

Origins of the Eastern Coyote

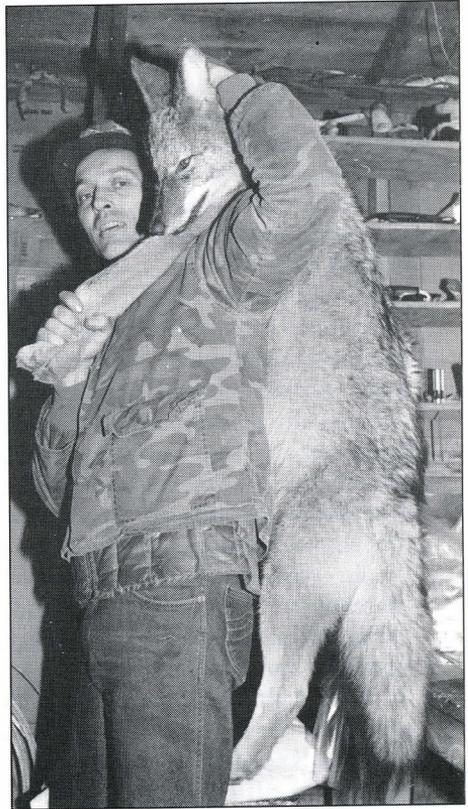
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ALARGE WILDCANID has been lurking in the shadows of Pennsylvania for the better part of this century. It's bigger than a fox, smaller than a wolf, and its population has mushroomed in the past 25 years. Today this animal inhabits all but one of our 67 counties.

To many Pennsylvanians, the eastern coyote is no stranger. And each year more people are learning of its presence through personal encounters or news reports. At one time or another, the animal has received front-page coverage in probably every one of the state's newspapers and made the six o'clock news on every television station. The coyote is also the subject of discussions by hunters, farmers and others who feel the animal is costing them something.

But for all the attention it gets, for all the commotion it causes, most of us know little about eastern coyotes. It's one of the most mysterious and misunderstood members of our wildlife community because it isn't as plentiful as other furbearers such as raccoons and red foxes, and is secretive and highly individualistic.

Currently, Pennsylvania's coyote population — an estimated 20,000 animals — appears to have peaked, according to retired Game Commission biologist Arnie Hayden, who spent about eight years studying the animal. His observation is corroborated by agency Game-Take Survey data.



After several years of marked increases, the coyote harvest increased only one percent — up 79 animals to 6,240 — from 1993 to 1994, despite a 44 percent increase in the number of coyote hunters and trappers over the same period. Coyote populations in Maine and New York also peaked after rapid build-ups, according to Hayden.

Speculation about coyotes is endless. There are debates on the coyote's diet, habitat preferences and social habits, not to mention the size of its home range and the meaning of its vocalizations. But none of these discussions seem to garner as much attention as the one fundamental question that no one has or probably ever will

definitively answer: Where did our coyotes come from?

There are several theories on how coyotes came to inhabit Pennsylvania. Some are thought provoking and highly creditable. Others, such as the Game Commission stocking coyotes to reduce deer numbers, are ridiculous. All plausible theories fall into one of three categories: coyotes were always here; coyotes expanded their range into Pennsylvania from the north or west, or both; and coyotes kept as pets escaped.

By the late 1890s, according to most historical records, wolves — or whatever wolf-like canids inhabiting Pennsylvania's countryside — no longer existed. They'd been wiped out as a result of 200 years of bounties, an ever-popular attitude to shoot them on sight, and widespread habitat deterioration when our virgin forests were timbered off. But during this period, an occasional "wolf" or two was presented for bounty.

In 1897, three wolf pelts were submitted in Tioga County for \$30 in bounties. The man making the claim signed an affidavit at the local magistrate's office stating he killed them in the county, which he did. But what the affidavit didn't say, and investigators later found out, was that he bought the "prairie wolves" for a \$1.50 from a traveling circus headquartered in Canton.

New York also has a few published accounts of large canids occasionally being taken during this period. In the Annual Reports of the Forest, Fish and Game Commissioners for the years 1904 through 1906, there is a report about a man who shot a "gray timber wolf" on November 2, 1906, near Port Byron. "His dog scented, chased and brought the animal to bay, and he killed it with a shot from a .32-caliber revolver," the report stated. "The speci-

men measured five feet from tip to tip."

Other claims and reports of wolves being killed were made during this turn-of-the-century period, but they're often viewed with skepticism because the sources were unreliable, the claims seem unrealistic, or the person identifying the animal was unqualified. Wolves — or whatever roamed the state prior to colonization and into the late 1800s — were either reduced to a handful of animals or gone.

Pennsylvania should have had wolves because it's located between areas that did have them: Canada, which has timber wolves, and the southeastern United States, which had red wolves (declared extinct in the wild in 1979). To date, however, not one specimen of a wolf — skull, skeleton, pelt — has been found in Pennsylvania. That lack of evidence brings forth the question: Could what our forefathers called wolves actually have been coyotes?

Why wolf remains were not saved for posterity, or in the name of science, is unclear. After all, heads were collected from a majority of the wolves killed in Pennsylvania because that's what was most often submitted to obtain a bounty. If the animal wasn't cashed in, the pelt was often kept because it was the most useful part of the animal and a lasting record of it. The rest of the wolf was left for nature to consume.

Pennsylvania's earliest wolf bounties — late 1600s — required persons to submit the head for bounty; the local justice would then cut off the ears and tongue. Later laws — late 1700s and early 1800s — directed local magistrates to destroy the heads of wolves submitted for bounty to avoid duplicity, a widespread problem in the bounty business. With time, bounty laws changed again, this time requiring wolf scalps to be submitted. They, too, were destroyed. New York operated its bounty programs much the same way.

What's unfortunate about the way Pennsylvania and New York handled their bounty programs is that they destroyed

most of — if not all — the evidence we need to ascertain what large canid once roamed this two-state region.

The first scientifically-validated case of a wolf-like wild canid being taken in Pennsylvania occurred in 1907 when W. E. Clyde Todd, a prominent early-20th century ornithologist, was dispatched by Carnegie Museum to investigate a “wolf” killed by a farmer at Flowing Spring, Blair County. He returned with a coyote, which some identified as a western coyote. Other unsubstantiated reports of wolf kills followed in subsequent years.

The first wildlife official to record a wolf report in the Game Commission’s history was Joseph Kalbfus, the agency’s first executive secretary. In his 1915 Annual Report he wrote about inspecting the pelt of a “wolf” killed in Clinton County. “The skin was undoubtedly the skin of a wolf; the hair is woolly and somewhat softer than the hair of a timber wolf of the West, otherwise it greatly resembles the timber wolf,” Kalbfus noted. After being prepared by the state taxidermist, the mount was to be given to the State Museum in Harrisburg. For whatever reason — deterioration, storage problems, wasn’t forwarded — the museum doesn’t have the pelt.

Ben Tullar Jr., who was a furbearer biologist for 35 years with the New York State Department of Environmental Con-

servation, said in a recent telephone interview that he believes eastern coyotes are what our forefathers called wolves. He doesn’t think coyotes expanded into or migrated to our region. “Coyotes have always been here,” he said. “These are our wolves.”

It makes perfectly good sense for the coyote to always have been a part of the Pennsylvania/New York region’s animal community, according to Tullar. “That they’re native is the simplest explanation for what we find. It requires no convoluted, improbable hypothesis.”

Tullar believes coyotes remained in our region at the close of the 19th century — when the so-called wolves disappeared. He suspects remnant populations held on in remote areas of New York’s Adirondack Mountains and possibly isolated areas of Pennsylvania’s northern tier, places that were spared from the widespread deforestation occurring at the time. As forest habitat improved and prey species increased, so did the number of coyotes, according to Tullar.

Arnie Hayden said he believes the coyote is native to the northeastern United States, but that it was eradicated in the 1800s and then somehow reclaimed its former range. He doubts the animal underwent significant genetic changes or made a long migratory haul from the midwestern United States in recent times. “Coyotes have been here much longer than we think,” Hayden said. “We just didn’t pay much attention to them.”

Based on photographic evidence and news reports about coyotes, which began appearing steadily in the late 1930s and early ’40s, Hayden suspects

TWENTY-TWO POUND juvenile coyote trapped in Benzinger Township, Elk County in 1965. It is thought coyotes were firmly established in the commonwealth by the 1960s.



coyotes were firmly established in Pennsylvania by the 1960s, predominantly in the northeastern counties, but also in pockets throughout the state. Then, for some inexplicable reason — Hayden suspects a beneficial habitat change — the population in the 1970s increased and dramatically expanded its range, not just in Pennsylvania but throughout the eastern United States. Coyotes were moving into new areas of Pennsylvania and states such as Delaware, Rhode Island and Maryland, places where there had been no record of large wild canids for a long, long time.

Hayden and Tullar both believe the coyotes sparking this invasion of the Mid-Atlantic came from somewhere in the Northeast, probably the Adirondacks. Tullar is fairly confident coyotes always inhabited those mountains. Hayden isn't, but he believes the mountains may have served as an area where coyotes gained a foothold in the region and then expanded into new areas. Whether those coyotes were always there, or came from somewhere else such as Canada or Maine, Hayden isn't sure.

There is also the possibility that our coyotes are offspring of pets or captive animals that escaped or were released by their owners. Cases of coyotes or "wolves" escaping their owners have been documented since the 1930s.

In 1934, *Game News* offered information that supported both theories of origin. In one article the magazine reported, "The situation created by the appearance of wolves in the Adirondack section of New York has

reached a crisis in the opinion of Conservation Commissioner Lithgow and the New Year will see the inauguration of a war on wolves" Another article (and newspaper accounts) provided details on the capture of several members of an escaped pack of coyotes responsible for killing more

than 100 sheep in Washington County. Two were never caught. That same year, according to research performed by Helen McGinnis, who studied Pennsylvania coyotes extensively in the 1970s, "a pair of coyotes escaped from a tourist camp" in Bradford County, near Camptown.

"The only thing that stands in the way of that theory is where did the wolf genes that coyotes possess come from," Hayden questioned.

Robert Wayne of the University of California and Niles Lehman of The Scripps Research Institute in California have shown through DNA analysis that eastern coyotes and eastern gray wolves have interbred and that eastern coyotes have wolf genes. But when they interbred is still unclear, although many researchers believe it occurred around the turn-of-the-century or early 1900s.

Wayne/Lehman have also documented wolf genes in coyotes in the southcentral United States. When this happened and what it means is unclear. But this southcentral part of the country has historically been western coyote range.

Wayne/Lehman's work also showed eastern coyotes rarely possessed morphological characteristics common to domestic dogs, which indicates, as other studies do, that coyotes would have difficulty breeding with dogs in the wild. The occurrence of "coydogs" apparently was not as common

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here as early Pennsylvania coyote researchers thought. What was here all along appears to have been mostly coyotes. A point reinforced by McGinnis's research.

Dr. Robert Chambers, a retired Syracuse University professor who has studied coyotes since 1969, believes eastern coyotes got here through range expansion and that they are the product of wolf-coyote interbreeding. And, he pointed out that most canid biologists support that belief.

Chambers said he doesn't know when coyotes began mating with wolves. "Coyotes may have been here before wolves were extirpated," he suggested. More than likely, though, the coyotes came later, and not until after they had bred with wolves in Canada.

Chambers said that from the 1880s to 1920s there was no constant presence of large canids in New York, which suggests that if there were native coyotes, they had been eliminated. "Why should we believe that we were able to eliminate coyotes in the East?" queried Chambers, who noted that after tremendous effort and expense man hasn't been able to do the same thing in the West.

Chambers is convinced that 19th century taxonomists would have been able to differentiate wolves from coyotes. They had both been distinctly identified by zoologists by the early 1830s. Yet one can't help but wonder how these wildlife experts might have made their identifications: visual inspection, measurements, bone structure analysis?

In 1948, well after the coyote invasion began in the Northeast, J. Kenneth Doutt, curator of Carnegie Museum's Department of Mammology, and a man who was asked to identify many coyotes for the Game Commission, said that "most of the coyotes turning up in Pennsylvania are pets that are released. People visiting in the West

bring home a cute coyote puppy. When it grows up it is no longer cute. In fact, it may become mean. They turn it loose, or it escapes and becomes feral. Those are the ones hunters kill."

Doutt typically made his canid identifications through skull analysis. He would compare an unknown canid skull to a series of coyote and dog skulls, then develop a conclusion. In a 1966 analysis, he reported to the agency, "Although very definitely coyote-like, [this skull] has certain characteristics which are dog-like. I would say this animal has some dog in it."

Considering these words from a leading wildlife expert, you can't help but wonder whether anyone could positively identify an eastern coyote from a western coyote, or small wolf from a coyote at the turn-of-the-century, or anytime prior to the 1960s.

The migration/range expansion theory has coyotes pushing into Pennsylvania sometime during the 1930s. The big difference between this theory and the one concerning native coyotes rests mostly with where the first animals originated. One suggests they were always here, the other theory, that they came from Canada. These theories are further complicated by the possibility of escaped wolves or coyotes either contributing to the resurgence of large canids in this region or influencing the new canid's genetic composition.

One thing seems certain about coyotes: they have adapted to our state and appear to be here for the duration. "We do not control the coyote, the species controls its own destiny," Hayden said. "We stand in its way at times, but it keeps coming. We must learn to live with this species." □