DEPARTMENT OF NATURAL RESOURCES

Monitoring Minnesota's wolf population

Minnesota has the largest wolf population in the lower 48 states.

International Wolf Center

Wolves are secretive and elusive.

So, how does the Department of Natural Resources estimate the population of a species that prefers not to be seen and lives largely in heavily forested areas?

The answer is detective work—work that involves research projects, population trend surveys, monitoring the number and location of livestock depredations and delineating where wolves exist and where they don't. Minnesota's wolf range has expanded significantly since the 1970s when wolf packs were found only in the far north. Today, wolf packs exist as far south as Center City, Milaca, Little Falls and Detroit Lakes.

Monitoring methods

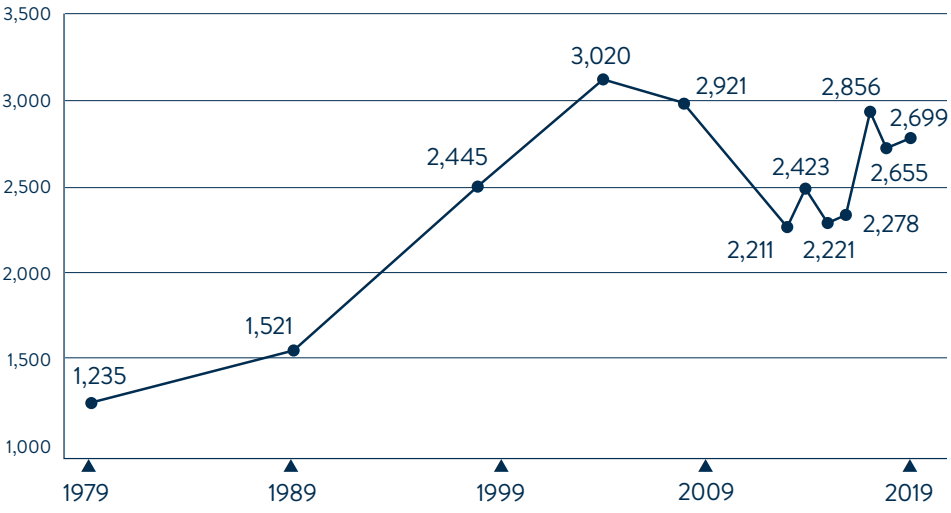
The DNR regularly conducts comprehensive wolf population surveys every four to six years and in recent years has been providing annual wolf population estimates. The survey is not a count of every wolf in Minnesota. Instead, it is a statistical estimate.

How monitoring works:

- It begins by using field observations and habitat models that estimate how much land is occupied by wolf packs in Minnesota.
- Next, data on average territory size from radio-collared wolf packs is used to estimate how many wolf packs likely reside within that area.
- Finally, average pack size is estimated from aerial counts on radio-marked packs in winter. The survey provides estimates of how much land is occupied, the number of packs within that area, the average number of wolves per pack and, ultimately, the total wolf population size that winter, before pups are born.

Biologists also look at observations from annual scent post surveys, winter track surveys, verified depredations and wolves trapped in response to depredations each year to monitor population trends between the comprehensive population surveys.

Minnesota Wolf Population

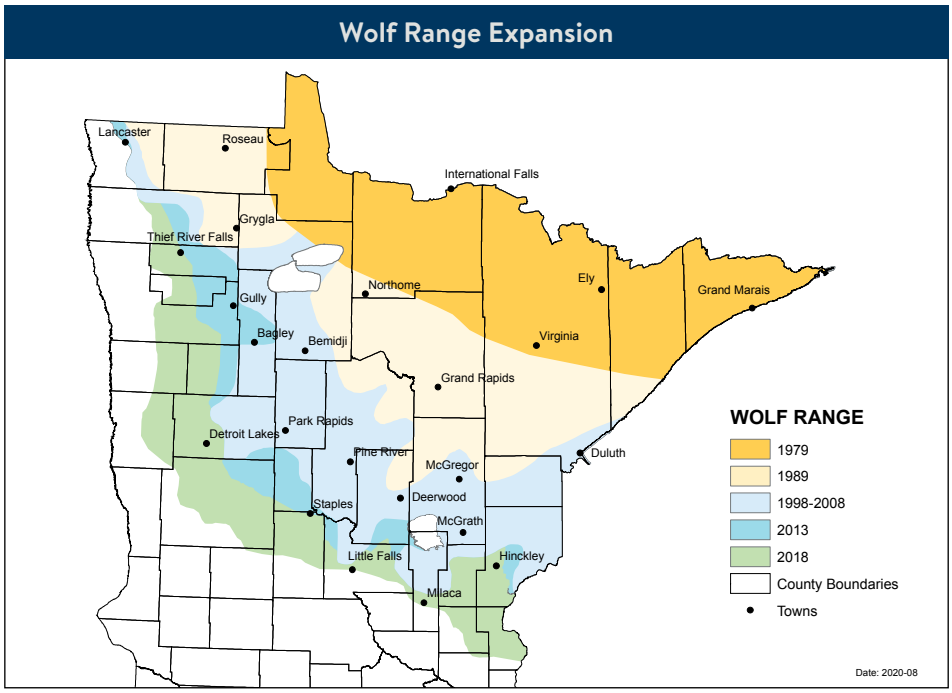


Minnesota wolf population estimates and trends from 1,235 wolves in 1979 to 2,699 in 2019.

Things to know about Minnesota's wolf population

In the 1960s, the population was estimated to be as low as 350. Wolf numbers trended upward during the next 40 years, peaking at about 3,000 from 2002 until 2005. Since 2014 the population estimate has been about 2,700 with a current population estimate of 2,699.

Wolf packs generally consist of a mated pair and their offspring. On average wolf packs have 4-6 wolves in each pack, but sometimes have as many as 10-12. Young wolves typically disperse from the pack at one to three years of age. The distance they disperse depends on many factors, but the goal is typically the same—to find a mate and a vacant territory. Wolves have been known to disperse as far as 550 miles away.



This map shows the expansion of Minnesota's wolf range from 1978 to 2018. It identifies the primary range. Wolf sightings can occur outside of this range.

Wolves commonly live six to eight years but up to 13 years is possible. Common causes of death in the wild include starvation, injuries from other wolves, disease and sometimes injuries from prey animals. Humans have the biggest influence on wolf populations through mortality causes such as wolf removal for depredation control (about 200 per year), poaching and various types of accidents, including vehicle collisions.

A wolf pack territory averages about 50-60 square miles. Wolf territory size is primarily influenced by prey density. Where deer density is high, a territory may be less than 10 square miles, but where deer density is low it can be over 100 square miles. Territory size can also be influenced by the amount of competition from other packs.