Alberta

When early Europeans entered what was to become Alberta's East Slope around the turn of the nineteenth century they viewed a spectacular panorama of foothills and mountains capable of a high level of wildlife production. The presence of sheep in large numbers, especially in areas where warm winter winds characterized the climate, must have been an impressive sight. While it is unlikely that early explorers like Peter Fidler (1792) and David Thompson (1800) recognized it, the longest stretch of almost continuous bighorn sheep habitat ever found in one political jurisdiction depended on its ecological ties with the river valleys and prairie-to-mountain habitat transition. At the same time, they could not have foreseen the changes that they, by their very presence, were initiating. Until that time in history sheep populations had been confined in numbers and distribution by natural forces, particularly predation by wolves.

VALERIUS GEIST

A 'cirque' or high mountain basin at the head of Misty Creek, Alberta. Areas like this are often favored as feeding areas by bighorn sheep.

Rams such as these near Hinton, Alberta, epitomize Rocky Mountain bighorns.

DALE E. TOWELL

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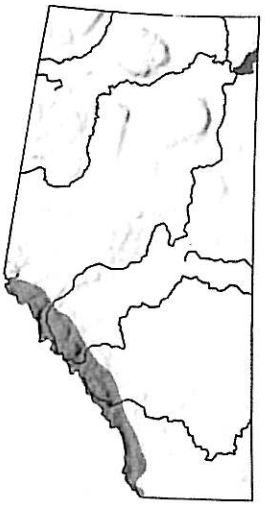


But change came quickly as Europeans invaded the area, bringing their firearms and trading them to native Canadians. By the 1880s there were still only 1,500 Europeans in what was to become Alberta, but they had already begun to occupy the foothills and all major passes through the Rocky Mountains. Bighorn sheep on winter-spring ranges were highly vulnerable, and white and native hunters exploited them for subsistence and commercial use. In the next 30 years immigration exploded. Alberta's population expanded to include almost 500,000 Europeans; 264 coal mines were in existence by 1914, and timber, oil, and gas were flowing from the mountains. Work crews were fed on wild game; bighorn sheep populations were decimated. The world record bighorn was shot under these circumstances. Fred Weiler was a meat hunter for early oil exploration crews drilling in what is now Waterton Lakes National Park. In 1911 he shot, perhaps within the same park, what later became known as the famous Baird head. There were no limits on bighorn sheep kill until 1883; then a limit of six per year existed until 1898. Between 1899 and 1900 the legal kill was three per year.

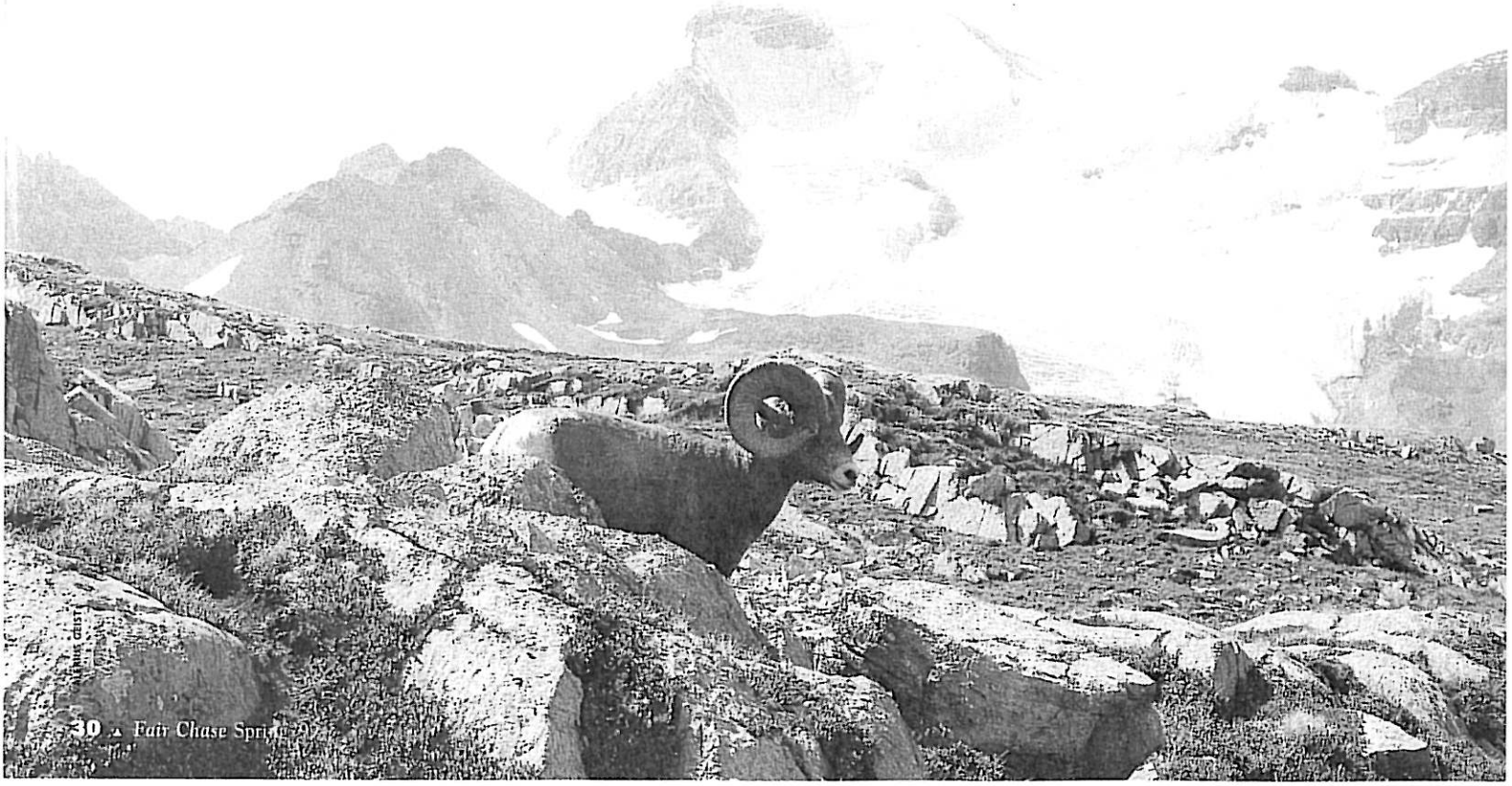
In retrospect, it is likely that entire subpopulations of bighorns with unique and traditional knowledge of winter ranges and movement corridors were eradicated, severely curtailing the gene pool of surviving sheep. It was only the first bottleneck bighorn populations would endure at the hands of man. Today, Alberta bighorns have a very low level of genetic variation when compared with Rocky Mountain bighorn sheep populations in Montana, Idaho, Wyoming, and Colorado.

While critical low elevation ranges extending eastward from the Rocky Mountains were lost forever, as were the exceptional ecological phenomena associated with movements to and from those ranges, summer and fall ranges in the heart of the Rockies remained intact. We do not know if sheep wintered at high elevations historically. But the loss of low elevation and most eastern ranges could have produced today's high-elevation wintering populations of low productivity. Despite claims to the contrary, it is only a remote possibility that bighorn populations have recovered to historical abundance in Alberta after their depletion at the turn of the century.

Estimates of the size of bighorn populations have been unsound: they suffer from lack of consistency in methods, from lack of correction for sightability, typically are statistically unreliable, and have been divorced from the reality of sheep movements (issues we know have a significant bearing on the results.) Thus reported recovery of sheep numbers and estimates of population size reflecting that recovery must be viewed with skepticism. Pre- European numbers probably exceeded 10,000 sheep, and may have periodically reached 20,000, but by the early 1900s mere remnants of these once vast populations remained. Based on the opinions of hunters and guides it was estimated that as few as 1,775 sheep existed in Alberta in 1915. The Alberta Game Act was passed in 1907 and licenses were required as of 1909. Yet bag limits remained at two of either sex between 1909 and 1922, after which legal sport kill (as opposed to native kill) was restricted to males until 1966. A minimum 3/4 curl regulation for males was introduced in 1956; it was increased to 4/5 curl in 1968.

Still, it is highly probable that populations did recover above early 1900 levels. They did so because conservationists

High alpine summer habitat of Rocky Mountain bighorn sheep in northern Jasper National Park, Alberta. Some sheep even winter on these high-elevation wind swept ranges.



and hunters recognized that unrestricted commercial and native hunting had wrought catastrophic consequences on Alberta's bighorn sheep. They had been "forced to the conclusion that the time had passed when wild game was a legitimate part of our food supply"...a "cold, hard, inexorable fact" as recorded by Vreeland in 1916. Population recovery also came at a big cost in biodiversity of wildlife, for wolves were exterminated in southern Alberta and grizzly bears and mountain lions reduced to populations of questionable viability. Sheep populations recovered because habitat, while lost adjacent to the prairies, still remained in unfragmented core areas in the heart of the Rocky Mountains. This habitat still had a significant capacity to produce sheep.

Furthermore, insight and vision had prevailed on some critical areas. Rocky Mountain Park, later to become Banff National Park, was established in 1885; Yoho National Park followed in 1886; Jasper National park in 1907; and Kootenay National Park in 1920. While sheep populations in these parks had not escaped man's early impact, the habitat had remained secure. However, complicating the status of sheep populations in these parks was a provincial management strategy that "milked" trans-boundary sheep populations. Other populations suffered heavy mortality from road and railroad kills; one has been exterminated by road expansion in Banff National Park. Others were depleted or lost during die offs that affected herds in the general region. Even in national parks there are large areas void of bighorns where they were once seen in abundance.

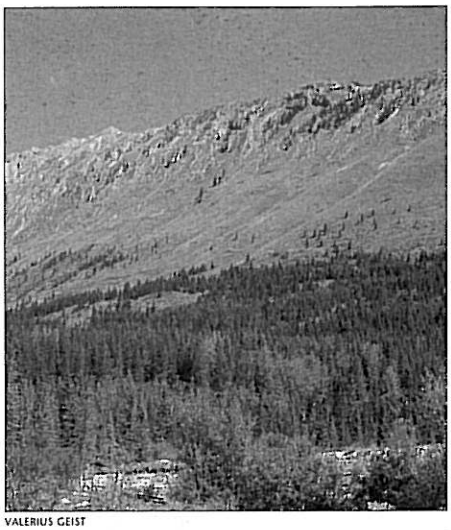
Although Alberta's hunting and conservation community had repelled the doom of commercial and unregulated hunting, these dangers would reappear almost a century later. But before that, a new threat arrived: domestic livestock. Cattle were exploiting every valley in the Rocky Mountains by the turn of the century. They were followed by large numbers of domestic sheep. This invasion led to contacts that resulted in respiratory diseases and catastrophic mortality among bighorns. By the early 1940s bighorn sheep, whose numbers are speculated to have recovered to somewhere around 4,000 animals, were dying in large numbers in southern Alberta. That die-off led to the closure of hunting seasons.

Coincident with the invasion of bighorn habitat by domestic sheep were major forest fires in the 1930s that burned almost all of Alberta's forested foothills. While this was a natural process essential to ecological renewal and was undoubtedly beneficial to bighorn sheep, it resulted in heightened fire control activity of the Alberta Forest Service. It led to the construction of the Forest Trunk Road through the length and heart of the Rocky Mountains. Begun in 1948 and officially completed in 1963, this road impacted Alberta's sheep country in a way that lasts to this day. Regulatory changes compounded the impact of road access as in 1946 the Game Act recognized the right of aboriginal people to hunt year long on occupied public lands.

Where before horse or foot travel was the only means of access, now anybody could drive into sheep country in a day or less. Aboriginal Canadians exploited roads to kill entire bands of bighorns. Some areas were permanently abandoned by sheep. Widespread demand for sheep hunting led the Alberta Fish and Wildlife Division to try and manage sheep to maximize total kill. In 1966 hunting of females was introduced. It was hoped, among other wishes, that this would alleviate mass die-offs of sheep, but it did not. They happened again in the 1980s in southern Alberta.

Alberta's sheep managers have not been very successful in stemming the threats to habitat integrity. This inability has a historic basis going back to 1930, when public land devolved from federal to provincial control. When the Fish and Wildlife Division took control of game management in the late 1940s the utilitarian interests of agriculture, timber, oil, and gas had established their claim to wildlife habitat under Forest Service control. The ability of the Fish and Wildlife Division to protect habitat is frequently frustrated by various claims to the land, including the development of Olympic ski facilities or mining developments. The bio-cultural storehouse of knowledge of the remaining free ranging bighorn sheep continues to be threatened, as these populations rate low priority compared to various commercial uses of public lands.

Today, with bighorn sheep numbers estimated at 5,000-8,000, sheep management continues to push the limits of sound scientific management and habitat protection as managers attempt to cope with intense industrial and recreational demands on public resources. One contentious issue among residents is the auction of hunting permits by the Alberta government. Through this process, a few wealthy individuals may be allowed opportunities denied to others, such as hunting after traditional seasons have been closed and hunting when bighorns are concentrated on rutting ranges and most vulnerable. Perhaps most seriously, the present management course fails to control historic impacts on sheep (i.e. depleting genetic and cultural variation) and the ecosystems they depend upon. And after 125 years of increasing human impact, the province still has no habitat protection legislation based on what seems fundamental to the future: designated threshold levels for human activity in mountain and foothill ecosystems. ▲▲▲



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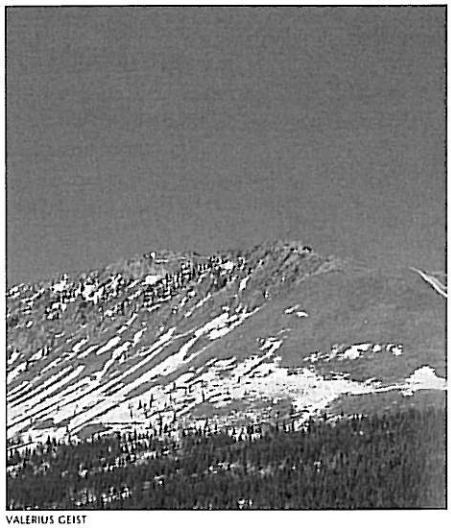

VALERIUS GEIST

Chinook winds are critical to the survival of wild sheep ranges in parts of the northern Rocky Mountains. The Palliser Range of Banff National Park, Alberta, is shown here in summer (above) and in winter (below), when cleared of snow by warm Chinook winds.