

LARGE UNGULATES: ROCKY MOUNTAIN ELK

Rocky Mountain Elk (*Cervus canadensis nelsoni*)

The Rocky Mountain elk is one of six subspecies of elk in North America, including the tule elk of California, Roosevelt elk of the northwest, Manitoban elk of Canada and two extinct species, the Merriam's elk and the eastern elk. Rocky Mountain elk are the second largest member of the deer family in North America, with moose being the largest. There is not currently a resident moose population on Vermejo. Elk are also called wapiti, with the name attributed to the Shawnee language, saawanwaatoweewe, meaning white rump which could describe both elk and deer.

History of Elk in New Mexico

Native populations of elk were extirpated in New Mexico in the early 1900's. Due to unregulated hunting, Rocky Mountain elk were extirpated in northern New Mexico while the Merriam's elk was hunted to extinction. In 1911, the "Bartlett Ranch", now Vermejo, purchased 15 Rocky Mountain elk and the state imported an additional 12 elk from Colorado to attempt to reestablish the elk population of the northern mountains. Additional elk were brought to New Mexico by the state after 1938 to continue to grow the population. In 2023, New Mexico Game and Fish estimated the state's population to be 104,000 elk.

Elk Biology

The life expectancy of a bull elk is 14-16 years and 18-20 years for a cow elk. The oldest recorded cow elk on Vermejo was 22 years old. Bulls typically weigh 700-800 pounds with cows being smaller and lighter weighing roughly 500-600 pounds. Elk calves when born weigh approximately 35-40 lbs. Elk are ruminants having a four-chambered stomach to aid in digesting tough plant fibers. An elk's diet consists of grasses and forbs, but elk will also browse trees and shrubs with favorites being young aspen and willows. Elk (and bison) will also re-graze areas of grasslands that have recently been grazed keying on the potentially higher nutrients in the new growth.

Reproduction

Elk mating occurs in the early fall when bulls rut or compete for breeding opportunities with cow elk. The timing of the rut varies from year to year, likely as a response to climatic conditions. Calving occurs in late spring to early summer (late May-early June). Elk have an evolutionary behavior called "prey swamping". Prey swamping means there is large influx of births at a single time of the year so that there is more prey available than predators can consume. This increases the survivability of elk calves at a time when they are most vulnerable to predation. Cows leave the protection of the herd to give birth. Most cows have one calf but can give birth to twins. The calves are left hidden in the grass from predators and their white spotted pattern helps to camouflage the young. The cows remain nearby but try not to give away the calf's location. Once the newborn is more mobile, the cow and calf return to the herd and calf nurseries can be seen protected by surrounding cows.

Vocalizations

Elk use many vocalizations to communicate. Cow and calf pairs will call back and forth to communicate within the herd and cows will also communicate with each other, often sounding like an ongoing conversation. An elk will use warning barks to either startle a potential predator and/or warn other elk of a threat. Bull elk bugle during the rut or to call to potential mates and challenge competitors as well as make what some describe as chuckling noises. Bugling is in essence, a declaration of territory. Elk are much more dependent on vocal communication than any other ungulate on the property.

Recruitment and Predation

Recruitment rate is the percentage of calves that survive their first year. Recruitment can vary from year to year and can be dependent on predator density and/or the amount of cover available. In a growing herd, recruitment is usually 25-30% or higher; a stable herd is 20-25%, and a declining herd has recruitment of less than 20%. Predators of elk on Vermejo include black bear, mountain lion, coyote, and golden eagles. The young calves are particularly susceptible to predation by bear, coyote, and eagles. Mountain lions are the most common predator of mature elk on Vermejo.

Antlers and Ivories

Elk antlers are the fastest known growing bone of any species. Antlers are pure bone and unlike horns which are permanent, are shed each year of a bull's life. Bull elk shed their antlers in early spring. Bull elk testosterone levels decrease in winter, likely influenced by lower light levels. The decrease weakens the connection of the antler to the pedicle and allow the antlers to fall off. The bulls then begin to grow their next set of antlers from the pedicle and the antlers remain in velvet until midsummer. The antlers are a key part of reproduction and the rut as well as a potential defense against predators. One large seven point antler can weight about 10 pounds. Cow elk do not have antlers.

Elk also have ivories which are small canine like upper teeth are thought to be remnants of tusk-like structures from their ancestors. Fossil records show that elk were present in Alaska and Canada during the Ice Age circa 15,000 – 12,000 BCE. Elk ivories are commonly used to make jewelry, both in historic and current times.

Disease

Elk, like other deer species, are susceptible to chronic wasting disease or CWD. CWD is present in a few areas of New Mexico but has not been detected in the northeast portion of the state. CWD is a neurodegenerative disease caused by accumulation of a prion protein. The prion proteins cause brain proteins to fold abnormally altering their shape and impairing their function. The disease also can affect mule deer populations.

Population Management

In 1996, when purchased by Ted Turner, Vermejo destocked cattle from the property. The elk population responded to the increase in available forage and grew to around 12,000 elk. The early 2000's were also persistent drought years in the southwest. The large elk population impacted vegetation, especially along riparian corridors. Vermejo's Natural Resources team calculated the carrying capacity of all large ungulates and began to reduce the population to a sustainable level through cow elk hunting. Vermejo's wildlife biologists continue to conduct aerial wildlife surveys annually and maintain a population model to track the elk. The 2023 population estimate from the survey is 7000-7500 elk. Elk are present in all of Vermejo's ecosystems including the alpine tundra in the summers and also on the shortgrass prairie.

Frequently Asked Questions:

1. **Are antlers the same as horns?** Elk have antlers NOT horns. Antlers are shed annually while horns are permanent. Elk, deer, and moose have antlers, bison have horns.
2. **When are elk calves born?** Calves are born in late May to early June.
3. **When is the elk rut?** The rut normally occurs from mid-September to mid-October.
4. **Do other animals eat antlers?** Coyote and fox will often chew on shed antlers while mammals like chipmunks, mice, porcupines, squirrels and sometimes even bears will eat shed antlers. The antlers are a source of calcium, phosphorus, and protein for the animals.