

Roosevelt elk (*Cervus canadensis*)



Elk (*Cervus elaphus*) are sometimes called “wapiti” in North America. Two subspecies of elk have been introduced to Alaska. Roosevelt elk (*Cervus elaphus roosevelti*) are larger, slightly darker in color, and have shorter, thicker antlers than the Rocky Mountain elk (*Cervus elaphus nelsoni*). In many European countries “elk” are actually what we know as moose (*Alces alces*).

Fossil bones indicate that a subspecies of elk once existed in Interior Alaska during the Pleistocene period, but all of the elk currently in Alaska were introduced from the Pacific Northwest in the last century. The first successful translocation involved eight Roosevelt elk calves that were captured on the Olympic Peninsula of Washington State in 1928 and moved to Afognak Island (near Kodiak) in 1929. These elk have successfully established themselves on both Afognak and Raspberry Islands. The second successful transplant occurred in 1987, when 33 Roosevelt elk and 17 Rocky Mountain elk were captured in Oregon and moved to Etolin Island (near Petersburg) in Southeast Alaska. These elk subsequently dispersed and established a second breeding population on neighboring Zarembo Island.



General description: Elk are members of the deer family and share many physical traits with deer, moose, and caribou. They are much larger than deer and caribou, but not as large as the moose which occur in Alaska. Distinguishing features include a large yellowish rump patch, a grayish to brownish body, and dark brown legs and neck. Unlike some members of the deer family, both sexes have upper canine teeth. The males have antlers, which in prime bulls are very large, sweeping gracefully back over the shoulders with spikes pointing forward. Elk shed their antlers during the winter each year and grow new ones the following summer. The soft growing antler is covered with “velvet” which is scraped off by rubbing and jousting after the antlers harden in the fall. Bull elk on Afognak Island are estimated to weigh up to 1,300 pounds (591 kg). Cow elk are similar in appearance to the bulls, but are smaller and have no antlers.

Life history: Elk calves are born in late May or early June when abundant food is available for the mother and the mild weather increases the calves' chances for survival. Birth usually occurs under the cover of dense spruce forests, hidden from predators and protected from the elements. Calves are born with protective coloration (light spotted areas on the back which act as camouflage). A few days after giving birth, the mother joins other cow elk with calves. A single cow will often “babysit” with the calves while the remaining cows seek food. As summer progresses, elk bands move above timberline and feed on the alpine slopes where breezes keep biting insects at bay and young plants

are highly nutritious. By July, the calves, although still nursing, begin feeding on succulent forbs.

Beginning in August, bands of elk congregate and form herds consisting of cows, calves, yearlings and an occasional mature bull. Nearby, but separate from the herd, can be found small bands of mature bulls. During September, the bulls join the main herds and mating activities (the rut) begin. Large herds are scenes of vigorous activity as mature bulls challenge each other vocally, emitting a high pitched whistle or “bugle,” an eerie but thrilling sound. Occasionally, pushing and shoving matches are initiated by large bulls to lay claim to mating privileges. Smaller bulls may attempt to take advantage of this situation and run past the sparring challengers to mate.

By mid-October most breeding activities have ceased. The herds may begin to disperse into smaller bands as they move into wintering areas. The winter months are spent in lower valleys and in the dense spruce forests and small openings near the coastline searching for food.

Food: Elk are hardy animals whose large body size and herding tendencies require tremendous amounts of food. From late spring to early fall with a wide variety of food available, elk are mainly grazers, using grasses, forbs, and other leafy vegetation. By late fall they become browsers, feeding on sprouts and branches of shrubs and trees. The elk can become its own worst enemy as large herds often damage their food supply by excessive stripping, trampling, and overcropping of staple food plants, including willow and elderberry. For this reason, it is important to keep elk herds from becoming too large in relation to the available food supply.

Population: From the original eight transplanted calves, Afognak elk had expanded to approximately 1,200 to 1,500 animals by 1965. A series of hard winters with heavy snow accumulation during the late 1960s and early 1970s resulted in extensive natural mortality and reduced calf production and survival. By the mid-1980s the population had recovered to number about 1,200 animals. In the late 2000s the herd was stable at 900 elk.

Approximately two-thirds of the 50 elk introduced to Etolin Island died from predation, starvation, and accidents within 18 months of release. Despite the high mortality, the elk population had increased to an estimated 100–125 animals by the early 1990s and elk had successfully dispersed to neighboring islands, establishing a second breeding population on Zarembo Island. A current subjective estimate of the elk population on the two islands is approximately 400 animals, with about 75 percent on Etolin, and the remainder on Zarembo. Elk numbers on other islands are low.

Factors which may limit the growth of elk populations include hunting, starvation, disease, predation by brown bears, and a lowered birth rate when the animals become too numerous to be supported by the available food supply. Timber cutting and the development of logging roads also impact an area's carrying capacity for elk.

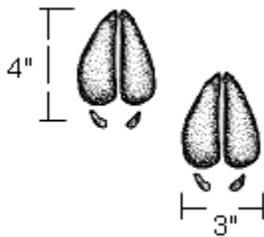
Hunting seasons: Hunting seasons on Afognak and Raspberry islands were quite liberal during years of peak elk abundance in the 1960s, but even with a bag limit of two elk, the kill never exceeded 150 animals. After the extensive die-off in the late 1960s and early 1970s, some areas were closed to hunting and a more restrictive permit hunting system was imposed. These protective measures contributed to the recovery of the elk herds and by the late 1970s, all of Afognak and Raspberry islands were again open to hunting by permit. Hunters took a record 271 elk in 1984. By the late 2000s all elk hunts on the islands were by permit only and annual harvests were typically around 100 elk.

Elk on Etolin and Zarembo Islands have been hunted for food and trophies since 1997, with a bag limit of one bull. The number of draw permits issued has increased steadily from 27 in 1997 to 175 in 2007, but harvest remained fairly stable through 2005, fluctuating between 8 and 19 bulls per year. Harvest dropped to a record low of 1 bull in 2006. Six bulls were harvested in 2007, the second lowest harvest since the area opened to hunting in 1997.

Steep terrain, heavy timber and harsh weather make Alaska elk hunting a difficult and challenging pursuit. The challenge of packing up to 700 lbs (320 kg) of meat from a remote kill site back to camp is often heightened by brown bears that may lay claim to elk meat that remains in the field.



Elk range map



Tracks

Elk hoof is larger and rounder than deer, and smaller than moose with a narrow gap within the inner hooves.



Scat

In winter, scat is dry and hard, forming elongated pellets. In summer, pellets begin to loose shape and form clumps of soft deformed pellets.

Advantages of Raising Elk

Elk raising is a viable alternative to conventional agricultural ventures today. Why would anyone not seriously consider putting acreage to use in an operation that will actually result in some black ink on their ledger, without having to go to government, and explain how some one else's support programs have made it impossible to maintain the family farm because of the cost and return ratio that won't let us make a profit.

There is no resistance from an environmental standpoint, and so no money need be spent convincing powers that be that the growth of our industry will not result in any negative impact on any of our neighbors. A non-economic benefit is the fact that because there is no need for hearings; there is no confrontation involved.

More Animals per Acre

Elk can be raised on almost any type of soil or land condition found in our province. They require considerably less area per animal (three elk can be pastured on the ground required by one beef or dairy cow) than other grass converters, and coupled with a far larger return per animal, the return per acre is significantly higher.

Greater Return on Investment

The return on investment in the elk industry surpasses that of investments, both in and outside of the agricultural arena. The income from both velvet antler production and seed stock more than offset the higher cost of the fencing and handling facilities required in raising these unique animals. The graph comparing alternatives offered by brokers and bankers, also illustrated in our brochure, indicates that raising elk yields better results, especially over the longer term. Elk are intelligent animals, fascinating to observe and very easy on the environment.

Multi Income Options

There are two main potential sources of income currently available to the average elk producer at this time. They consist of marketing seed stock to other elk growers, who either are looking to improve or increase their herds, or marketing velvet antler, to the processing industry for use in the nutraceuticals field. Buyers of the latter are from both North America, and from Asia. There are also markets available for animals, semen, and embryos as others in the industry recognize Manitoba as having superior genetic components.

Two other possibilities available as the industry matures are the hunt bull market and the meat market. Once the bulls reach maturity, and are not required for breeding purposes, the hunt ranch market is an option available in other jurisdictions, where laws allows this lucrative aspect of the industry, to cater to the strong demand that exists. The market for elk venison is very strong in areas where it has been developed. Both Quebec and Ontario are currently selling all that they can produce to markets in the northeastern United States. We are still a few years from this point, because of the strength of the seed stock market, but we are, through our national association, working on developing that potentially lucrative option. Elk venison is currently selling for \$4.00 per pound of dressed weight in those developed markets.

Sustainable Production

A catch phrase that one hears often these days is "sustainable production". Apparently it means producing indefinitely without depleting the resource. That's like maintaining the goose that laid the golden egg. We are fortunate in our industry. We already have that. We harvest the velvet from our bulls, and next year they grow another crop and the cycle starts over again.

Value Added Option

Many producers have developed another source of income from their industry. There are processors in Canada who produce the capsules from the velvet antler, and the claims of the health benefits to those who use them have resulted in a lucrative market for the product. These capsules are being sold in ever increasing numbers in health food stores, and by individuals who are able to promote the product on the basis of its benefits. The MEGA brochure lists some of the situations, which the capsules are used for.

Minimal Management

One of the greatest advantages we find in raising these animals is the economy of feed requirement involved. Elk are excellent converters of food, and can efficiently use roughage throughout the year. Their metabolism adjusts with the seasons, so their low consumption of winter feed, coupled with the ability to utilize snow for water requirements, result in a low cost, minimal management operation.

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ELK FENCING GUIDELINES

In accordance with AS 03.05.075, the Department may issue an Elk Farming License for the raising of Elk to a person who “possesses facilities for maintaining the Elk under positive control.”

STANDARDS FOR POSITIVE CONTROL – A physical barrier must be provided to prevent Elk from escaping from a licensed Elk farm and to exclude wild ungulates. Perimeter fencing on an Elk farm must be constructed and maintained using adequate materials and workmanship strong enough to withstand animal impacts and tall enough to preclude escape by jumping.

The applicant shall construct the fence using the standards provided or submit an alternate fence design as described in Section H. *The applicant must obtain written approval for any alternate design prior to construction of the fence.*

The Elk Farm license holder is ultimately responsible for confining the Elk on the farm, and inspection and acceptance of any fence design does not relieve the license holder from this responsibility. The completed perimeter fence must be inspected and approved by a representative of the Alaska Department of Natural Resources before an Elk farming license will be issued. The license holder will grant the Alaska Department Natural Resources permission to enter the property for the purpose of periodic inspections of the perimeter fence, as necessary. It is recommended that facilities for handling, restraining and testing Elk be constructed prior to obtaining animals in addition to the required perimeter fencing.

DEFINITIONS

Elk – An animal of the following subspecies of *Cervus elaphus*, which are indigenous to North

America: *C.e. nelsoni*, *C. e. canadensis*, *C. e. roosevelti*, and *C. e. nannodes*.

Elk Farming – The raising and breeding of Elk as domestic livestock for commercial purposes, including the sale of meat, by a person who holds a

current valid Elk farming license. This includes the lawful possession, purchase, sale, import, export of live animals, as well as the sale of meat and other byproducts of the animals.

Positive Control – A barrier, either constructed or natural, which confines Elk on the licensed Elk farm and excludes wild ungulates. A constructed barrier is considered to be a perimeter fence or other permanent structure designed to restrict the movement of Elk. A natural barrier may include a cliff or other impediment, which restricts the passage of Elk. However, unfenced waterbodies may not be adequate barriers for containing Elk.

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Perimeter Fence – A fence, approved by ADNR that provides confinement of Elk on the Elk farm held under an Elk farming license, prevents Elk from escaping confinement, and excludes wild ungulates.

FENCE STANDARDS

Perimeter Fence – The perimeter fence on a licensed Elk farm must be designed and constructed to meet the following minimum requirements.

A) General - The perimeter fence must be designed and constructed to insure the confinement of all Elk on the farm and to exclude other domestic livestock or wild ungulates. The licensee to insure that the standards are maintained must inspect it periodically. The fence corridor must be bladed smooth with gradual changes in elevation to allow for a tight fit of the fence to the matching terrain. There must be no steep embankments adjacent to the fence on either side that would allow an animal to gain an increased height in relation to the overall fence height. Trees on either side of the fence right-of-way that are likely to pose a hazard to the fence will be removed. Low spots that create gaps under the fence wire will be filled or blocked to prevent stock from escaping and prevent ungulates from entering the enclosure. The fence should be constructed and installed in accordance with manufacturers recommendations and fence industry standards for workmanship.

B) Fence Configuration – the fence must extend a minimum of eight (8) feet above ground level. Preferred: high tensile woven wire game fencing specifically designed for confinement of ungulates, 96-inches in height. Other materials may be considered for construction as described in Section H. In regions of the state with heavy snowfall, it may be necessary to increase the height of the fence to allow for buildup of compacted snow in the winter.

C) Minimum Wire Gauge – 12 ½ gauge galvanized.

D) Posts - Posts used in fence construction must be stout enough to securely support the wire in the given soil conditions and maintain proper tension on the wire. Line posts must have a

4” minimum diameter, if wood, and a 2 3/8” minimum diameter if steel drill pipe, 3” minimum diameter if steel pipe. The portion of the wood post in contact with the ground must be treated to prevent rot. The line posts must be a minimum of 12 ft. in length with 4 ft. buried in the ground. Corner posts must be enlarged, anchored, and/or braced to provide solid construction. The maximum spacing between line posts shall be:

- 1) 25 feet, if high tensile wire is used
- 2) 15 feet, if conventional wire is used
- 3) 60 feet, if 10 ft. steel “T” posts are spaced every 15 feet between the line posts.

Closer line post spacing, additional posts or other measures, may be necessary to allow for uneven ground topography, unstable soil conditions, or heavy animal pressure. Bracing is recommended on both sides of water gaps, at corners approaching 90°, and at bases and ridge-tops of steep slopes. Corner posts must be enlarged, anchored, and/or braced to provide solid construction.

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E) Fasteners – The fence must be attached to the posts by securing the horizontal wires to the posts, preferably on the inside (enclosure side). If wooden posts are used, the top 3 wires of the woven fence must be stapled to the posts. Thereafter, alternating wires must be stapled.

F) For steel posts, the fence must be attached by a wire tie (no less than 12 ½ ga., 9 ga. Wire tie required for 2 3/8” steel drill stem) attached at both ends to a horizontal fence wire and encircling the post. The wire ties must be tightened sufficiently to prevent the fence from moving vertically. Beginning with the top wire, alternating wires must be secured for the top half of the fence. For the bottom half of the fence, at least one horizontal wire per foot of vertical fence must be secured, including the bottom wire.

G) Gates – Gate construction must meet or exceed the confinement standards of the adjoining fence. Each gate must have a secure means of latching and a means of padlocking for security. Posts on both sides of gate openings must be braced; H – braces are recommended.

H) Alternative Design – An applicant may propose an alternate design for fence construction.

Alternative designs must be submitted with drawings and construction standards *with documentation demonstrating the successful use of the design in similar circumstances*. The Department of Natural Resources will review the proposed design and will grant approval for construction if the fence design meets or exceeds the standards required for confinement. The applicant must receive written approval for an alternate fence design from the Director of the Division of Agriculture, ADNR, prior to construction.

Elk meat market

Bison, elk and yak among latest flavors

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LAZY MOUNTAIN -- Down a muddy lane on Todd Pettit's 600-acre Pitchfork Ranch near Palmer stands a herd of bison 65 strong.

It's mid-April, but already mosquitoes swirl around their massive heads. They utter soft "woofs" as their leader, a 2,000-pound behemoth named Rumble, swaggers forward to eye a visitor.

These animals are meant for more than life as tourist attractions. Pettit is one of a dedicated band of Alaska farmers raising sometimes-exotic breeds for meat, breeds that include bison, elk and even yak.

It's no easy way to make a living -- high, sturdy fences and the ability to run fast are a must. But ranchers from Kenai to Kodiak to the Mat-Su say they have found eager customers drawn by the health benefits of leaner meat and a desire to eat locally produced food.

"It's kind of taking off," said Ruby Hollembaek, head of the Alaska Diversified Livestock Association. The group represents about 30 farmers statewide who offer products ranging from bison fur scarves to elk sausage.

Hollembaek said she's seen steady growth in the industry over the past decade as farmers have turned from raising cows and pigs to bison and elk.

She and her husband run a 2,000-acre farm near Delta Junction where, after years of raising cattle and swine, they bought their first bison in 1994. At the time, they were looking for something cheaper to feed than cattle, she said.

Now their herds run to 300 bison and 30 elk, which they sell for meat and for on-site hunts that can cost as much as \$3,700 a pop. The hunts in particular have proved popular; this winter, the couple had to turn clients away, she said.

'YAK ATTACK'

Just a few miles away from the Hollembaeks' place is the 8,000-acre Sawmill Creek Ranch, home to a herd of 100 yak. These shaggy beasts, which look a bit like walking

carpets, are native to Tibet and Nepal and historically serve as pack animals and sources of milk. Yak are big-boned animals with short, angular bodies and weigh as much as 800 pounds. They are typically more docile than bison or elk.

Ruth and Richard Karr started Sawmill Creek Ranch 15 years ago after Richard left the Army. He knew he wanted to farm, and she happened to see a picture of a yak in a book.

"I said, 'Look at these yaks. ... You should look about that,' " Ruth Karr said.

Mary Kaspari of Delta Junction, a nurse, began working at the ranch last year. She said she's sold more than two dozen yak through word of mouth to people in Anchorage, Wasilla and even Hawaii.

Some say they just want to say they've tried it. But many like the health benefits of eating meat that is high in protein but low in cholesterol and fat, Kaspari said.

Her line of work provokes a few laughs. "They called me Mary Mack with the yak attack," she said.

Kaspari, who enjoys yak burger soup and yak lasagna, said yak meat has a "lighter, sweeter flavor" than beef, but isn't gamy like moose. The price for ground yak is also fairly competitive at \$3 a pound.

Yet cooking yak isn't quite as easy as slapping a hamburger on the barbecue. Because of its low fat content, the meat, particularly the steaks, needs special care in the cooking, she said.

Overcook a yak steak, and "you can make a wallet out of it," she said.

EAT LOCAL

Hollembaek said Alaska's exotic meat ranchers benefit from a nationwide movement to eat local. The movement stresses eating food produced nearby over grocery-store fare that sometimes has been shipped from thousands of miles away.

Even those clients who hunt on her farm, including those from the Lower 48, say they like that they saw the animal and knew it was healthy, she said.

"They want to see what the animal looks like on the hoof," she said. "They want to make sure it's a clean animal, not sickly."

The local angle is a draw for Mimi Peabody, who lives just four miles from Pettit's farm. She started buying bison from him four years ago after trying locally raised beef. But taste is important too.

A former vegetarian, Peabody said bison burgers are her new comfort food and bison is a regular centerpiece on her dinner table. One Sunday in late April, she and her husband, Will, sat down to plates of barbecued bison ribs steeped in stout and a mashed medley of potatoes, rutabagas and parsnips pulled from her root cellar.

"Quite honestly, I think that the bison is probably the very best red meat I've eaten," she said. "It just has a quality about it. It just has some depth, some flavor."

Taste aside, raising bison and elk has decided advantages over raising cattle. They are far more efficient eaters -- digging up twigs, grass and other browse on their own. And these animals process their hay and grain much more efficiently than cows.

Pettit said his bison eat about 1,000 pounds of hay a day in winter, about half the amount the same number of cattle would eat.

Yet raising animals like bison and elk is clearly not for everyone. For one, there's the matter of keeping them penned in.

Six feet tall, Pettit is a soft-spoken man with a linebacker's build. A thin, crescent-shaped scar graces his cheek, the remains of massive facial reconstruction he underwent after being kicked by a thoroughbred mare. His grandparents built Pitchfork Ranch from scratch after settling the land in 1954.

He started with five bison calves in 1998 after years of working cattle. Six-foot-high wire fence anchored with posts of steel pipe keeps the bison penned; an 8-foot-high fence serves for the elk. And even that sometimes isn't enough to contain the skittish animals.

RUMBLE'S ROAR

Rumble, Pettit's lead bull, for example, once tossed a lesser bull end over horns over a 6-foot fence for challenging his authority. And he doesn't exactly submit to being herded. His roar alone is intimidating, Pettit said.

"The first time I heard it, I looked up for the jet," he said. "You feel it in your chest. It's like a lion. It's unearthly."

Kramer, Pettit's bull elk, can also be a troublemaker. He'll eat from Pettit's hand one moment and try to skewer him on his antlers the next.

"I haven't been hit by them, but I've had some very up close and personal issues," Pettit said.

While the farmers said business has been good, they don't see the market for bison and elk growing all that fast, in part because of the limited number of people with the space and ability to deal with the animals.

Another limiting factor for now is that few opportunities exist for consumers to purchase Alaska-raised bison or elk at local grocers or farmers' markets, Hollembaek said.

Federal rules require meat from animals sold to the public to be killed at certified slaughtering facilities. Yak will submit to being trailered, but elk, bison and musk ox typically do not take well to being moved on anything but their own four feet, she said.

"They get stressed and the hormones get flying and it compromises the quality of the meat," Pettit said.

Instead, customers, like those who buy from Pettit and Hollembaek, have to buy the animal, or part of it, then have it butchered on the farm.

Based on his own experience, Pettit said, he thinks there's room for more ranchers in this business. After ranching for seven years without advertising, he got his first cold calls last year, and had to turn away another 10 people who wanted bison meat, he said.

"I think you could be as big as you wanted to be right now," he said.