 35, No. 1. Winter 2021.

game birds are consumed when encountered. Coyotes are also scavengers; they frequently forage on gut piles left behind by hunters and on animal carcasses (e.g., deer shot, but not recovered; road-killed wildlife). Coyotes fill several important ecological roles, including as a predator of species commonly viewed as pests (e.g., mice, Norway and black rats, voles, moles, woodchucks) and the natural housekeeping function of removing carcasses, which affords certain aesthetic benefits and helps stem the spread of some diseases.



Figure 4. Image of the typical physical appearance of a coyote, this one observed in Fairfax, VA. Photo from: Virginia Department of Wildlife Resources.

Only a small proportion of the diet is comprised of deer directly killed by coyotes; where such predation occurs, it usually involves newborn fawns or sick or injured adults. Contrary to common myth, coyotes pose little threat to healthy deer populations throughout most of Virginia; however, where deer numbers are already low due to poor habitat quality (e.g., western highlands, southwestern coal counties), predation on fawns by coyotes, black bears, and bobcats may be sufficient to negatively impact population status or recovery.

Coyotes will prey on domestic animals, such as sheep, goats, small calves, and fowl left unprotected and vulnerable in pastures, and on companion animals (cats, small dogs) that are allowed to roam free, particularly in spring when demand for food for their pups is

highest. Here in Virginia, statewide coyote depredation on cattle (~200/year) and calves (~3,100/year) has remained relatively stable over the last decade. Depredation on sheep (250–450 deaths/year) and goats (100–175 deaths/year), though smaller in total number of mortalities compared to cattle and calves, is often more impactful to producers as the number of animals affected on an individual farm can be high (3–15 sheep/farm; 9–19 goats/farm) (NASS 2011).

Here in Virginia, the Department of Wildlife Resources (DWR) classifies the coyote as a “nuisance species.” Under this statutory classification, there is a continuous open season on the take of coyotes (except on National Forest and DWR-managed lands); otherwise, coyotes receive little protection and may be taken at any time and without limit, provided legal methods for take, as defined by the DWR, are used.

Despite the low incidence of safety issues experienced since their arrival here in Virginia, coyotes do pose potential threats to human and domestic animal health and safety. Like other native canids, coyotes vector the rabies virus. They also may be a reservoir of canine distemper in areas where this disease is endemic. Where coyotes have become habituated, they lose their fear of humans and can become emboldened, threatening, or aggressive; such behaviors likely arise where coyotes have been fed, potentially leading to someone being bitten by or involved in an aggressive interaction with a coyote.

Do’s and Don’ts of Dealing with Coyotes

For residential property owners:

- Precautionary measures should be taken before problems first occur; recognize that no single technique provides absolute protection. Coyotes are persistent and adaptable, so several management strategies may be necessary.
- Because coyotes fulfill important ecological roles, coexistence is encouraged; some landowners take pleasure in watching them on their property and appreciate the benefits received in terms of pest management. That said, do not allow coyotes to become comfortable residing close to homes as this can increase their habituation.

- Do not allow pets to roam freely outdoors. Avoid attracting coyotes by feeding pets inside or limiting the amount of food you place outside only to what can be consumed in a single feeding; leftover food will attract the animals coyotes prey on.
- Limit the amount of dense, brushy, or overgrown areas close to your residence as a means to reduce suitable cover for prey species and coyotes.

For agricultural producers:

- Use sound husbandry practices that reduce the potential for coyote depredations, including confining livestock or moving them close to farm activity centers during periods of greatest vulnerability (such as birthing); avoid using secluded pastures surrounded by forest, especially when turning out newborns; use lighted night paddocks near buildings or human activity.
- Remove and properly dispose of mortalities/carcasses from pastures immediately upon detection to prevent coyotes from developing an association between livestock facilities and carcasses as food sources.
- Consider using guard animals (dogs, llamas, donkeys) to monitor and protect livestock on remote pastures.
- Evaluate cost-effectiveness of using auditory and visual deterrents in providing temporary protection, especially when two or more methods are used in rotation to prevent habituation.
- Assess whether exclusion fencing to keep coyotes out of pastures might be cost-effective for the type of operation being conducted. High installation and maintenance costs or the presence of irregular topography often can make fencing impractical.
- Where husbandry and non-lethal approaches fail to resolve coyote problems, lethal control measures may be necessary. Trapping can be effective in removing particular offending animals. The Virginia Cooperative Coyote Damage Control Program (VCCDCP), administered through USDA-APHIS Wildlife Services, provides on-site technical assistance to participating producers and disseminates technical information on preventive strategies.

Final Upshot

The successful management of coyote problems demands that a variety of abatement measures must be evaluated and tailored to individual situations. The coyote is an exceptionally clever animal, and now a permanent resident throughout all of the commonwealth. People must recognize and appreciate that the coyote is here forever; eradication is not feasible nor attainable. Therefore, landowners must become better informed about its life history, the ecological roles it plays, and appropriate management strategies available to minimize the risk of damage.

Useful Information

National Agricultural Statistics Service:

https://www.nass.usda.gov/Publications/Ag_Statistics/2011/index.php.

Virginia Wildlife Conflict Helpline 855-571-9003 (toll free).

Virginia Cooperative Coyote Damage Control Program

US Department of Agriculture, Animal Plant Health Inspection Service, Wildlife Services,
540- 381-7387

https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/SA_Program_Overview/SA_Contact/ws-state-info?st=VA:Virginia.

Virginia Department of Wildlife Resources, 804-367-1000, <https://dwr.virginia.gov/>.

Jim Parkhurst is an Associate Professor and Extension Wildlife Specialist in the Department of Fish and Wildlife Conservation, 540-231-9283, jparkhur@vt.edu.