

Eastern coyote/coywolf life cycle in southeastern Massachusetts and some commonly asked questions

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Note: I prepared this document and conduct this research mostly on my own time and funding. Please consider donating or purchasing my books to support my research. Even \$5 will help! Thanks in advance.

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Introduction

I often receive questions about eastern coyote/coywolf ecology and behavior. Most of this is somehow related to a yearly cycle with certain events happening during specific times of the year. Therefore, in this short paper I attempt to answer some of these questions about eastern coyotes and do it in a year-long time-frame starting with January and going until the following December. I also ask and answer questions throughout the paper to give the reader a better perspective of a given life-history characteristic. **Note:** This paper was edited and revised June 2013.

Question: Why do you use the term coywolf throughout this paper (and on your website)?

Recent genetic research on eastern coyotes indicates that they are actually a hybrid between western coyotes (*Canis latrans*) and eastern/red wolves (*Canis lycaon*) and should perhaps more appropriately be called coywolves (*Canis latrans x C. lycaon*) since they are larger and genetically distinct from both western coyotes and eastern/red wolves. Therefore, I will hereafter refer to them as either eastern coyote or coywolf throughout this paper.

Mid-January to early February – Mated pairs mate, in the height of winter, during a short window of time when the female is in estrus.

Question: What is a pack?

A pack is generally the mated pair and one or two of their full-sized offspring that delay dispersal and help form a social unit or pack, similar to wolves in the wild. A typical pack in Massachusetts is 3 to 4 adults (including the full-sized pups or yearlings), with 5 to 6 not being unheard of. This pack raises a new litter of (on average) 5 pups each spring.

Question: When do offspring disperse from (or leave) their natal territory?

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Typically in their first winter (when about 9-10 months old), except for the ones which delay dispersal to stay with their parents (on average, 1 or 2 per pack).

Mid-March to early April - Females give birth following a 60-66 gestation period. This reported time is documented by my field research which documents earlier births than which state wildlife agencies acknowledge (usually they say April-May). On Cape Cod, I have not documented any births after mid-April. May births occur in colder, more northern climates like Maine.

Question: How many pups does a female give birth to?

On average 5, but this can range from 2 to 12.

Question: What does a den look like?

A den is often inconspicuous. They are hidden in the woods and typically hard to find. Usually they are dug into roots or under trees – occasionally in and around human structures (such as decks, sheds). There is often no debris around an active den. Dens are basketball sized holes which can go 5 to 30 feet into the ground potentially forming large underground chambers. Dens usually have a mound of fresh dirt at the mouth of the entrance.

Question: Do adults bring back prey to dens?

I have heard reports of dens surrounded by cat collars, cat remains, or deer fawns. However, all dens I have examined (over 20) have been devoid of prey. I believe this is an old wives tale to perpetuate the myth that coyotes/coywolves wipe out their prey supply, or at the least are having an undesirable affect on our local wildlife and pets. Adults regularly clean dens by doing things like eating pup feces and regurgitating most food delivered to the pups during this time.

Late-April to May – Pups are weaning from their mother's milk and the rest of the pack is now feeding them regurgitated meat. In the winter, mated pairs are inseparable but in the spring/summer they are barely together, often taking turns hunting or watching the pups. The helpers (or betas) in a pack also assist with pup rearing. Pups begin leaving the den and exploring surrounding areas - usually in the forest, even for animals that live in urbanized areas.

Question: I live in an urban area and don't understand why coyotes live near me. Shouldn't they be out in more rural areas?

Coyotes (when combining western and eastern) live throughout the country and in all sorts of habitats ranging from rural/wilderness to highly urban including most major cities. A common misconception by many is that they should not live near me because I live in a developed area. However, urban areas can actually be better habitats for coyotes and much of their prey like rabbits and deer. We provide lots of food, both natural and human caused, as

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well as plenty of cover. The paradox is that while coyotes thrive in human dominated areas they often take advantage of the natural cover that we provide them to be “ghosts of the suburbs or cities”. Additionally, because coyotes are territorial it should be recognized that any given area (state, city, etc.) is potential coyote habitat and if coyotes do not already live in a given area it is only a matter of time as the goal of most young dispersers is to find new habitat where other coyotes do not live. That will allow them to claim a territory and raise a family. Abundant food and cover and claiming vacant territory are factors why coyotes have spread throughout North America.

June – July – Pups are now weaned and eating solid food. They move to rendezvous sites which are above ground den sites (puppy training centers) that typically have thick brushy areas where they can hide. Water is usually nearby and there are often open areas where the pups can hunt (beginning with grasshoppers and crickets then moving to mice). These open areas also provide a vantage point where the adults can scan for danger.

Question: What are some typical rendezvous sites?

Cranberry bogs, golf courses, swamps, old fields, and agricultural fields surrounded by woods. These areas all usually have open areas to hunt and nearby thick brush areas to hide in.

Question: It is the fall/winter and I found a coyote den, but why aren't I seeing any coyotes?

Coyotes only use dens for the first 8-10 weeks of life. After that, even young pups generally sleep in the woods – even on nasty, rainy days. What you are seeing may or may not have been a coyote den, but there is little chance that it would be actively used by coyotes beyond June of a given year.

Question: Why do I hear all of that howling during mid to late summer?

Because they are communicating with each other. Pups and adults are often separated, especially as the pups mature, so howling reunites them. Imagine a typical pack of 3 to 4 adults and 5 pups of the year. It can sound like an army is around you, but it is a normal progression for a pack. In addition, all of that howling also serves as a territorial guarding mechanism, effectively keeping non-pack members out of their domain.

Question: Why do coyotes sometimes follow my dog during this time of year whereas during most of the year they rarely bother me during my walks?

First of all, I will assume that you leash your dogs to prevent unneeded interactions from occurring in the first place, like your dog chasing after a pack and getting attacked as a result. The reason why you often see coyotes appearing to act bold or maybe even aggressive is because you are likely in a rendezvous site. Possibly you don't know it but if you are in one of these areas, the adults (especially the parents) often follow dogs, sometimes even on a leash, as they see the dog as a potential threat to their pups whom are likely hiding nearby in

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the woods. The vast majority of people that I have talked with that have experienced this claim that the coyote will follow the person and the dog for a certain distance and then, strangely, simply turn around and walk off. It is sort of like an escort service to get the dog (with the associated person) to leave the general area. You can probably see why dogs that are leashed have much less of a chance of getting attacked than do unleashed, free-roaming dogs. It is worth noting that I have seen smaller western coyotes (in Yellowstone National Park) harassing wolves and even grizzly bears near their pups.

August – September – Pups are maturing into mini-adolescents and are learning how to hunt, starting with insects and moving to small rodents. Also, adults are continuing to bring back food and either regurgitate it to the pups or bring back whole prey items like rabbits. Packs may have multiple rendezvous sites in their territory and now often travel between them.

Question: You talked about dogs, but what about my pet cat. Are they safe from eastern coyotes?

As discussed above, dogs are viewed mostly as competition. This is verified through the unfortunate fatal encounters where coyotes kill a dog. Generally it is not eaten and left where killed, similar to how wolves will kill coyotes or coyotes will kill foxes and not eat them. Canids generally don't like other canids, except for their pack-mates. However, cats are a different story. They are certainly viewed as a fawn or woodchuck-sized food source by coyotes and will kill them where available. It is important to keep in mind that cats are often outside doing the same thing that wild carnivores are doing, which is hunting and killing prey. The best thing for the environment and your cat(s) is to make it an indoor cat. It will live longer and will kill less (or no) small animals like song birds. If it must go outside, however, try and do so during the day time (when coyotes are least active) as this will reduce (but not eliminate) dangers to your cat. Do not let it out at dawn when it is light out but still early as coyotes are sometimes active then, especially in the summer time.

October – December – Pups are about two-thirds size in early fall (6 months of age) and then approach full-size by Christmas. Pups undergo a tremendous change during the fall. They are now mostly foraging independently or in small groups with some still at rendezvous sites and others traveling with their parents. Parents are spending less time at rendezvous sites and more time nomadically patrolling their territories. Some pups begin the process of dispersal during this time while others stick around to help form a pack. The coywolf life cycle continues into the next breeding season.

Question: How far do coyotes/coywolves travel?

Short answer: a lot! Adults typically move over 10 miles a night throughout their territory. Juveniles move less when tied to rendezvous sites but when dispersing, they can travel similar daily distances as adults and can potentially go far from where they were born.

Question: How far can a coyote disperse?

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Dispersal distances of over 400 miles have been documented, so that means that a youngster born on Cape Cod, MA (where I live) can show up anywhere else on Cape Cod, or better yet can cross the canal (by either swimming or crossing the bridge) and move off-Cape. Youngsters born in the Northeast can easily travel to a different state assuming it survives that long and isn't killed by a car or gun.

Question: What is a territory?

A territory is an area that is guarded by a pack of eastern coyotes/coywives. On Cape Cod, they are typically 6-10 square miles in size. These are generally exclusive of other packs with occasional transients (dispersers) moving in and out of these areas. Other territories border a given territory much like interconnected honeycombs.

Question: How many coyotes/coywives are there in Massachusetts?

Population estimates are difficult to accurately estimate but they are generally made during the lowest point in a species yearly cycle which for eastern coyotes would be in early March before the new pups are born. This would account for pup losses during the summer, hunting kill, and most vehicle accidents since yearling and adult animals become more adept at crossing roads as they age. Using simple math of the number of coywives per pack and territory size, it is safe to estimate that there is less than one per square mile. Therefore, I would estimate 3,000 to 5,000 eastern coyotes in Massachusetts. I believe that Mass Wildlife's official estimate of 10,000 is way too high and would only be possible if they included pups of the year, which is likely still too high of an estimate. To put it a different way, no study in the Northeast has documented over one "coyote" per square mile and because the eastern coyote or coywife is a hybrid with wolves it would be problematic to use density estimates from other areas of the country and equate those to "coyote" density estimates in the Northeast. By the way, 5,000 would be a high density of eastern coyotes in an area the size of Massachusetts. Similarly, 300 on all of Cape Cod would be a very high (probably maximum) estimate excluding pups of the year. I would guess 200-250 on Cape Cod at the end of the winter, accounting for hunter and other kill.

Conclusion

This paper attempted to answer some commonly asked questions about eastern coyote/coywife natural history in Massachusetts. I followed a calendar year and described major events in an eastern coyote's annual life cycle and addressed some commonly asked questions. Many of the answers here are supported by peer reviewed science, much of which I have personally published. Instead of muddying this paper by including citations, I simply refer the reader to the Publications Page of my website for further information on many of the topics discussed herein: <http://www.easterncoyotersearch.com/PublicationsPage>.