CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

Other proposals

A. Proposal

Transfer the Wood Bison (*Bison bison athabascae*) from Appendix I to Appendix II in Accordance with Annex 4, Paragraph B.2.b of Resolution Conf. 9.24.

B. Proponent

Canada

C. Supporting Statement

(Please note: Much of the information in the following sections is derived from research and management activities undertaken as part of a wood bison recovery program conducted by Canadian federal, provincial and territorial governments.)

1. Taxonomy

1.1	Class:	Mammalia
1.2	Order:	Artiodactyla
1.3	Family:	Bovidae
1.4	Species:	*Bison bison athabascae* (Rhoads 1898)
1.5	Scientific synonyms:	*Bos bison athabascae* (Jones *et al.*, 1992)
1.6	Common names:	English: Wood bison, wood buffalo French: Bison de bois, bison des foret Spanish: Bisonte americano de bosque German: Waldbison
1.7	Code numbers:	A - 119.009.001.001

2. Biological Parameters

2.1 Distribution. The wood or northern forest bison is endemic to Canada. Its historical distribution largely coincided with the "interior plains" physiographic region of northwestern North America. When first encountered by Europeans in the late 18th century, the wood bison occurred in what is now northwestern Saskatchewan, northern Alberta, northeastern British Columbia, and the southwestern Northwest Territories, an area of about 820,000 km^2. Its prehistoric range extended into the Yukon Territory and Alaska, encompassing about 1.8 million km^2 (Fig. 1)(Gates *et al.*, 1992).

Today the wood bison's distribution in the wild is much reduced, consisting of separate herds of varying size scattered across its former range (Fig. 2).

2.2 Habitat availability. The wood bison's habitat consists of meadows and prairies, as the animal is primarily a grazer and needs access to grasses and sedges growing on alkaline soils (Reynolds *et al.*, 1982). This grassland habitat is interspersed among tracts of coniferous and aspen forests and represents 5 to 20 percent of the land area. The wood bison eats sedges in winter and sedges, grasses, and shrubs in summer and fall (Reynolds and Hawley, 1987; Larter and Gates, 1991). The bison changes pastures seasonally to obtain this diet and moves over large tracts of land if able to range freely.

Gates *et al.* (1992) estimated that approximately 34 percent of the wood bison's original historical range (Fig. 1) is no longer available for recovery

because of agricultural and urban development, particularly in northern Alberta and British Columbia. A further 27 percent is temporarily unavailable because of the presence of diseases endemic in several wild herds (described in section 2.7). This leaves about 39 percent of the historical range currently available for bison recovery, an area of about 320,000 km^2 (Gates *et al.,* 1992). If the diseases can be eradicated as planned (section 4.2.2), much high-quality habitat will become available in the Peace-Athabasca Delta and the Slave River Lowlands, where vast open meadows occur within the white spruce (*Picea glauca)* forest (Reynolds *et al.,* 1982).

The quality of some available habitat is deteriorating because of shrub encroachment attributed to fire and flood prevention. Management plans call for prescribed burning to restore grasses on pastures used by the Mackenzie, Hook Lake, and Nahanni herds (Wood bison recovery team, 1995).

2.3 Population status. The wood bison was never as numerous or widespread as the other North American subspecies, the plains bison (*B. b. bison*), which ranged in the millions from Canada to Mexico and between the Rocky and Allegheny Mountains (Fig. 1). After evaluating the carrying capacity of the habitat available, Soper (1941) estimated that approximately 200,000 wood bison roamed the boreal wilderness of northwestern Canada in 1800. Like the plains bison, the subspecies was almost exterminated in the late 19th century by overhunting associated with European exploration and the introduction of the fur trade (Gates *et al.,* 1992).

A remnant wild herd of about 250 wood bison survived the slaughter and, under government protection in Wood Buffalo National Park, grew to between 1500-2000 head by 1922. However, the recovering herd was jeopardized by the unfortunate introduction of 6673 plains bison from an over-crowded reserve in southern Alberta between 1925 and 1928. The plains bison hybridized with the wood bison (although recent examination of morphological traits suggests that penetration of the wood bison genotype by the other subspecies has been minimal in some remote areas - van Zyll de Jong *et al.,* 1995). Of greater significance, the plains bison introduced two serious cattle diseases, tuberculosis and brucellosis (Wood bison recovery team, 1995).

The combined wood and plains bison herd grew to approximately 12,000 animals by 1934, and observers feared that the wood bison was lost as a distinctive genetic form (Soper, 1941). In 1959, however, a small herd of 200 animals with wood bison morphological characteristics was discovered in a remote part of Wood Buffalo National Park (Banfield and Novakawski, 1960). Authorities removed animals from this remnant wild herd, tested them to assure they were not diseased, and reintroduced them elsewhere. In 1963, 18 head were moved to the Mackenzie Bison Sanctuary near Fort Providence in the Northwest Territories. They have multiplied to form the largest herd of wood bison in existence today. In 1965, 24 other animals were placed in Elk Island National Park in central Alberta to create a disease-free breeding herd to supply zoos and to provide for future reintroduction to the wild (Gates *et al.,* 1992).

Today, about 1800 wood bison exist in seven wild, free-ranging herds under government management (Fig. 2). The largest is the Mackenzie herd of 1300 in the Northwest Territories. The six other wild herds range in size from about 20 to 210 animals. In total, these herds presently occupy about three percent of the wood bison's historical range (Gates *et al.,* 1992).

In addition, several remnant wild herds of about 2300 animals with wood bison characteristics persist in the vicinity of Wood Buffalo National Park (Fig. 2). Although these herds are compromised to some extent by hybridization, van Zyll de Jong *et al.* (1995) recently found them still indistinguishable from the wood bison phenotype. All are infected with cattle diseases, however.

At least 1100 additional wood bison exist under fenced or captive conditions. As mentioned above, the Canadian government maintains a semi-wild herd of 380 wood bison in Elk Island National Park to provide a source of animals for reintroduction. The Northwest Territories Government has recently created the "Hook Lake salvage herd," currently numbering 20 animals (Fig. 2), for healthy bison taken from the diseased Hook Lake herd. Zoos and wildlife parks hold about 50 more animals. Finally, about 700 wood bison occur on privately owned farms, mainly in southern Canada (Gates *et al.,* 1992). All privately owned animals are descendants of captive-bred animals obtained as surplus from captive government herds.

In summary, there are about 1800 healthy wood bison in free-ranging (wild) government herds, about 2300 free-ranging wood bison that have been exposed to hybridization and disease, and at least 1100 wood bison held under fenced or captive conditions.

2 .4 Population trends. Herds of wild, free-ranging wood bison have grown rapidly when protected from over-hunting. The original wild population recovered from 250 in 1900 to at least 1500 in 1922 (Soper, 1941). The 2900 animals that comprise the free-ranging and captive herds described in the above section are all descended from the 42 animals taken from the wild in the 1960s. One of these, the Mackenzie herd, grew at an average rate of $r = 0.215$ between 1963 and 1987 (Gates *et al.,* 1992).

Fenced bison on natural range also reproduce rapidly. Records from 29 breeding seasons of the Elk Island herd reveal that 80 percent of about 300 cows three years old and older produced calves annually (Canadian Park Service, 1996). The annual increments of a plains bison herd also under loose confinement in Elk Island varied from 6 to 32 percent and averaged 19 percent between 1907-1984 (Novakowski, 1989). When fed a supplemented diet, bison reproduce at even higher rates that may equal those of domestic cattle (Canadian Bison Association).

2.5 Geographic trends. Reintroduced wood bison have occupied new territory rapidly. The seasonal ranges of the reestablished Mackenzie herd grew to cover almost 10,000 km^2 in 20 years (Gates *et al.,* 1992). Because of uncertainty stemming from the future status of the diseased bison herds, it is not now possible to safely estimate the final size of the range available to the seven recovering wild herds (Fig. 2) (Wood bison recovery team, 1995).

In addition to the disease problem, direct and indirect human activities incompatible with the existence of free-ranging wood bison continue to increase (Wood bison recovery team, 1995). These activities include fencing for agriculture and commercial bison farming. Suppression of forest fire across the overall range of the bison has allowed shrub encroachment on grassland. The effect of extensive clear-cutting of northern Alberta forests has not yet been determined. As explained in section 2.2, about 61 percent of the bison's original habitat is now unavailable for reintroduction because of these conflicting land-uses and the establishment of buffer zones to separate diseased and healthy herds.

2.6 Role of the species in its ecosystem. The wood bison is a keystone species of the boreal region, able to utilize the coarse grasses and sedges of snow-laden northern pastures unsuitable for other large herbivores. Bison grazing affects and may help maintain the plant composition of grasslands (Larter and Gates, 1991; Campbell *et al.,* 1994).

The presence of bison affects the density of its major predator, the wolf (*Canis lupis*), which in turn affects densities of moose (*Alces alces*) and several species of mammalian and avian scavengers (Gates and Larter, 1990; Larter *et al.,* 1994).

2.7 Threats. Although the wood bison is no longer considered to be endangered, the scope for its continued recovery in the wild is constrained by limiting factors largely involving habitat availability and quality as described above. Since 1973, Canada has embarked on a formal program to fully recover the wood bison, as described in section 4 of this proposal.

Several reintroduced wood bison herds are threatened by the risk of infection with bovine tuberculosis and brucellosis from bison in the Slave River Lowlands and northern Alberta, including Wood Buffalo National Park. Both diseases create chronic infections that reduce an animal's productivity and viability and increase its susceptibility to predation. The large Mackenzie herd is most at risk of contracting disease from neighboring herds. (To prevent contact, a bison-free buffer zone of 394 km^2 is being maintained.) A third introduced disease, the highly lethal anthrax, has flared up occasionally, apparently when certain climatic conditions expose spores lying dormant in the soil. Anthrax outbreaks may rapidly kill hundreds of bison and then disappear for years (Gates *et al.,* 1995). These diseases limit the growth and size of bison herds but will not eradicate them.

The ultimate size of healthy bison populations is limited by the availability of food and not by wolf predation. Wolves appear able to hold diseased herds at low numbers, however (Gates *et al.,* 1995). Occasionally, large numbers of bison may drown during floods or after falling through thin ice (Reynolds *et al.,* 1982).

Hunting, which caused the demise of the vast bison herds on the great plains during the last century, is now controlled and is no longer considered a threat (see section 3.1).

3. Utilization and Trade

3.1 National utilization. The largest of the reestablished herds, the Mackenzie, was opened to regulated hunting in 1988. The current annual quota is 47 animals, which is allocated among aboriginal people (23), other local residents (15), and non-resident trophy hunters guided by local aboriginal people (9, males only). Between 35-40 bison have been actually taken each year.

As described in section 2.3, there are about 700 captive-bred wood bison and an unknown number of hybrids in private ownership. Such animals are kept in pure herds or selectively bred to plains bison for agricultural purposes. Farmed bison produce meat, hides, and other products similar to those from domestic cattle. Many Canadian jurisdictions legally classify privately owned wood bison as agricultural livestock instead of wildlife. These domesticated bison have no direct connection with the conservation program for the wild population (Wood bison recovery team, 1995).

3.2 Legal international trade. Canadian CITES records reveal that few wood bison or their products have entered international trade since the subspecies was placed in Appendix I in 1973. Table 1 indicates that 13 live animals, all captive-bred at government facilities, have been exported to zoos abroad. Trophy hunters exported two wood bison to Germany in 1994. Tissue samples and other parts have been exported from some wild bison for scientific purposes. The importation of live animals or products has not been recorded.

The near-absence of trade is not surprising when one understands how the wood bison came to be included in CITES. The wood bison was placed in Appendix I at the first CITES conference in 1973. Though Canada then considered the wood bison endangered, there was little if any demand for international trade, nor was there a history of trade as a factor contributing to the subspecies' near-demise in the last century. The listing was automatically accepted because CITES had not yet adopted the so-called Berne Criteria for placing species in the appendices. The rationale for transferring the wood bison to Appendix II is presented in section 6, "Other Comments."

3.3 Illegal trade. Canada has no formal record of the illegal export or import of wood bison. However, it is possible that a few agricultural wood bison or hybrids have been exported without permits as plains bison. Because plains bison cannot be easily distinguished from wood bison by the non-expert, such activity would be difficult to detect or prevent (see section 5).

3.4 Actual or potential trade impacts. Except for the few animals exported for zoos and as trophies, there has been no trade demand for wood bison until recently. The growing popularity of commercial bison farming, mainly involving the plains bison, has stimulated interest in the wood bison for selective breeding in Canada and the United States (Reynolds, 1991). Because of the Appendix I ban on commercial trade, however, wood bison may not be imported to the United States for agricultural purposes unless they were bred-in-captivity at farms registered with the CITES Secretariat.

There are between 45 and 60 farms holding wood bison or hybrids in Canada (Canadian Bison Association). Many farmers wish to export wood bison to take advantage of expanding markets, and registering them would be expensive and impractical. Government authorities would need to obtain considerable documentation on each privately owned herd. They would also need to inspect each farm periodically to ensure that no animals had been illegally obtained from the wild -- an extremely unlikely event that would be in defiance not only of wildlife legislation but also of strict animal health regulations. The ready availability of animals from farms and as surplus from the government breeding program has effectively reduced incentive for the "rustling" of wild stock.
It is reasonable to expect that many wood bison farms would qualify for the registration requirements outlined by Resolutions Conf. 2.12 and 8.15, so that in itself is not a problem. The wood bison on Canadian farms are descended from captive-bred stock acquired legally as surplus from government herds. Many generations have been produced in captivity without the influx of wild specimens.

Because there is no connection between the wild and domestic populations, the growing demand for trade in captive-bred specimens (and possibly semen and embryos) for agricultural purposes is not expected to have any direct impact on the wild population. This is a key point in the rationale to

transfer the wood bison to Appendix II presented in section 6, "Other Comments."

3.5. Captive breeding for commercial purposes outside Canada. Canada is not aware of the existence of wood bison on commercial farms outside the country. As mentioned in section 3.3, however, some captive-bred wood bison or hybrids may have been exported in the guise of plains bison. Many wood bison farmers and agricultural representatives are unaware of the need for a CITES permit, which is understandable because of the lack of obvious association between bison on farms in southern Canada and their wild counterparts in remote northern wilderness areas. If animals have been exported, they would presumably be used for selective breeding with plains bison for agricultural purposes.

4. Conservation and Management

4.1 Legal status.

4.1.1 National. The wood bison is designated as a protected wildlife species in Manitoba, Alberta, British Columbia, and the Yukon and Northwest Territories. Laws control hunting and other activities like capture or harassment. In the Northwest Territories, subsistence hunting by aboriginal people may also be regulated. In Saskatchewan, Ontario, and other eastern provinces, the wood bison occurs only on farms and is not protected under wildlife legislation. It is regarded as a domestic animal subject to agricultural regulations.

The enforcement of existing laws has proven effective in preventing unauthorized killing, capture, and harassment. The laundering of wild animals through captive-breeding operations and farms has never been detected and is unlikely to have occurred.

Bison and bison habitat that occur in national parks are protected by the Canadian National Parks Act. The same protection is provided by provincial and territorial laws in designated wildlife management areas. The federal Wildlife Trade Act may be used by provincial and territorial governments to control the movement of wood bison across their borders.

The plains bison does not receive the same level of protection in most parts of Canada. Only British Columbia, the Yukon, and the Northwest Territories include the plains bison under wildlife law. In other jurisdictions, it is classified with cattle as a domestic animal.

In 1978, the wood bison was designated as "endangered" by the Committee on the Status of Endangered Wildlife in Canada. This committee, which is responsible for producing the official Canadian endangered species list, reduced the wood bison's designation to the lesser category of "threatened" in 1988 (Wood bison recovery team, 1987). Because the subspecies is still considered to be at risk, it is subject to a national strategy for recovery that has resulted in the formation of a multi-jurisdictional recovery team. The wood bison recovery team (1995) has prepared a comprehensive recovery plan that has served as the basis for recovery action since 1973.

4.1.2 International. The wood bison has been included in Appendix I of CITES since 1973. As discussed in sections 3.2 and 6, the subspecies was included in Appendix I in advance of established

criteria, and this action has been of little significance to the conservation of the wild population.

The species *B. bison* is classified as "Lower Risk: conservation dependent" on the 1996 IUCN Red List of Threatened Animals.

4.2 Species management.

4.2.1. Population monitoring. Bison are gregarious and may be accurately counted from aircraft when they form herds in open areas. Aerial surveys determine population size, recruitment rate, and sex and age composition. Three of the seven wild herds, including the large Mackenzie herd, are censused annually or biannually. The remaining herds are censused regularly but less frequently (Wood bison recovery team, 1995).

The recovery strategy calls for establishing a minimum of four free-ranging populations that each exceed the recommended minimum viable size of 400 head. The Mackenzie herd already far exceeds 400, and four other reestablished herds have the potential to meet or exceed that number by the year 2000 (Wood bison recovery team, 1995).

More reintroduction is possible. The State of Alaska is considering introducing Canadian wood bison to the Yukon Flats (Fig. 2), an area of good habitat in southeastern Alaska that can support at least 2000 head (Alaska Department of Fish and Game, 1994). This plan is particularly significant in view of the limited potential for further reintroduction in Canada, and the threat to some of the Canadian herds from disease.

Captive herds are under constant supervision and regular inventories are taken.

4.2.2 Habitat conservation. Federal, provincial, and territorial governments have identified large areas of habitat for the conservation of the wood bison. On these areas, legislation allows regulation of land uses such as forestry and mining to preserve or to enhance bison habitat. Such regulations have benefited the Mackenzie herd, for example, which has extended its range into two wildlife management areas outside its original sanctuary in the Northwest Territories.

A large area (55,000 km^2) in and around Wood Buffalo National Park, which the federal government originally designated for wood bison protection, now harbors several diseased herds of mixed ancestry. The eventual removal of these herds, which occupy only seven percent of the historical range, will reclaim a much larger area of prime habitat for wood bison recovery. In 1995, the Canadian government decided to allow five more years for studying alternatives to slaughter as a means of controlling and eventually eradicating the two cattle diseases in the national park. Until a strategy is chosen, the wood bison nearest the diseased herds are being protected from contact by killing all potentially diseased bison that enter a buffer zone now separating the herds (Wood bison recovery team, 1995).

For several reintroduced herds, research is underway to determine seasonal habitat requirements and set the most sustainable stocking densities (Wood bison recovery team, 1995).

Existing habitat is being improved by such techniques as prescribed burning, mechanical clearing, reestablishing spring flooding in the Peace-Athabasca Delta, and adjusting forest harvest and fire-protection practices to discourage shrub encroachment.

Some industrial activities have created new habitat. For example, 18 wood bison were recently released near Ethithun Lake in British Columbia where oil development created meadows along roadways and around drilling sites. Similarly, Syncrude Canada Ltd. has created bison range on oil sand reclamation sites in Alberta.

4.2.3 Management measures. The wood bison is classified as a threatened species in Canada and is the subject of a formal government recovery program. (Primary responsibility for the management of the wood bison lies with the governments of the Canadian provinces and territories.) A team of biologists from the western provinces and the territories was formed to design and conduct this program. The team has identified the following goals:

- Reestablish free-ranging populations where possible within the bison's historic and prehistoric range,
- Manage restored populations for long-term sustained use to benefit local communities,
- Maintain the genetic integrity of the subspecies, and
- Establish cooperative management programs with local aboriginal communities.

A variety of strategies is being pursued to fulfill these goals as described in detail in the recovery plan and summarized in sections 4.2.1 and 4.2.2.

The wood bison recovery team is working with aboriginal groups, local communities, conservation groups and government agencies interested in wood bison recovery. The federal government has begun a 5-year study of bison ecology in Wood Buffalo National Park. The prospect of salvaging valuable wood bison genetic stock from one of the diseased herds (Hook Lake) is also under study. Policies have been adopted to eradicate or isolate diseased herds, integrate bison in forest management and other industrial developments, and ensure that the growing presence of plains bison on farms within historic wood bison range is managed to prevent accidental escape and possible hybridization. As mentioned in section 4.2.1, further reintroduction will be conducted in areas where long-term access to suitable habitat can be assured (Wood bison recovery team, 1995).

4.3 Control measures

4.3.1 International trade. Because the wood bison has had little involvement in international trade, few special control measures exist. In 1993, the European Economic Community CITES Working Group authorized the import of wood bison trophies taken from the Mackenzie herd. The United States Endangered Species Act lists the

wood bison as "endangered," which affects the subspecies' importation to the United States.

4.3.2 Domestic measures. The existing laws and policies described elsewhere in this proposal have proven adequate to prevent unauthorized killing, capture, and harassment of wild wood bison. Policies to protect wood bison habitat by controlling competing land uses are still being developed, as described in section 4.2.

5. Information on Similar Species

The wood bison may be easily confused with the other North American subspecies, the plains bison (*B. b. bison*), which is not included in the CITES appendices. Karsten (1975) described the wood bison as larger, darker, more elongated in front, and having a squarish hump with a more gently sloping back than the plains bison. Van Zyll de Jong (1986) and the CITES Identification Manual (Volume 1a: mammalia) present illustrations of morphological differences between adults of the two subspecies. In a recent study, van Zyll de Jong *et al.* (1995) were able to distinguish among widely disparate populations of plains and wood bison on the basis of their external morphology.

However, these distinguishing traits are subtle and variable (Reynolds *et al.*, 1982). Only a person quite familiar with the characteristics of both subspecies would be able to make an accurate identification based on physical appearance alone. Juveniles, hybrids, and body parts and products (meat, hides, etc.) from the two subspecies would be indistinguishable in trade. (This identification problem also applies to the European bison or wisent (*B. bonasus*) (CITES identification manual)). Wood and plains bison readily interbreed and produce a fertile hybrid (Reynolds, 1991). Many authors have questioned the validity of the taxonomy of wood and plains bison and have called for a revision of the genus (Reynolds *et al.*, 1982).

There are over 250,000 plains bison in North America, with about 62,000 animals occurring on 800 to 900 privately-owned farms in Canada (Pauls, 1995; Canadian Bison Association). The domestic industry is growing rapidly and the Canadian Bison Association expects farms will hold 100,000 bison by 2000. There are three unfenced herds of plains bison in Canada, the largest being 1500 animals that escaped from a farm in northern British Columbia. All plains bison descend from the few survivors of the original wild population brought into captivity around the turn of the century (Reynolds, 1991).

Farmers raise plains (and wood) bison for breeding stock, meat and other commercial products. According to the Canadian Bison Association, plains bison and their products are exported "almost daily" to the United States and, to a lesser extent, Europe. Specific data are unavailable because the Canadian government does not separate bison products from "beef" in export statistics.

6. Other Comments

The wood bison's case is unusual because the subspecies was placed in Appendix I before adoption of the Berne Criteria (Resolution Conf. 1.1) in 1976. Hindsight suggests that the wood bison would have been a weak candidate for Appendix I under the Berne Criteria, because its small population was growing rapidly and there was no evidence of international trade demand.

Since 1976, the wild population has continued to grow and the number of herds has increased. Surplus captive-bred bison were made available to the public, and the increasing popularity of bison farming has created an international market for these privately owned specimens. If the wood bison were to be transferred to Appendix II, it would be possible to allow trade in the privately-owned animals for agricultural purposes, and at the same time maintain strict control over trade in specimens from the wild.

Though the present-day wild wood bison population may appear to satisfy some of the biological criteria for inclusion in Appendix I (Resolution Conf. 9.24), Canada believes that it does not need to be retained in Appendix I to receive adequate protection because the commercial trade demand is restricted to privately-owned, captive-bred specimens. That being the case, retaining the subspecies in Appendix I would not provide the wood bison with any conservation benefit, and would only perpetuate two serious implementation problems:

1). Enforcing a ban on commercial trade in privately owned (agricultural) wood bison and wood/plains bison hybrids is difficult because of their close physical resemblance to the plains bison (section 5), which is not included in the CITES appendices. Consequently, there is little to prevent unscrupulous people from exporting a wood bison or hybrid by simply calling it a plains bison. Enforcement officials would not be able to prove an animal was a wood bison or hybrid unless they could demonstrate its parentage, which is generally not possible with privately owned animals.

Consequently, if retaining the wood bison in Appendix I is to have any meaning, the plains bison would need to be placed in Appendix II (in accordance with the terms of Article II, paragraph 2.(b)) so that all bison require export permits. This action would only be sensible if the wood bison were in fact threatened by international trade, which is not the case. Therefore, including the plains bison in Appendix II would have no conservation value for the wood bison. It would only create unnecessary work for CITES authorities and place an unjustifiable burden on bison farmers.

2). To facilitate agricultural trade, wood bison farms could be registered as commercial captive-breeding operations according to the procedure described in Resolution Conf. 8.15. However, registration is not a practical solution because there are already over 45 such farms and their number is increasing rapidly. It would impose a large administrative burden without conservation value because the laundering of wild bison through these farms is extremely unlikely. As described in section 3.4, the wild population is effectively isolated from commercial trade.

Canada believes that transferring the wood bison to Appendix II would solve these problems without jeopardizing the conservation status of the wild wood bison in any way. Government authorities would still retain complete control of the export of both wild and agricultural specimens. Export permits would need to be issued for all specimens according to the terms of Articles IV (paragraphs 2a and 3) or VII (paragraph 5), which both require non-detriment findings. Resulting trade would be subject to review according to Resolution Conf. 8.9. The transfer would allow commercial export for agriculture, thereby reducing incentive for fraudulent export of wood bison in the guise of non-CITES plains bison.

This proposal to transfer the wood bison to Appendix II is predicated on Canada's ability to satisfy the "precautionary measures" of Resolution Conf. 9.24 (Annex 4, paragraphs B.2.b.i and ii). Although the subspecies is in demand for trade, it would be managed according to the requirements of Article IV. Canada can and will maintain appropriate enforcement controls to prevent the unauthorized taking of wild bison for commercial farming. The transfer to Appendix II would be consistent with the goals of the government recovery plan, and would not hamper progress toward the fullest possible recovery of the wood bison in the wild within its historic range.

As Canada is the sole range state for the wood bison, no other Party was consulted in the preparation of this proposal.

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Table 1. Wood Bison Exports from Canada between 1975 and 1996

YEAR	QUANTITY	SPECIMEN	SOURCE	PURPOSE	DESTINATION
1978	3	Live	Unknown	Zoo	USA
1981	2	Live	Captive-bred	Zoo	China
	5	Live	Captive-bred	Zoo	Germany
1986	3	Live	Captive-bred	Zoo	USA
1992	41	Biological samples	Wild	Scientific	USA
1993	43	Teeth	Wild	Scientific	USA
	3	Skulls	Wild	Scientific	Switzerland
1994	47	Teeth	Wild	Scientific	USA
	2	Head and parts	Wild	Trophy	Germany
1995	1	Head and parts	Pre-CITES	Trophy	New Zealand

Figure 1. Historic and prehistoric range of wood and plains bison.

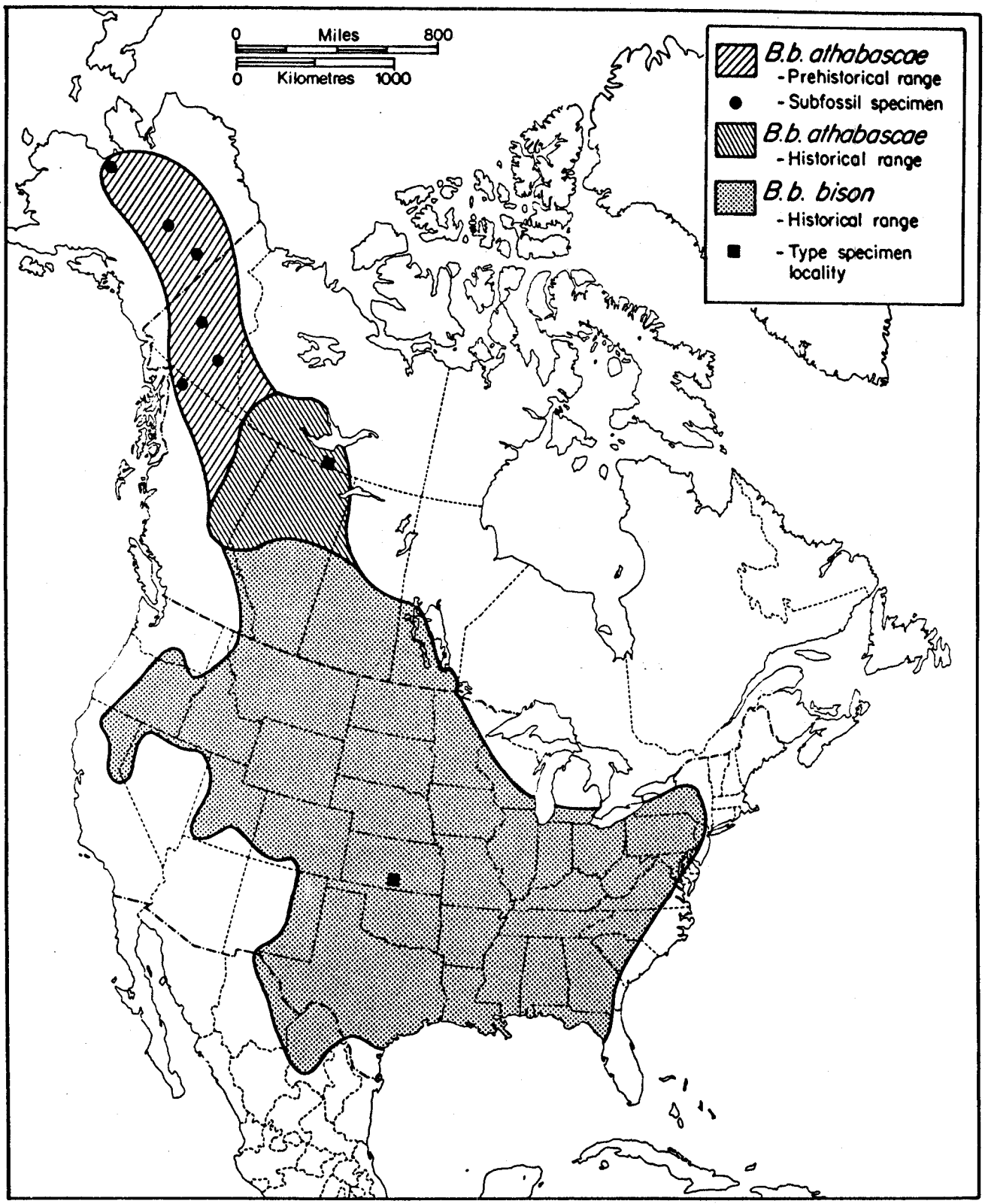

Figure 2. Distribution and size of captive and free-roaming wood bison herds in Canada and the location of a possible reintroduction in Alaska. The terms "infected" and "non-infected" refer to the diseases brucellosis and tuberculosis. The numbered sites on the map correspond to the identity of herds in the accompanying list. Each herd's approximate size is shown in brackets. The wood bison's historic and prehistoric range is shown by a solid line.

1 Mackenzie (1300)
2 Nahanni (70)
3 Yukon (210)
4 Liard (40)
5 Hay Zama (100)
6 Chitek Lake (40)
7 Ethithun Lake (20)
8 Hook Lake (450)
9 Little Buffalo (230)
10 Nyarling (260)
11 Peace Athabasca Delta (1400)
12 Elk Island National Park (380)
13 Hook Lake salvage project (20)
14 Yukon Flats (proposed)