

# Wood Bison—*Bison bison athabasca*

Source Conservation Comment No. 125

The wood bison is a huge, dark, woolly-coated and cloven-hoofed mammal. It has massive humped shoulders, low slung head and slim, tapering hindquarters. Wood bison differ only in details from the plains bison, being slightly larger, darker and woollier. A mature wood bison bull may weigh one tonne.

Samuel Hearne, one of the earliest explorers of Canada's northlands, was likely the first European to see a wood bison. On his journey from Fort Prince of Wales (Churchill, Manitoba) to the mouth of the Coppermine River and back, Hearne passed through what may have been the centre of the wood bison population at that time. On his return trip from the north, he crossed Great Slave Lake and recorded wood bison sightings on January 9, 1772.

*The buffalo in these parts, I think are in general much larger than the English black cattle . . . the horns are short,*

*black and almost straight, but very thick at the roots or base . . . The head of an old bull is of a great size and weight indeed; some of which I have seen were so large, that I could not without difficulty lift them from the ground . . .*

Apparently, total populations of wood bison were never large when compared to those of the plains bison, and were distributed unevenly throughout their range. Estimates of their numbers vary considerably in the accounts of explorers and traders passing through the area, in 1772, Hearne described them as "very plentiful" in the area of Slave River, while Alexander MacKenzie reported in 1789, that wood bison were "reasonably numerous in the country from the MacKenzie River and Horn River".

There appears to have been no serious decline in wood bison numbers before 1860-65. Before that time the population may have dwindled slowly, but it was still likely a fair

representation of historical numbers, somewhere in the neighborhood of 165,000 animals. However, by 1875 the wood bison was virtually eliminated throughout much of its former range and in 1888 the total population of wood bison was estimated at between 500 and 600 animals.

It is difficult to determine the exact cause of the rapid decline in the wood bison population. Hunting certainly played an important role, but it is difficult to imagine how the handful of hunters and explorers in that remote area of northern Canada at the time could have wiped out almost an entire population, especially when it was scattered over such a vast territory. However, there was little question in the mind of Ernest Thompson Seton in 1886 when he wrote:

*What destroyed them in that short interval? The answer is not difficult to seek — deep snow! . . . During one winter of exceptionally deep snow, eighty buffaloes were killed in the vicinity of Dunvegan. The Indians ran them into the snow drifts and then dispatched them with knives.*

Adverse winter weather conditions can be devastating. Freezing rain or deep snow can effectively separate animals from the food source beneath. Wild populations can be seriously affected if such conditions are sufficiently widespread. For whatever reason, wood bison soon all but disappeared.

In 1893, legislation was passed by the Dominion of Canada to protect the surviving wood bison population and in 1897 enforcement of the law was placed under the jurisdiction of the Northwest Mounted Police. Apparently, the wood bison responded well to the protective measures and numbers slowly began to increase.


Six Buffalo Rangers were appointed to patrol the range in 1911. By 1922, when the area was designated as Wood Buffalo Park, there were approximately 1500 wood bison in the area. Their survival appeared secure.

It was at this point, however, that the wood bison and plains bison which had lived apart for centuries

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would soon find themselves together, By 1921 the herd of plains bison at Wainwright, Alberta had grown to more than 4600 animals and was increasing at the rate of 25% per year. Overgrazing of their range was an imminent danger. Despite the selective slaughter of over 2400 bison between 1921 and 1924, by 1925 the population topped 10,000. In desperation, the Department of the Interior decided to embark on a long range plan to relocate the surplus plains bison to Wood Buffalo Park, despite the warnings of several naturalists and zoologists.

The officials involved, however, believed that there were not two subspecies of bison. They thought that there were only superficial differences between plains and wood bison resulting from environment. If plains bison were released in Wood Buffalo Park, they too would soon come to

look like wood bison due to climate and diet related factors.

Between 1925 and 1928, nearly 7000 plains bison were relocated to Wood Buffalo Park, and the officials were proven wrong. The seeds of destruction were sown — within two decades the wood bison was considered extinct through genetic dilution. As some had predicted, the two subspecies readily interbred and the diseases anthrax, brucellosis and tuberculosis, previously unknown among the wood bison, ravaged the park. (The problem of disease continues to this time.)

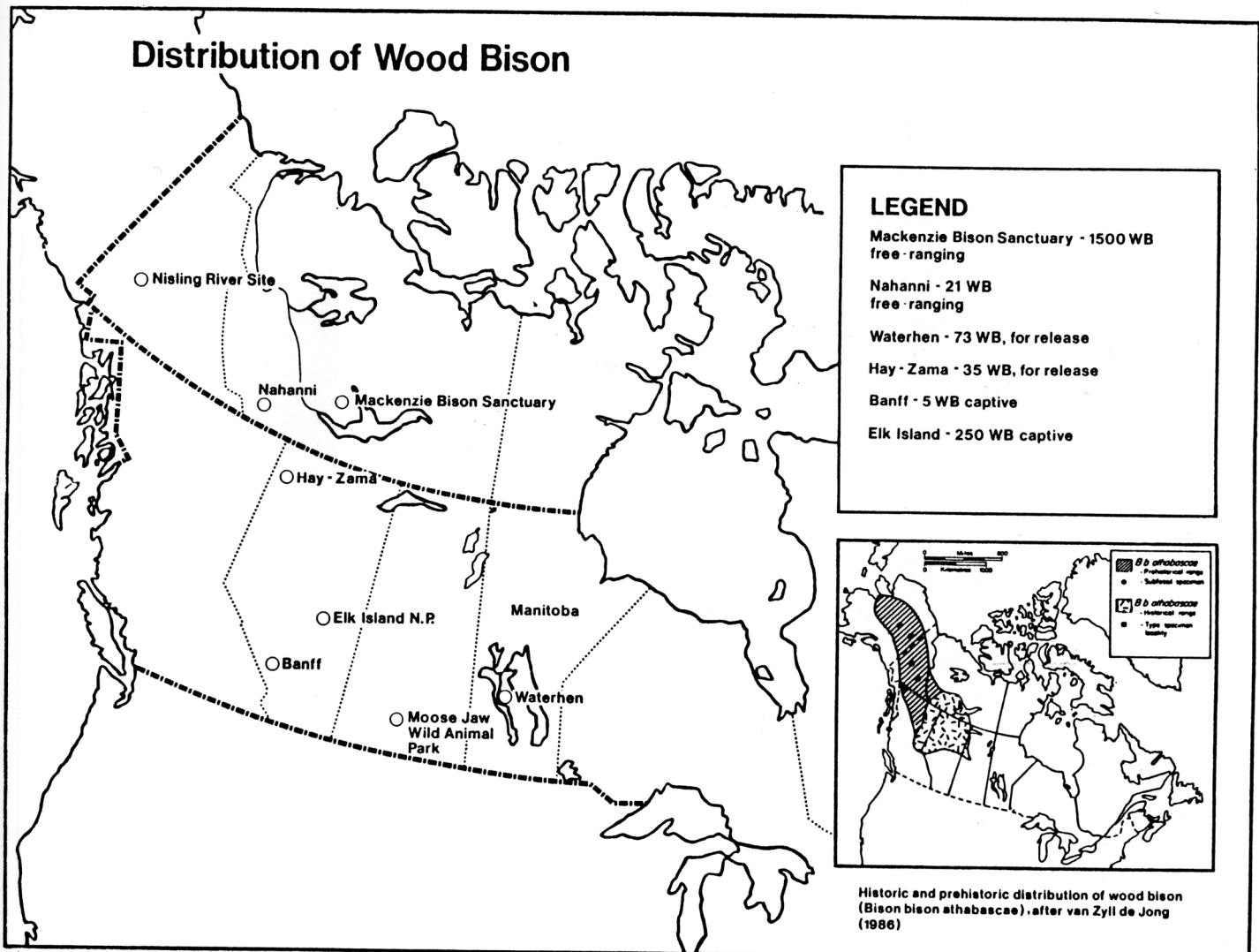
Some zoologists believed in the late 1950's, however, that groups of pure healthy wood bison could still exist in remote areas of the park. It was speculated that these groups were so isolated by natural topographic barriers such as muskeg, swamp and rough terrain that they

would not have come in contact with the introduced plains bison.

In 1957, a Canadian Wildlife Service biologist, while flying a survey in the Nyarling River and Buffalo Lake region of Wood Buffalo Park, spotted a herd of bison. Due to the remoteness of the area and his preconceived notion of the continued presence of wood bison in some isolated regions, he speculated that they could be pure wood bison. From specimens collected in 1959, the National Museum of Canada confirmed his theory.

In the early 1960's the remaining wood bison were threatened again, this time by an outbreak of anthrax in the park. Consequently, in 1963, 18 wood bison were relocated to what is now the MacKenzie Bison Sanctuary in the Northwest Territories. Through protection as an endangered species, the herd prospered

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and now numbers in excess of 1500 animals.

To further ensure the preservation of the species, 23 wood bison were relocated in 1965 to Elk Island National Park in Alberta.

Wood bison conservation efforts were renewed with vigour in the mid 1970's when wood bison were classed as an endangered species and recognized as such by the International Union for the Conservation of Nature, the Convention on International Trade in Endangered Species, and the Committee on the Status of Endangered Wildlife in Canada.

The efforts of a federal-provincial committee for the preservation of wood bison met with remarkable success from the mid 1970's into the 1980's. A rehabilitation program for the wood bison was devised and quickly implemented.

Essentially, the objectives of the program were to establish at least three and preferably five free-ranging herds of wood bison. The program also provided for the distribution of small breeding herds to zoological parks and gardens in order to preserve the wood bison gene pool.

The dramatic success of the relocation of wood bison from Wood Buffalo National Park to the MacKenzie Bison Sanctuary created the illusion that further relocations would be easy. An attempt to relocate wood bison to Jasper National Park, however, failed. The Canadian Wildlife Service biologist involved found that despite the apparent suitability of habitat and its historical record of use, newly transplanted animals may not remain near the release site. Random movements of released animals could result in travels encompassing hundreds of kilometres through unfamiliar and unsuitable habitat.

The planned relocation to Jasper National Park had to be abandoned. Even though suitable habitat was present, the main herd travelled in excess of 150 kilometres during the first month following release from its temporary holding corral. The animals traversed rugged mountainous terrain and eventually ended up in an area of agricultural development outside the boundaries of Jasper National Park. They had to be

rounded up and returned to Elk Island National Park.

A relocation of wood bison to the Nahanni District of the Northwest Territories in 1980, however, was highly successful. The original 28 animals splintered into different groups, with one group moving south into British Columbia, but successful negotiations with the Government of British Columbia enabled the wood bison to remain in that province.

### **Waterhen Wood Bison Project**

Efforts to preserve wood bison were extended to Manitoba in the early 1980's. Although it is uncertain that the wood bison was ever present in Manitoba due to the lack of historical evidence, the habitat in the northern Interlake area of the province appeared suitable for them. The plan was to establish a captive breeding herd in this area and release only the young born on site into the wild. This would maximize the chances of the wild herd remaining near the release area, hopefully roaming sufficiently northward from agricultural areas. A site for the project was selected near Waterhen Lake.

The habitat near Waterhen Lake appeared suitable for wood bison and sufficiently removed from intensive

agricultural development. The other aspect of the site that would later prove to be invaluable, was its proximity to the Waterhen Indian Band. The enthusiasm for the project and the dedication of various Band members was tremendous, and it was the Band that took the lead role in making the plan a reality.

A management corporation was established by the Waterhen Band to oversee daily operations and the development of the site, assisted by Manitoba Natural Resources Wildlife Branch staff and the Canadian Wildlife Service. The Wood Bison Re-Establishment Foundation was incorporated to ensure long term funding for the project, while the Manitoba Jobs Funds, the Canada-Manitoba Northern Development Agreement, the Canadian Wildlife Federation, and others supplied initial funding to develop the site. International recognition came to the project with the participation of His Serene Highness, Prince Albert of Monaco, as an official patron.

Through the fall and long, cold winter months of 1983-84 work began to enclose some three square miles with a sturdy six-foot wire fence to

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hold the captive breeding herd. By February 1984 one square mile had been enclosed and the first shipment of 34 wood bison arrived in their new home. They were surplus stock from various zoos in western Canada, used to a comfortable life and ample food. In June of 1984 eleven calves were born on the site and all but one survived.

During the winter of 1984-85, the three square mile enclosure was completed and the entire area was available to the wood bison. The following summer only three calves were born, a disappointing turn of events that had biologists puzzled and concerned. Was the range not nutritional enough? Were essential trace minerals such as selenium lacking in this area? Had biting insects (plagues of bulldogs and horseflies) inhibited breeding? Were there too many bulls in the herd relative to cows, resulting in disruptive competition between bulls and few cows being successfully bred? These and other questions were difficult to answer.

Fortunately, eleven calves were successfully born in 1986, putting some of these questions to rest. In the winter of 1987, supplemental feed was provided to ensure the animals were well nourished, and 25 calves were born in the spring of 1988.

By June of 1988, there were 15 healthy young bison born on site that were ready for release to the wild. Contingency plans were drawn up to deal with potential problems, such as a long trek towards agricultural lands, and radio tracking devices were fitted onto the animals to monitor their movements.

On June 10, 1988 15 wood bison were given their freedom. They remained in the vicinity of the release site for several weeks, but then moved south towards an agricultural area. By the end of the summer the bison had been rounded up and returned to the enclosure. Disappointing though it was, much was learned from this first effort. It is hoped that a new release can take place in the spring of 1989 with plans in readiness to encourage the bison to roam northwards into undeveloped areas.

### The Road Ahead

The introduction of wood bison to Manitoba and the increasing

prosperity of commercial plains bison ranches is a conservation success story. Display herds in parks and zoos, as well as truly wild herds of wood bison enrich our wildlife heritage.

The concern for both plains and wood bison that exists among some conservationists is the likelihood of hybridization and selective breeding that may occur as bison are increasingly raised for meat. It is important that genetically pure wood bison and plains bison continue to be maintained in zoos, semi-captive herds and in the wild if future generations are to see the descendants of the bison that once captured the imagination of early explorers.

**EDITOR'S NOTE:** The wood bison was upgraded from the Endangered Species List to the Threatened Species List in 1989. Provincial and territory governments share with the federal government responsibility for their rehabilitation.

Wolves are common in the Wood Buffalo Park but appear to have had minimal impact on population growth. The animals have not contracted tuberculosis nor brucellosis, although officials feel it just a matter of time before they become infected. A limited and controlled harvest of 20 bulls was permitted for the first time in 1987 from the MacKenzie population.

Animals are transferred according to the terms of a lease agreement whereby the federal government retains ownership of all wood bison and their progeny. Breeding stock has not been made available to private or commercial enterprises because of problems associated with record keeping and the lack of capability to meet the expected demand.

In June 1989, the first wood bison were sold to private bison breeders and two massive wood bison bulls were slaughtered for the commercial meat market. The event marked a milestone in the conservation story of the bison. It took the concern and effort of the Manitoba Natural Resources Wildlife Branch staff and the members of the Waterhen Indian Band to make the project a success. The demand for the big shaggies far exceeds the supply at this time and currently the Canadian government

restricts the sale of wood bison to within Canada.

### Canadian Health & Slaughter Requirements for Bison

- Bison are classified as wild or domestic depending on the province or territory in which they are raised.
- Agriculture Canada has a Captive Wild Ungulate program. Under this program, all bison and cervidae that are farmed commercially are required to be tested for bovine brucellosis and tuberculosis. Any bison that is classified as a reactor for either of the two above diseases is ordered slaughtered. The owner is awarded market value compensation. Tissues are collected at slaughter and if field strain *Brucella abortus* or *Mycobacterium bovis* is isolated, the herd is ordered slaughtered and compensation is awarded to the owner.
- In order for bison carcasses to be eligible for export or move in interprovincial tract, the animals must be slaughtered in an establishment under federal inspection.
- The regulation of bison ranching is under the jurisdiction of the provincial and territorial governments.

Source: E. Broughton, DVM, MS

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