

# The Infinite Spider

A Science and Nature Blog for Naturalists and Educators

## Coywolf: A Modern Species

Infinite Spider • December 23, 2014

### Coywolf: A New Species of Canid Emerging



[\[https://infinitespider.com/wp-content/uploads/2014/12/coywolf-wiki.png\]](https://infinitespider.com/wp-content/uploads/2014/12/coywolf-wiki.png)

*Coywolves bred in captivity (Photo: Wiki commons). These hybrids are examples of interbreeding, but differ from the ones found in the eastern third of North America.*

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brightest creature on Earth and many native myths have the coyote featured as a trickster and schemer. Coyotes are the only species of wild canine in the US that do not have an specific hunting season, and so they are hunted year round as a pest and trouble maker. Despite all this, they are clever animals, capable of surviving in extreme conditions, adapting to the presence of humans, modifying their litter rates, and eating just about anything they can get a hold of. They are so good at surviving that they don't need protection or help. Coyotes are masters at adaptation and now they are adapting again.

There are two distinct populations of coyotes in North America, Eastern and Western. They are physically very similar when you just look at their external traits (ears, nose, tail, etc). There is some variation in body size based on longitude, between males and females, with males being slightly larger in. Interestingly, [the higher the latitude the larger the coyotes tend to be](https://www.bioone.org/doi/abs/10.1656/1092-6194(2007)14%5B111:ACOBMO%5D2.0.CO%3B2) [\[https://www.bioone.org/doi/abs/10.1656/1092-6194\(2007\)14%5B111:ACOBMO%5D2.0.CO%3B2\]](https://www.bioone.org/doi/abs/10.1656/1092-6194(2007)14%5B111:ACOBMO%5D2.0.CO%3B2) . Male coyotes in the northeastern US tend to be the largest (16.4 kg  $\pm$  1.5 kg, about 36 lbs), but male and female coyotes in the northeast US are both larger than their western counterparts.



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eastern wolves (*Canis lycaon*). So what's the deal? It's thought to be because eastern wolves are more closely related to western coyotes than western wolves (*Canis lupus*).

Confused yet? It is confusing, but it all boils down to this: eastern coyotes and eastern wolves (which are genetically coyote-like) are interbreeding to create a species of canid, which is being called the coywolf. Some have called it the "eastern coyote," but coywolves are genetically distinct from coyotes, with gene combinations of wolves and coyotes, so the name "coyote" doesn't really fit. Currently the range of coywolves is in Minnesota, Ontario, Quebec, and possibly New York and Washington DC.

Lehman et. al discovered that wolves can possess coyote-derived physical and genetic characteristics, but not the other way around [<https://www.jstor.org/discover/2409486?sid=21104908465801&uid=2134&uid=3&uid=2&uid=386560761&uid=3739256&uid=60&uid=70&uid=386560751>]. Coywolf hybridization has occurred because of male eastern wolves finding female eastern coyotes and interbreeding. The female passes on her mtDNA (maternal DNA) combined with the male's DNA.

In the Great Lakes regions the genetic soup gets even more interesting. There eastern timber wolves have bred with another grey wolf sub-species (*Canis lupus nubilus*), which means that the eastern coyotes that breed in those regions have grey wolf mixed with eastern timber wolves and mid-western coyote all together. It's quite a mix, and hard to keep straight.

Now you might think that all this hybridization of wolves and coyotes is a recent thing, but it is thought to have been taking place for many years, possibly the last 70-100 years. Coywolves and coyotes are sly, and secretive, but as they are encountering humans more and more we're beginning to notice them. Remember, coywolves are not invasive species, coming in from another country. They are native to North America and are American born and bred.

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**Compare the pictures above: TOP is a coyote, MIDDLE is a captive bred coywolf , and BOTTOM is an eastern grey wolf (Photos: Wiki commons).**

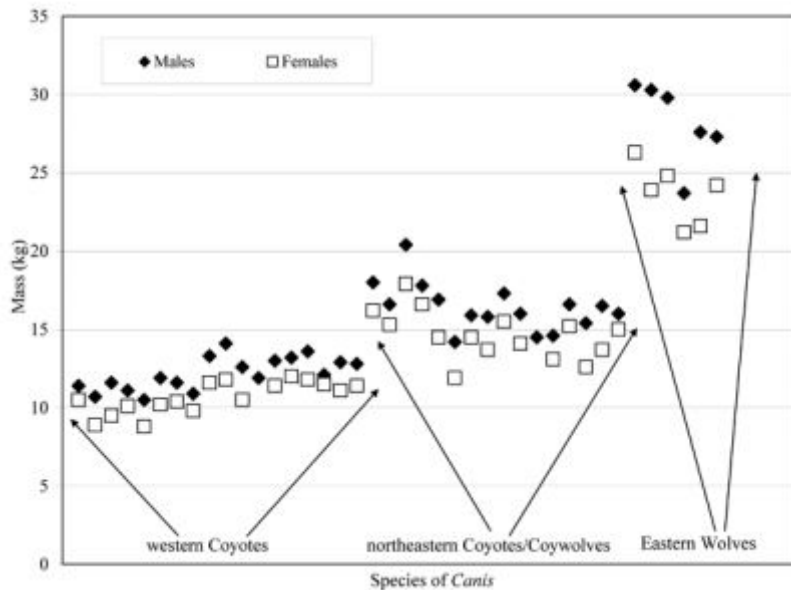
So how are coyotes, coywolves, and eastern wolves the same (but different)? Genetically Northeastern coyotes are mostly western coyote (about 65% western coyote and 17% western wolf) while northeastern wolves are mostly wolf (about 23% western coyote and 50% western wolf). When these two species hybridize the result is close to 60%+ coyote and about 27% wolf (give or take) with a smattering of dog genes (10% or so).

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[<https://www.easterncoyoterresearch.com/downloads/CoywolfTaxonomy&BodyMassCFN2013.pdf>]

From the paper by Jonathan Way and the Canadian Field-Naturalist journal Vo. 127. no1.

Size is one of the most apparent differences between western coyotes, eastern wolves, and eastern coyotes/coywolves. In a study from the [Canadian Field Naturalist Journal](https://www.easterncoyoterresearch.com/downloads/CoywolfTaxonomy&BodyMassCFN2013.pdf) [<https://www.easterncoyoterresearch.com/downloads/CoywolfTaxonomy&BodyMassCFN2013.pdf>] researchers found that the average mass of male western coyotes was 12.2 kg or 28 lbs, while eastern wolves was about 28.2kg or 62 lbs. Coywolves and eastern coyotes were between these two weights, around 16.5 kg or 36 lbs. [Interestingly, the size of northeastern coyotes is thought to be close to the mass of Ice Age coyotes during the Pleistocene era](https://www.pnas.org/content/109/11/4191.long) [<https://www.pnas.org/content/109/11/4191.long>] , but that's a story for another time. (Click the link above to read the scientific paper about this theory.)

When you compare coywolves, eastern wolves, and coyotes side by side you can see some major differences. Coywolves appear to be a combination of wolf and coyote features, appearing larger and more wolf like than their coyote relatives. Their heads are wider and and larger, with larger jaw muscles and foreheads than coyotes, but smaller than wolves.

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*Coy wolf photos from Jonathan Way and the Canadian Field-Naturalist Journal.*

Coywolves are an evolving species of canid that is rapidly adapting to human urbanization. They are expanding their range from the forests into the urban jungles, and increasingly coming into contact with people. This contact isn't what you would think. They aren't eating cats and chasing joggers. They are quietly eating rats, squirrels, rabbits, and mice. They are even thought to play a role in maintaining Canada goose populations, like their wild wolf and coyote counterparts. There is some speculation that because of their size, which they get from their wolf relatives, that they may also play a role as an apex predator, controlling the population of white tailed deer in both rural and urban areas.

Coywolves have been shown to be smart too. Through GPS tracking scientists have learned that they can use human made corridors to travel, especially railroad tracks, highway medians, and urban margins. They can also den in marginal habitat areas where there may be little green space as long as there is enough food, they'll manage. Their life spans are unknown, but it is thought that they can live up to 10 years and maybe a bit more in these urban environments.

[Here in DC, coywolves have reportedly been spotted, though yet to be confirmed, in Rock Creek Park, as recently as July of 2014](#)

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new to the scene of evolution and speciation. One can only wonder where their populations are headed, and how they will change in relation to the human world.

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