How much can antlers weigh?

Each antler can weigh 20 pounds. With two antlers, that makes an incredible 40 pounds some elk are carrying around on their heads—about the weight of a five-gallon pail of water.
in Yellowstone National Park to find out whether wolves prefer to hunt antlered elk or pedicled elk (the ones that have dropped their antlers).

What did they discover?

The researchers describe two important discoveries from their study.

• First, their data showed that wolves were more likely to attack pedicled elk than antlered elk when they had a choice.

• Also, the researchers found that wolves “strongly preferred” to kill pedicled elk over antlered elk. In other words, if you are a male elk that has dropped your antlers, you’d better watch your back!

According to the researchers, these results are surprising because pedicled elk are usually in better physical condition than antlered elk—and predators like wolves, that chase their prey, would rather go after animals that are in bad physical shape. This is because injured, sick, or weak animals are easier to hunt. The researchers suggest that, even though carrying around heavy, awkward antlers takes a physical toll on an elk, the possibility of being hunted and eaten by wolves may have caused elk to evolve to sometimes wait to shed their antlers.

Another observation the researchers make is that whether elk shed their antlers earlier or later often reflects how old they are. Older, bigger elk are more likely to shed their antlers early, so they can get a head start on growing bigger, more impressive ones that make attracting mates more likely. Younger elk that are probably not big and strong enough to attract females anyway are more likely to keep their antlers longer and persuade wolves to stay away.

Why does it matter?

The title of their article, “Predation shapes the evolutionary traits of cervid weapons,” sums up the researchers’ noteworthy finding: Wolves hunting elk—with their preference to attack and kill pedicled elk— influenced a second purpose for elk antlers. Elk not only use their antlers as a tool to attract mates; they have evolved to keep their antlers longer during a year as a way to convince wolves to leave them alone.

These two purposes of elk antlers are in competition, the researchers say. Elk shed their antlers early or late in the spring, depending how they tend to use them—as a tool for attracting mates or as a deterrent to wolves.

Elk in North America are also called wapiti. This name originates from the Shawnee and Cree languages, and refers to the white rump of an elk.

In Europe, the term “elk” refers to the animal we call a moose in North America.

Did you know?

People sometimes call antlers “horns,” but antlers and horns are different. Antlers are made of bone and are shed and regrown every year. Horns grow throughout an animal’s life and are not shed. The inside structure of the horn is bone, but the outside is covered in keratin, the same substance found in hair and fingernails. White-tailed deer and elk have antlers. Bison and bighorn sheep have horns.

Q: How do they do it?
A: Antlers grow out of an elk’s skull from pedicles, which are bony protrusions on top of the skull. When antlers start growing, they are made of cartilage—the same material that gives your nose and ears their shape. As they continue growing, the cartilage is replaced by bone. The cells that turn cartilage into bone are the same ones that cause the antlers to be shed. The shedding process is triggered by the elk’s hormone levels and how much light there is in a 24-hour period. Over the winter, when hormones change and days grow shorter, cells begin to reabsorb the bone between the antler and the pedicle. Eventually, the bond between the pedicle and the antler weakens enough that the antlers separate and fall off the elk’s head, usually in very early spring.