U.S. Fish & Wildlife Service

Gray wolf

Canis lupus

Gray wolves have evoked a variety of responses from humans throughout history. Most Native Americans revered gray wolves, trying to emulate their cunning hunting abilities. However, wolves became nearly extinct in the lower 48 states in the early part of the 20th Century because settlers believed wolves caused widespread livestock losses. Constantly persecuted and targeted by predator eradication programs sponsored by the Federal government, wolves have been pursued with more passion and determination than any other animal in U.S. history. By the time wolves were finally protected by the Endangered Species Act of 1973, they had been exterminated from the lower 48 states except for a few hundred inhabiting extreme northeastern Minnesota and a small number on Isle Royale, Michigan.

Second only to humans in their adaptation to climate extremes, gray wolves were equally at home in the deserts of Israel, the deciduous forests of Wisconsin, and the frozen arctic of Siberia. Within the continental United States, gray wolves once ranged from coast to coast and from Canada to Mexico, but they were absent from areas of the Southeast and East that were occupied by red wolves (*Canis rufus*).

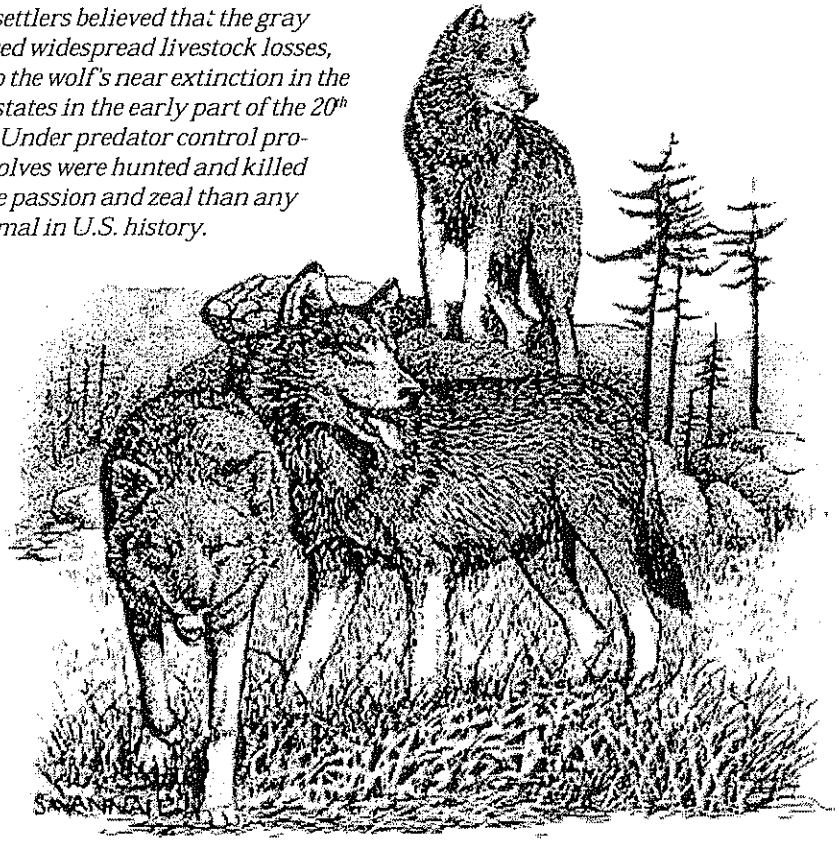
Wolf groups, or *packs*, usually consist of a set of parents (alpha pair), their offspring, and other non-breeding adults. Wolves begin mating when they are 2 to 3 years old, sometimes establishing lifelong mates. Wolves usually rear their pups in dens for the first 6 weeks. Dens are often used year after year, but wolves may also dig new dens or use some other type of shelter, such as a cave. An average of five pups are born in early spring and are cared for by the entire pack. They depend on their mother's milk for the first month, then they are gradually weaned and fed regurgitated meat brought by other pack members. By 7 to 8 months of age, when they are almost fully grown, the pups begin traveling with the adults. Often, after 1 or 2 years of age, a young wolf leaves and tries to find a mate and form its own pack. Lone dispersing wolves have traveled as far as 500 miles in search of a new home.

Wolf packs usually live within a specific territory. Territories range in size from 50 square miles to more than 1000 square miles depending on how much prey is available and seasonal prey movements. Packs use a traditional area and defend it from strange wolves. Their ability to travel over large areas to seek out vulnerable prey makes wolves good hunters. Wolves may travel as far as 30 miles in a day. Although they usually trot along at 5 m.p.h., wolves can attain speed as high as 45 m.p.h. for short distances.

Indirectly, wolves support a wide variety of other animals. Ravens, foxes, wolverines, vultures and even bears feed on the carcasses of animals killed by wolves. In some areas, bald eagles routinely feed on the carcasses of animals killed by wolves during the winter. Antelope are swift, elk are alert, and mountain goats can climb steep cliffs, in part, because of the long-term effects of wolf predation. Wolves also help regulate the balance between these *ungulates* (hoofed animals) and their food supply, making room for smaller plant-eaters such as beavers and small rodents.

Wolves are noted for their distinctive howl, which they use as a form of communication. Biologists have identified a few of the reasons wolves howl: before and after a hunt, to sound an alarm, and to locate other members of the pack when separated. Wolves howl

Western settlers believed that the gray wolf caused widespread livestock losses, leading to the wolf's near extinction in the lower 48 states in the early part of the 20th century. Under predator control programs, wolves were hunted and killed with more passion and zeal than any other animal in U.S. history.



more frequently in the evening and early morning, especially during winter breeding and pup-rearing. Howling is also one way that packs warn other wolves to stay out of their territory.

Early settlers moving westward severely depleted most populations of bison, deer, elk, and moose – animals that were important prey for wolves. With little alternative, wolves turned to sheep and cattle that had replaced their natural prey. To protect livestock, ranchers and government agencies began a campaign to eliminate wolves. Bounty programs initiated in the 19th Century continued as late as 1965, offering $20 to $50 per wolf. Wolves were trapped, shot from planes and snowmobiles, dug from their dens, and hunted with dogs. Animal carcasses salted with strychnine were left out for wolves to eat. This practice also indiscriminately killed eagles, ravens, foxes, bears and other animals that fed on the poisoned carrion.

Today about 2,445 wolves live in the wild in Minnesota, fewer than 20 on Lake Superior's Isle Royale, about 278 in Michigan's Upper Peninsula, 323 in Wisconsin, and about 664 in the northern Rocky Mountains of Montana, Idaho, and Wyoming. Wolves are being reintroduced to Arizona and New Mexico. An occasional wolf is seen in Washington State, North Dakota, or South Dakota. Populations fluctuate with food availability, strife within packs, and disease. In some areas, wolf populations also may change due to accidental and intentional killing by people.

Gray wolves are listed under the Endangered Species Act as endangered in the southwest and as threatened elsewhere in the lower 48 states within their historical range. *Endangered* means a species is considered in danger of extinction throughout all or a significant portion of its range, and *threatened* means a species may become endangered in the foreseeable future. In Alaska wolf populations number 5,900 to 7,200 and are not considered endangered or threatened.

Wolf recovery under the Endangered Species Act has been so successful that in 2003, the U.S. Fish and Wildlife Service reclassified wolves from endangered to threatened throughout a large portion of their historical range in the coterminous United States. The wolf's comeback has been attributed to a combination of scientific research, increased protection, reintroduction and management programs, and education efforts that helped increase public understanding of wolves.

Successful reintroduction and management programs have accelerated wolf recovery in the Rocky Mountains. Gray wolves have expanded their numbers thanks to science-based wolf management; restoration of wolf prey species such as deer, elk, and moose; and legal protection.

In Minnesota, home of the largest wolf population in the lower 48 states, a state program provides compensation for livestock confirmed to be killed by wolves, and a Federal program conducts trapping of individual wolves that prey on domestic animals. Similar compensation and trapping programs exist in Wisconsin and Michigan. In the West and Southwest, a private compensation program run by the Defenders of Wildlife pays for livestock killed by wolves.

Wolf recovery and management are very polarized, controversial, and emotional issues stemming from people's attitudes, fears, and misunderstandings more than from wolves themselves. Attitudes are often based on inaccurate information, making wolf management perhaps more difficult than any other wildlife management program.

Some people fear that if wolves are in an area, outdoor activities will be restricted or they fear that wolves will attack people. However, wolves are tolerant of human activity but generally avoid getting too close to humans. It is usually not necessary to restrict outdoor activities, such as logging, mining, or outdoor recreation, to protect wolves. Also, wolf attacks on humans are rare in North America. Most documented attacks have been in areas where wolves became habituated to humans when they were hand fed or attracted to garbage.

For the past 22 years, Yellowstone National Park has been at the center of debate over the wolf. By about 1930, wolves had been deliberately extirpated from the western United States, including Yellowstone. After years of comprehensive study and planning, the U.S. Fish and Wildlife Service reintroduced gray wolves into Yellowstone and U.S. Forest Service lands in central Idaho. In 1995 and 1996, 31 wolves from Canada were released in Yellowstone National Park. At the same time, 35 wolves were released on remote Forest Service lands in Idaho. All of the reintroduced wolves were fitted with radio collars and monitored by biologists from the Fish and Wildlife Service and other cooperating agencies. The reintroduction has been very successful, and by December 2002 there were about 560 wolves in the Yellowstone area and Idaho.

The Yellowstone and Idaho wolves are designated as *non-essential, experimental populations* under the Endangered Species Act. This designation allows Federal, State, and Tribal agencies and private citizens more flexibility in managing these populations. Wolves that prey on livestock will be removed and, if necessary, destroyed. Ranchers may kill wolves they catch in the act of preying on their livestock on private lands. They may be issued a permit to do the same on public lands after certain conditions are met. The experimental program has worked so well in the northern Rockies that a similar effort is being used to restore Mexican wolves to their historical range in the southwestern United States.

Mexican gray wolves, which once inhabited the southwest, existed recently only in zoos until 1998 when 13 wolves were released in Arizona. To date, 74 wolves have been released in Arizona and New Mexico. In 2002, at least 21 wolves remain in the wild with another 241 in zoos and other facilities. For the first time, four wolf packs produced pups in the wild in 2002. The goal is to establish a self-sustaining wild populations of at least 100 wolves in the species' historical range.

Wolf recovery efforts represent an opportunity to redress past mistakes in wildlife management and enhance our understanding not only of wolves, but also the complex interactions among species in their natural environments.

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