

Elk (*Cervus elaphus*) are the most abundant large mammal found in Yellowstone. European American settlers used the word “elk” to describe the animal, which is the word used in Europe for moose (causing great confusion for European visitors). The Shawnee word “wapiti,” which means “white deer” or “white-rumped deer,” is another name for elk. The North American elk is considered the same species as the red deer of Europe.

Bull elk are probably the most photographed animals in Yellowstone, due to their huge antlers. Bull elk begin growing their first set of antlers when they are about one year old. Antler growth is triggered in spring by a combination of two factors: a depression of testosterone levels and lengthening daylight. The first result of this change is the casting or shedding of the previous year’s “rack.” Most bulls drop their antlers in March and April. New growth begins soon after.

Growing antlers are covered with a thick, fuzzy coating of skin commonly referred to as “velvet.” Blood flowing in the skin deposits calcium that makes the antler. Usually around early August, further hormonal changes signal the end of antler growth, and the bull begins scraping the velvet off, polishing and sharpening the antlers in the process.

The antler growing period is shortest for yearling bulls (about 90 days) and longest for healthy, mature bulls (about 140 days).

As of January 2011 . . .

Number in Yellowstone

- Summer: 10,000–20,000 elk in 6 to 7 different herds.
- Winter: <5,000

Where to see

Summer: Gibbon Meadows, Elk Park, and Lamar Valley.

Autumn, during “rut” or mating season: northern range, including Mammoth Hot Springs; Madison River.

Winter: migrate south to the Jackson Hole Elk Refuge in Jackson, Wyoming, or north to the northern range and around Gardiner, Montana; <100 year-round along the Firehole and Madison rivers.

Behavior and Size

- Male (bull) weighs about 700 pounds and is about 5 feet high at the shoulder; female (cow) weighs about 500 pounds and is

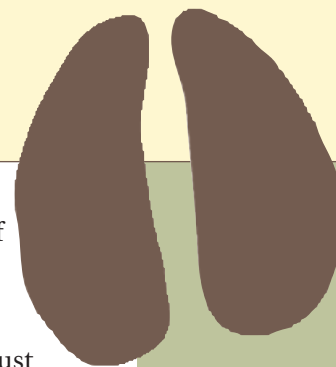
slightly shorter; calf is about 30 pounds at birth.

- Average life span: 13–18 years.
- Bulls have antlers, which begin growing in the spring and usually drop in March or April.
- Feed on grasses, sedges, other herbs and shrubs, bark of aspen trees, conifer needles, burned bark, aquatic plants.
- Mating season (rut) in September and October; calves born in May to late June.

See “Northern Range” in Chapter 8.

Roughly 70 percent of the antler growth takes place in the last half of the period, when the antlers of a mature bull will grow $\frac{2}{3}$ of an inch each day. The antlers of a typical healthy bull are 55–60 inches long, just under six feet wide, and weigh about 30 pounds per pair.

Bulls retain their antlers through the winter. When antlered, bulls usually settle disputes by wrestling with their antlers. When antlerless, they use their front hooves (as cows do), which is more likely to result in injury to one of the combatants. Because bulls spend the winter with other bulls or with gender-mixed herds, retaining antlers means fewer injuries sustained overall. Also, bulls with large antlers that are retained longer are at the top of elk social structure, allowing them preferential access to feeding sites.



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Elk

Antler Details

- Are usually symmetrical.
- The average, healthy, mature bull has 6 tines on each antler, and is known as a “six point” or “six by six.”
- Can occur on female elk.
- One-year-old bulls grow 10–20 inch spikes, sometimes forked.
- Two-year-old bulls usually have slender antlers with 4 to 5 points.
- Three-year-old bulls have thicker antlers.
- Four-year-old and older bulls typically have 6 points; antlers are thicker and longer each year.
- Eleven- or twelve-year old bulls often grow the heaviest antlers; after that age, the size of antlers generally diminishes.



Mating Season

The mating season (rut) generally occurs from early September to mid-October. Elk gather in mixed herds—lots of females and calves, with a few bulls nearby. Bulls bugle to announce their availability and fitness to females and to warn and challenge other bulls. When answered, bulls move toward one another and sometimes engage in battle for access to the cows. They crash their antlers together, push each other intensely, and wrestle for dominance. While loud and extremely strenuous, fights rarely cause serious injury. The weaker bull ultimately gives up and wanders off.

Calves are born in May and June. They are brown with white spots and have little scent, providing them with good camouflage from predators. They can walk within an hour of birth, but they spend much of their first week to ten days bedded down between nursings. Soon thereafter they begin grazing with their mothers, and join a herd of other cows and calves. Up to two-thirds of each year’s calves may be killed by predators. Elk calves are food for black and grizzly bears, wolves, coyotes, cougars, and

golden eagles. Female elk can live 17–18 years; rare individuals may live 22 years.

Habitat

Climate is an important factor affecting the size and distribution of elk herds here. While nearly the entire park provides summer habitat for 10,000–20,000 elk, winter snowfalls force elk and other ungulates to leave most of the high elevation grasslands of the park. Less than 5,000 elk winter in the park.

The northern range, with more moderate temperatures and less snowfall than the park interior, can support large numbers of wintering elk. The northern Yellowstone herd is one of the largest herds of elk in the United States. The herd winters in the area of the Lamar and Yellowstone river valleys from Soda Butte to Gardiner, Montana. It also migrates outside of the park into the Gallatin National Forest and onto private lands.

Only one herd lives both winter and summer inside the park. The Madison–Firehole elk herd (less than 100 animals) has been the focus of a research study since November 1991. Researchers are examining how environmental variability effects ungulate reproduction and survival. Prior to wolf restoration, the population was naturally regulated by severe winter conditions to a degree not found in other, human-hunted elk herds. The elk are also affected by high fluoride and silica levels in the water and plants they eat, which affect enamel formation and wear out teeth quickly—thus shortening their lives. The average life span is 13 years; elk on the northern range live approximately 18 years. Information gained in this study will be useful in comparing un hunted and hunted elk populations.

Researchers also examined elk use of areas burned in the wildfires of 1988. They found that elk ate the bark of burned trees. Fires had altered the chemical composition of lodgepole pine bark, making it more digestible and of higher protein content than live bark. While the burned bark was not the highest quality forage for elk, it is comparable to other low-quality browse species. Researchers speculate that elk selected burned bark because it was readily available above the snow cover in winter.

For management history of elk, see Chapter 8, “Northern Range.”

Horns vs. Antlers

Antlers, found on members of the deer family, grow as an extension of the animal’s skull. They are true bone, are a single structure, and, generally, are found only on males. Horns, found on pronghorn, bighorn sheep, and bison, are a two-part structure. An interior portion of bone (an extension of the skull) is covered by an exterior sheath grown by specialized hair follicles (similar to human fingernails). Antlers are shed and regrown yearly while horns are never shed and continue to grow throughout an animal’s life. One exception is the pronghorn, which sheds and regrows its horn sheath each year.