



Questions and Answers about Gray Wolf Biology

1) Why was the gray wolf listed as endangered?

Wolves became nearly extinct in the lower 48 States in the early part of the 20th Century when settlers tried to eradicate the species. While predator-control programs targeted wolves, their habitat was altered and destroyed by the logging of eastern forests and the subsequent conversion to agriculture. Settlers and market hunters drastically diminished the wolves' prey base which included woodland caribou, bison, and beaver. The predator-control programs, loss of habitat, and loss of prey resulted in the elimination of gray wolves throughout most of the lower 48 States except in northeastern Minnesota and Isle Royale, Michigan. A few individuals also remained in the Northern Rocky Mountains.

2) What types of habitat do wolves use?

Gray wolves use so many different habitat types that they are equally at home in the deserts of Israel, the deciduous forests of Wisconsin, and the frozen arctic of Siberia. Within North America, gray wolves formerly ranged from coast to coast with the exception of the mid-Atlantic states, the Southeast, and perhaps parts of California. They were found in almost all habitat types; prairie, forest, mountains, and wetlands. Today, they are found in the mostly forested lands of Minnesota, Wisconsin, Michigan, Montana, Idaho, and Wyoming.

Wolves can live almost anywhere if they have abundant wild prey and they are not excessively persecuted by humans. The best habitat for wolves in the West is on public lands where both these needs are met. Wolf range has expanded in Minnesota and Wisconsin to include areas that are a mix of forest and agriculture. The Mexican gray wolf has been reintroduced into the mountains of the Apache National Forest in Arizona and translocated into the Gila National Forest in New Mexico.

3) Do wolves need wilderness areas to survive?

It once was thought that gray wolves were a wilderness species, but wolves are expanding into areas that we once thought could not support them. In Minnesota and Wisconsin wolves have shown that they are adaptable and can tolerate more human disturbance than we previously thought. It now appears that wolves can survive anywhere there is sufficient food and human tolerance to allow their existence.

4) Can wolves survive near urban areas?

From a biological standpoint, we know that wolves can and do survive near urban areas. But whether wolves survive near cities and towns will depend on people. There are areas near large cities that have sufficient wild prey to support wolves. Wolves are predators, however, and conflicts arise when they kill livestock and domestic animals, including pets. These conflicts, along with urban hazards such as vehicle traffic, will likely limit the establishment of wolf populations in urban areas.

5) How far do wolves travel?

Wolf packs usually hunt within a specific territory. It is not uncommon for territories to be as large as 50 square miles but they may even extend up to 1,000 square miles in areas where prey is scarce. Wolves often cover large areas to hunt, traveling as far as 30 miles a day. Although they trot along at five mph, wolves can attain speeds as high as 40 mph. Most wolves disperse from the pack they were born into by age three. Dispersing wolves are known to have traveled as far as 600 miles.

6) What do wolves eat?

In the Midwest, wolves eat mainly white-tailed deer but they also eat moose, beaver, snowshoe hare, and other animals. In the Rocky Mountains, wolves feed on elk, deer, moose, bison, and beaver. Wolves even eat some insects, small mammals, nuts, and berries. They may not eat for a week or more but are capable of eating 20 pounds of meat in a single meal.

7) If wolf numbers get too high will deer and elk be eliminated?

No. Wolves have lived with their prey for many thousands of years and the health of wolf populations is dependent on the health of their prey base. Under certain conditions wolves can cause local decreases in prey populations. But if deer and elk numbers were to decline over an extended period of time due to severe winter conditions or habitat changes, wolves would have less food available and their health would decline. They would produce fewer pups, fewer pups would survive to adulthood, and more adult wolves would die because of poor health or in conflicts with other wolves. Thus, wolf numbers would decline before their prey could be eliminated.

Isle Royale, Michigan serves as a living laboratory to illustrate this point. One female gray wolf naturally emigrated to this island (about 132,000 acres) more than 50 years ago and eventually three packs were established. Their primary prey is moose. Through the years the numbers of moose and wolves have fluctuated, but after 50 years a moose population continues to survive on Isle Royale.

8) How do wolves in an area affect deer and elk hunting?

In general, wolves kill less vigorous members of prey species, including old, newborn, diseased, and injured animals. When weather events occur that reduce the ability of the habitat to support deer and elk, such as deep snowfalls and drought, wolves may further reduce deer and elk numbers. For example, since wolves became protected in northern Minnesota in 1978, there has been a high and even increasing harvest of deer by hunters. But two consecutive hard winters (1995-96 and 1996-97) reduced the size of the State's northern deer herd, which in turn resulted in much lower deer harvests. Wolves likely were accountable for a portion of the lower deer numbers and, in turn, the lower deer harvest. Subsequent mild winters have now resulted in a rebounding of the deer herd, despite the increasing wolf population. Minnesota deer hunters harvested a record 253,300 white-tailed deer during the firearms deer seasons in 2003.

In the West, claims have been made that wolf predation has decimated elk and deer herds and thus reduced hunting success and opportunity. However, there is no scientific information indicating that deer and elk populations have been significantly impacted by wolves alone in Idaho, Montana, or Wyoming.

In Idaho, researchers have not found any impact on elk herds or deer populations from just wolf predation. Where elk populations were monitored to specifically look for impacts of wolves, they found that elk calf to cow ratio changes were due to wild fires and habitat conditions. In that research area, the calf to cow ratios were in decline until two years following a major fire. The calf cow ratios then increased to 36 calves to 100 cows, right in the middle of wolf pack activity. This suggests that many factors influence elk populations. Idaho elk populations appear to be lower than they were 10 years ago but are still near their highest ever recorded and hunter success continues to vary between 20-25% on average, mostly dependent upon weather conditions. Hunter success rate is slightly lower than it was 10 years ago but has not changed significantly with the addition of wolves to the Idaho mountains.

In 2002, all Montana elk herds in the Greater Yellowstone Area, except one herd south of Bozeman, surpassed State population objectives. Northern range elk, the largest herd, have fluctuated between 9,000 and 19,000 in the past 20 years. While the ratio of 14 calves to 100 cows counted in 2002 was the lowest in more than 20 years, the ongoing region-wide drought is suspected as the major cause. Wolves and other predators undoubtedly reduced the elk population, but it was the drought conditions and habitat quality that were

responsible for the overall population decline. Also, Montana uses winter cow hunts to reduce elk populations. Human hunting of adult females significantly affects population size since it targets prime-aged breeding females which limits the number of calves produced in the spring. Annual harvest averages 1,400 per winter and ranges from hundreds to thousands depending how many elk leave Yellowstone National Park because of snow depth.

In 2002, the Wyoming wintering elk population of 40,000 exceeded management objectives for all 10 herds in the Greater Yellowstone Area (GYA). In addition to elk, there are approximately 70,000 mule deer and 9,000 moose wintering in the GYA. Post-season cow to calf ratios for elk and moose in the GYA have decreased since the mid-1980s. However, wolves are not thought to be entirely responsible for the decrease since Wyoming has also observed decreases in cow to calf ratios in other herds where wolves are not present. Wyoming has been purposely reducing elk numbers in the GYA in an attempt to manage elk herds at approved population objectives. Reductions in permits are expected in the future as populations are reduced. Additional reductions may be necessary in isolated areas where specific wolf packs have settled.

In summary, wolf predation can accelerate prey population declines or slow increases but herd size is most often determined by a combination of other factors, primarily habitat condition, weather, or human hunting of adult females.

9) Do wolves really take the old, young, sick, starving, or injured animals?

It is well-documented that wolves tend to do this. Hunting and bringing down big game is dangerous work for a wolf, and wolves are sometimes killed by elk, moose, and even deer. In the wild, they cannot afford to be injured; therefore, they go after the safest animals to kill and often leave strong animals alone. If weather or other conditions make prey unusually vulnerable, wolves can and do kill prime-aged animals but wolf predation tends to be selective.

10) Do wolves kill more than they can eat?

Sometimes, but rarely. The few times that wolves have been documented killing more than they could eat were when conditions such as deep snow or other unusual conditions made it easy for them to kill their prey. Even then, they returned to those kills and continued to use them.

11) Does the presence of wolves affect the numbers of animals other than deer and elk?

Yes. As one of the top predators in the food chain, wolves have a definite impact on their ecosystem. Yellowstone National Park and the surrounding area provides a good opportunity to document the effect that wolves can have on other animals. Within two years of the wolf reintroduction, researchers found that wolves had killed half the coyotes in the area, forced elk to become more vigilant, and provided many opportunities for scavengers to share their kills. Because there are fewer coyotes, rodents and small animals such as fox may be more plentiful, a boon for predators like hawks and bald eagles. Long term studies are needed to show if these changes persist and if other effects appear.

12) What is a wolf pack?

The wolf pack is an extended family unit that includes a dominant male and female, referred to as the alpha pair. In each pack, the alpha animals are usually the only ones to breed, preventing subordinate adults from mating by physically harassing them. Thus, most packs produce only one litter of four to six pups each year. A pack typically includes the alpha pair, the young wolves born that year, perhaps last year's young, and sometimes a few older wolves that may or may not be related to the alpha pair.

13) How many wolves are in a pack?

Pack sizes vary considerably, depending on the size of the wolf population in a particular area, whether they are feeding pups and the amount of prey available. Average pack size in the Midwest varies from four to eight wolves during winter with records of up to 16. In the northern Rocky Mountains, packs average about 10 wolves, but one pack in Yellowstone had 37 members. Pack size can temporarily be as high as 30 or more in parts of Canada and Alaska but most packs are much smaller.

14) Do wolves mate for life?

Usually. A wolf pair may mate until one dies and then the living mate will find another mate.

15) What happens to a pack when the alpha male or female are killed?

In a study of a protected population (a population that was not hunted or trapped), the death of one or both members of the alpha pair usually resulted in another adult wolf coming in to replace the one that died. Sometimes it led to dissolution of the pack. Packs sometimes adopt unrelated dispersing wolves that could also become alpha members of the pack. When packs dissolved after the death of an alpha animal, new packs formed in those areas.

16) How does a non-breeding wolf attain breeding status?

A wolf can stay with its natal pack and bide its time until it works its way up the dominance hierarchy or it can disperse, leaving the pack to find a mate and a vacant area in which to start its own pack. Both strategies involve risk. A wolf that bides its time may be out-competed by another wolf and never achieve dominance in its natal pack. Dispersers must hunt on their own until they form or join a new pack, and they may be killed when they invade the territory of other wolves.

Dispersers can leave a pack at any time of year but usually leave the pack in autumn or winter, during hunting and trapping season and prior to the February breeding season. They must be alert to entering other wolf packs' territories and they must keep a constant vigil to avoid encounters with people, their major enemy. Dispersers have been known to travel great distances in a short time. One radio-collared Wisconsin wolf traveled 23 miles in one day. In ten months, one Minnesota wolf traveled 550 miles to Saskatchewan, Canada. In 2001, a wolf trapped in the western portion of Michigan's Upper Peninsula was killed in north-central Missouri, about 600 miles from its home territory, by a farmer who stated that he thought it was a coyote.

17) When do wolves mate?

The breeding season for wolves is from late January through March; the further south, the earlier the breeding season. Females are pregnant for about 63 days before they give birth to four to six pups.

18) Where do wolves give birth to their young?

Pups are usually born in a den excavated as much as 10 feet into well-drained soil. Sometimes the female selects a hollow log, cave, tree with overhanging branches, or abandoned beaver lodge instead of making a den. At birth, wolf pups are deaf and blind, have dark fuzzy fur and weigh about one pound. They begin to see when two weeks old and can hear after three weeks. At this time, they become very active and playful.

19) At what age are wolf pups weaned?

Wolf pups are weaned at about six weeks old, and then the adults begin to bring them meat. Most adult wolves center their activities on dens while traveling as far as 20 miles away in search of food, which is regularly brought back to the den. Adults eat the meat at a kill site, often miles away from the pups, and then they return and regurgitate the food for the pups to eat. The hungry pups jump and nip at the adults' muzzles to stimulate regurgitation.

20) How long do wolf pups stay in the den?

By mid- to late summer, when the pups are six to eight weeks old, they are usually moved some distance away from the den. The female carries the pups in her mouth to the first of a series of rendezvous sites or nursery areas. These sites are the focus of the pack's social activities for the summer months and are usually near water. By August, the pups wander up to two to three miles from the rendezvous sites and use them less often. The pack abandons the sites in September or October, and the pups, now almost full-grown, follow the adults.

21) How long do wolves live?

Gray wolves are known to live up to 13 years in the wild and 15 years in captivity.

22) In protected populations, what kills wolves?

In natural situations pups die from starvation and adults die from being killed by members of neighboring packs. Adults can also starve to death if the prey base is not adequate. Diseases, such as canine parvovirus and mange, also kill wolves, especially pups. Sometimes adult wolves are killed by animals on which they intended to prey.

23) Are wolves a threat to humans, in particular small children?

Aggressive behavior from wild wolves towards humans is extremely rare. Mark McNay of the Alaska Department of Fish and Game compiled information about documented wolf-human encounters in "A Case History of Wolf-Human Encounters in Alaska and Canada." There are 59,000 to 70,000 gray wolves in Alaska and Canada, and since 1970 there were 16 cases of non-rabid wolves biting people. Six of those cases were severe but to our best knowledge no one has been killed by a healthy wild wolf in North America. In contrast, nearly a dozen humans are killed by domestic dogs, pet wolves, and wolf-dog hybrids every year in North America. Wolves and wolf-dog hybrids kept as pets can be unpredictable and dangerous.

Wild wolves generally are shy of humans and avoid contact with them whenever possible. However, any wild animal can be dangerous if it is cornered, injured or sick, or has become habituated to humans through activities such as artificial feeding. People should avoid actions that encourage wolves to spend time near humans or become dependent on them for food.

24) Is there any danger from wolves to my pets?

In some situations, yes. To protect both pets and wildlife, pets should always be carefully monitored by their owners in areas where they may encounter native wildlife, such as national forests or parks. Unsupervised dogs that stray from their owner's homes or from their handlers into wolf territories are definitely at risk. Wolves will treat dogs as interlopers on their territories and may attack and kill them, especially if the wolves have pups nearby.

25) Do wolves make good pets?

NO, wolves or wolf-dog hybrids do not make good pets. The idea of owning a wolf or a wolf-dog cross is appealing to many people, but the reality of owning one of these animals is often very different. While wolf puppies might be as cute as dog puppies, they will grow up to be wolves, not dogs, no matter how much they are treated like dogs. With wolf-dog crosses, or hybrids, the higher the percentage of wolf genes, the more wolf-like behavior the hybrid will exhibit. There is no way of knowing the percentage wolf genes in a cross that is an offspring of a hybrid.

Many an unsuspecting wolf lover has purchased a wolf pup, only to find that it is largely untrainable, because it does not care much about pleasing its owner. As it grows into adulthood it becomes unpredictable, if not downright dangerous, especially around children and small animals. Such animals often live miserable lives on the end of a chain after a frustrated owner gives up on attempting to train the animal.

Often wolf or hybrid owners who are unable to cope with their "pet" elect to either pass the animal along to another unsuspecting wolf lover or sentence the animal to life at a sanctuary (many such facilities exist, but most are already overcrowded). Some may release the animal to the wild, where it will most likely starve to death or because of its familiarity with people, be involved in depredation incidents resulting in wild wolves being unfairly blamed.

Some wolves and wolf hybrids do fare reasonably well with conscientious owners who are knowledgeable and well-prepared to deal with the special needs of their animals. Meanwhile, however, animal shelters are overflowing with gentle, obedient dogs of all sizes, shapes, and colors that must be killed if no homes are found for them. Given this fact, the growing trade in captive wolves and hybrids is tragic and unnecessary.

26) How big are wolves?

The size of a wolf varies depending on where it is found. Smaller sizes tend to be found in the southern portion of wolf range and larger sizes in the northern portion. Females tend to be slightly smaller than males. The average size of males is 5 to 6.5 feet long (tip of nose to tip of tail), 26 to 32 inches high at the shoulder, and 70 to 115 pounds in weight (in Alaska they occasionally reach 145 pounds). The average size of females is 4.5 to 6 feet long, 26 to 32 inches high at the shoulder, and 60 to 100 pounds in weight. Wolves reach adult size by 1 year of age.

27) How can you tell the difference between a timber wolf and a coyote or a large dog?

Size is a key difference between coyotes and wolves. Coyotes range from 3.5 to 4.5 feet long, 16 to 20 inches high at the shoulder and 20 to 50 pounds. This is about half the size of a wolf. Coyotes tend to have gray or reddish brown fur with rusty colored legs, feet, and ears, and whitish fur on the throat and belly. Their ears are pointed and relatively long, and the muzzle is pointed and petite. The track size is about 2.5 inches long and 1.5 inches wide. Coyotes tend to carry their tail held below the back line. The tail may or may not be black tipped and is less than 18 inches long. In contrast, wolves have many color variations but tend to be buff-colored tans grizzled with gray and black (although they can also be black or white). Their ears are rounded and relatively short, and the muzzle is large and blocky. Wolves generally hold their tail straight out from the body or down. The tail is black tipped and over 18 inches long. A wolf track size is about 4.5 inches long and 3.5 inches wide.

Wolves and other wild canids usually place their hind foot in the track left by the front foot, whereas a dog's front and hind foot tracks usually do not overlap each other. Only a few breeds of dogs leave tracks longer than 4 inches (Great Danes, St. Bernards, and some bloodhounds). Although the tails of many dogs are curled; coyote and wolf tails are never seen curled.

28) How can I learn more about wolves and the things that are going on right now that will affect their future?

Information about the Eastern DPS is on the Service's Website at <http://midwest.fws.gov/wolf>, information about the Western DPS is on the Service's Website at <http://westerngraywolf.fws.gov/> and information about the Southwestern DPS is on the Service's Website at <http://mexicanwolf.fws.gov/>. Mailing addresses, e:mail addresses, and phone numbers for information about gray wolves are:

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