



When

Past and Present Accounts
of How Wolves Came
To Be in North America

Wolves Moved In

By Jim Heffelfinger

RED WOLF AT THE ALLIGATOR RIVER
NATIONAL WILDLIFE REFUGE
IN NORTH CAROLINA, USFWS

Few animals have figured so prominently in human history as the wolf. It has been admired and hated, and eliminated from areas of the United States and then recovered. It is perhaps one of the human race's oldest love-hate relationships. With wolves, more than any species, it is important to understand the past if humans are to successfully coexist with wolves in the future.

PAST

Wolves and coyotes have an incredibly complex history starting with the appearance of a medium-sized primitive dog about 2 million years ago at the beginning of the Pleistocene Epoch. This early member of the dog family was distributed across North America and Eurasia and most likely served as the common ancestor of all wolves and coyotes.

Recent genetic analyses provide interesting clues about the evolutionary development of coyotes and wolves. The evidence assembled thus far points to two separate branches developing, one in North America and the other in Eurasia. The North American branch gave rise to coyotes (*Canis latrans*), the small eastern wolf (*Canis lycaon*) in the northeast, and the smaller red wolf (*Canis rufus*) in the southeastern United States. The other branch in Eurasia developed into the larger gray wolf (*Canis lupus*). There has been decades of disagreement about the classification of the eastern and red wolf; hopefully future work will further clarify these relationships.

The Eurasian gray wolf invaded North America in a series of at least three separate waves as the corridor across the Bering Strait allowed for a connection between the



COYOTE BY BRUCE D. TAUBERT

two continents. The first wave of wolves moved into North America sometime before 500,000 years ago and settled in the mountainous areas of central Mexico. All of the wolves in the first wave were not the Mexican wolf subspecies as we now recognize it, but it is from this early immigration event that the Mexican wolf later developed. Later climate change partially isolated wolves in the Sierra Madre Mountains in Mexico where they became physically smaller and specialized as predators of Coues' white-tailed deer.

A second wave of Pleistocene wolf immigrants entered from Eurasia through the Bering Strait and mingled with those wolves already occupying the continent. Because of the separation of tens or hundreds of thousands of years, this second group of wolves was genetically different and identifiable from the first wave. These wolves eventually gave rise to the wolves that occupied a large geographic area across what is now southern Canada and the northern United States. Unfortunately, those in the United States resided squarely in the path of 19th and 20th century settlers and suffered almost complete eradication, remaining only in the Great Lakes region and perhaps the Pacific Northwest.

About 10,000 years ago, a third wave of wolves entered from Eurasia and came to occupy what is now Alaska, western Canada and eventually the northern Rocky Mountain states.

PRESENT

The wolf (*Canis lupus*) once had the largest distribution of any land mammal in the world. Although its range has been greatly reduced, wolves still occur in at least 46 countries worldwide. Outside of North America, there are at least 110,000 wolves living in wild populations with nearly all listed as stable or increasing due to improved conservation efforts. Only in India, China and a couple of European countries are they thought to be decreasing in number. Wolf num-

bers are stable or increasing in North America as well. Canada and Alaska are home to 58,000 to 67,000 wolves, and the contiguous United States has recovered the gray wolf in the northern Rocky Mountains (more than 1,600 wolves) and western Great Lakes region (more than 3,600 wolves). The Mexican wolf in the southwest and the red wolf in the southeast are still involved in the recovery process with 83 and 100 wolves, respectively.

NORTHERN GRAY WOLF

The last wave of wolf immigration from Eurasia occupied Alaska, western Canada and, by the 1970s, began to increase and expand into the northern Rockies. To facilitate the recovery of the gray wolf and removal from the endangered species list, wolves were captured in Canada in the mid-1990s and released into central Idaho (35 animals) and Yellowstone National Park (31 animals). These new populations grew rapidly. By 2002, the population reached 250 in Yellowstone and 260 in Idaho, with 59 wolves killed for repeated livestock depredations. The recovery goal for the northern gray wolf was set at three populations of 150 wolves each. By the time they were completely delisted from the endangered species list in 2012 they had far exceeded that goal with approximately 1,774 wolves living in the wild in three genetically connected populations. The northern gray wolf in the United States is no longer in danger of extinction. These populations are now managed by the state wildlife agencies along with other native wildlife species that have been recovered from low population levels. Limited and regulated hunting seasons are offered for these wolves that maintain their population far in excess of recovery goals.

WESTERN GREAT LAKES

Minnesota held the only wild wolf population in the lower 48 states when the Endangered Species Act protected wolves in 1974. This population of 1,000



wolves expanded and grew to more than 3,600 wolves in Wisconsin, Minnesota and Michigan by 2011. At that time, they had exceeded the recovery goals for more than five years and were no longer in danger of extinction. Wolves in this region were removed from the endangered species list in 2011 and are now managed by state wildlife agencies. Wolf hunting is allowed in all three states with harvests being limited to about 10 percent of the population annually in order to maintain population objectives in those states.

MEXICAN WOLF

The wolf population in the Sierra Madres has been isolated from other wolves on all sides except to the north where it crossed desert areas and hybridized with northern wolves in central Arizona and New Mexico. In the mountains of Mexico, this smaller wolf subspecies (*Canis lupus baileyi*) evolved to specialize in Coues' white-tailed deer prey and is perhaps the best example of a wolf



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MEXICAN WOLF BY GEORGE ANDREJKO

subspecies that is genetically, physically and ecologically identifiable. A captive breeding program has grown the population to nearly 260 wolves in captivity with about 83 in the wilds of Arizona and New Mexico.

RED WOLF

The origin of the red wolf (*Canis rufus*) has been surrounded by confusion and contention for decades. The most recent thinking is that red wolves and coyotes evolved together in North America from a common ancestor they both share with

the gray wolf that evolved in Eurasia. The red wolf was listed as endangered in 1967. Recovery efforts immediately found that free-ranging red wolves were rare (perhaps nonexistent), and the similar coyote was abundant throughout the red wolf's historical range in the southeastern United States. Animals with the strongest red wolf characteristics were captured from the wild to establish a captive breeding program that now numbers 200 wolves. Recovery has focused on the Alligator River National Wildlife Refuge in North Carolina where its island status helps reduce hybridization with coyotes. About 100 red wolves exist in the wild today.

EASTERN WOLF

The range of this wolf extends from southern Ontario and Quebec (Canada) to western Minnesota and Manitoba. Recent genetic information indicates the eastern wolf is not a subspecies of the gray wolf, but is another member of the red wolf-coyote lineage that developed

in North America. Because of this, it has been proposed as a separate species (*Canis lycaon*). This wolf has extensively hybridized with the gray wolves in the western Great Lakes region and also hybridized with coyotes in the eastern Great Lakes region.

Wolves were never extirpated across Canada, but disappeared from much of the United States under the wave of human settlement. Efforts to recover the species have been successful in the Northern Rockies and western Great Lakes regions. State wildlife agencies now manage those wolf populations along with other native species that have been saved or recovered from a time period lacking in conservation ethos. Challenges remain for the red and Mexican wolf, but biologists now have successful models to emulate as they navigate the tumultuous terrain of wolf policy and biology. 🌿

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