Gray wolf *Canis lupus*

Photo by John & Karen Hollingsworth/USFWS

Second only to humans in adapting to climate extremes, gray wolves once ranged from coast to coast and from Alaska to Mexico in North America. They were absent from the Southeast, which was occupied by red wolves (*Canis rufus*), and from the large deserts of the Southwest. By the early 20th century, government-sponsored predator control programs and declines in prey brought gray wolves to near extinction in the lower 48 States.

Wolves are social animals that live in groups, called *packs*, which typically include a breeding pair (the alpha pair), their offspring, and other non-breeding adults. Wolves are capable of mating by age two or three and sometimes form a lifelong bond. They can live 13 years and breed past 10 years of age. On the average, five pups are born in early spring and are cared for by the entire pack. For the first six weeks, pups are reared in dens. Dens are often used year after year, but wolves may also dig new ones or use some other type of shelter, such as a cave.

Pups depend on their mother's milk for the first month, then are gradually weaned and fed regurgitated meat brought by pack members. By the time pups are seven to eight months old they are almost fully grown and begin traveling with the adults. After a year or two, young wolves may leave to try to find a mate and form a pack. Lone, dispersing wolves have traveled as far as 600 miles in search of a mate or territory.

Wolf packs live within territories, which they defend from other wolves. Their territories range in size from 50 square miles to more than 1,000 square miles, depending on the available prey and their seasonal movements. Wolves travel over large areas to hunt, as far as 30 miles in a day. Although they usually trot along at five miles per hour, wolves can run as fast as 40 miles per hour for short distances.

Studies at Yellowstone National Park are finding that the effect of wolves cascades throughout the park's ecosystems. Ravens, foxes, wolverines, coyotes, bald eagles, and even bears benefit because they feed on carcasses of animals killed by wolves. Coyotes have declined because wolves view them as competition and keep them out of their territories; which may be responsible, in part, for an increase in small rodents. Elk changed their behavior to avoid wolf predation, which allowed willow, aspen, and cottonwood regrowth. This, in turn, provided food for beavers and habitat for songbirds. The ecosystem changes and cascading effects continue and are expected to do so for some time.

Wolves use their distinctive howl to communicate. Biologists have identified a few of the reasons wolves howl. First, they like to howl. They also howl to reinforce social bonds within the pack, to announce the beginning or end of a hunt, sound an alarm, locate members of the pack, or warn other wolves to stay out of their territory. Wolves howl more frequently in the evening and early morning, especially during winter breeding and pup-rearing.

Settlers moving westward depleted most populations of bison, deer, elk, and moose – animals that were important prey for wolves. Wolves then turned to sheep and cattle as a replacement for their natural prey. To protect livestock, ranchers and government agencies began an

eradication campaign. Bounty programs initiated in the 19th century continued as late as 1965, offering $20 to $50 per wolf. Wolves were trapped, shot, dug from their dens, and hunted with dogs. Poisoned animal carcasses were left out for wolves, a practice that also killed eagles, ravens, foxes, bears, and other animals that fed on the tainted carrion.

By the time wolves were protected by the Endangered Species Act of 1973, only a few hundred remained in extreme northeastern Minnesota and a small number on Isle Royale, Michigan. Gray wolves were listed as endangered* in the contiguous 48 States and in Mexico, except in Minnesota where they were listed as threatened.** Alaska wolf populations number 7,700 to 11,200 and are not endangered or threatened.

The wolf's comeback nationwide is due to its listing under the Endangered Species Act, which provided protection from unregulated killing and resulted in increased scientific research, along with reintroduction and management programs, and education efforts that increased public understanding of wolf biology and behavior. Today about 2,921 wolves live in Minnesota, 16 on Lake Superior's Isle Royale, about 687 in Michigan's Upper Peninsula, and at least 782 in Wisconsin.

In the northern Rocky Mountains, the U.S. Fish and Wildlife Service reintroduced gray wolves into Yellowstone National Park and U.S. Forest Service lands in central Idaho in 1995 and 1996. The reintroduction was successful by December 2010 there were at least 1,651 wolves in the northern Rocky Mountains of Montana, Idaho, and Wyoming.

The Mexican gray wolf, a subspecies, *Canis lupus baileyi*, has also been reintroduced into Arizona and New Mexico. Native to the Southwest, the wolves existed only in zoos until 1998, when 13 of the animals were released in Arizona. By the end of 2010, there were 50 wolves in the wild in Arizona and New Mexico with another 300 in zoos and other facilities. Since 2002, wolf packs have produced pups in the wild.

Photo by Tracy Brooks-Mission

Gray wolf populations fluctuate with food availability, strife within packs, and disease. In some areas wolf populations may change due to accidental or intentional killing by people.

There is some concern that wolf recovery may pose a threat to human safety. However, wolf attacks on humans are extremely rare in North America, even in Canada and Alaska where there are consistently large wolf populations. Most documented attacks have been in areas where wolves became habituated to people when they were fed by people or attracted to garbage.

Special features of the Endangered Species Act have been used in parts of the wolf range to allow the removal of wolves that prey on livestock. There are programs to compensate for the loss of livestock and pets in most of the recovery areas.

The Mexican wolves in the southwestern United States are designated as non-essential, experimental populations under the Endangered Species Act. This designation allows more management flexibility while contributing to recovery.

Wolf recovery efforts have restored a top predator to its ecosystem, and improved our understanding of the complex interactions among species in their natural environments.

For more information:
http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=A00D

**Endangered* means a species is considered in danger of extinction throughout all or a significant portion of its range.

***Threatened* means a species is likely to become endangered in the foreseeable future.

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