

**DRAFT STATUS EVALUATION FOR
GRIZZLY BEAR
(*Ursus arctos*)
IN ALBERTA**

Prepared for
**The Alberta Endangered Species
Conservation Committee (ESCC)**
by
The ESCC Scientific Sub-committee

January 2001

Summary of background information from detailed report on the status of the Grizzly Bear (*Ursus arctos*) in Alberta

- Grizzly bears are found in the mountains, foothills and boreal mixedwood regions of western Alberta. They have large home ranges, requiring large areas that contain a mix of seasonal habitats. The grizzly bear is a subspecies of the Brown Bear, which occurs in North America, Europe and Asia. In North America, it is found in Alaska, the territories, B.C., Alberta and relatively unsettled areas of the northwestern US. In its US range, it persists in 6 separate populations, occupying only 1% of its historic range. Its former range extended into Mexico.
- Relative to historic populations, the size and distribution of grizzly bear populations has been reduced. A major range reduction occurred in response to European settlement of the Prairies around the 1870s, and numbers continued to decline until some protection was established in the late 1950s/early 1960s. Similar declines have occurred across the species' global range.
- Dispersal capabilities are low relative to other large carnivores, especially for subadult females, which tend to establish a home range that overlaps with their maternal home range. This will slow the rate of recolonization of areas from which populations have disappeared. A DNA study completed in the southern half of Alberta found no evidence of dispersal into Alberta from B.C.
- This species' reproductive rate is low; age of first reproduction is 4-8 years, and females in Alberta produce young at an interval of approximately 3-5 years. Grizzlies stop breeding by the time they reach 18.5-24.5 years of age. Average litter size is between 1.6 and 2.2. The low reproductive rate will reduce the speed of recovery from any decline.
- This species is relatively difficult to census accurately because of low population densities, winter inactivity, poor sightability and use of remote habitats. The current provincial population is estimated at approximately ~~850 individuals of all ages, with an additional 175-185 in national parks~~ (park staff estimate). The proportion of mature individuals is approximately ~~35-40%~~ - based on data from Alberta studies. While the accuracy of the provincial population estimate is questionable, four prominent grizzly bear researchers consider that the number of mature grizzly bears in the province is definitely less than 1000 (M. Gibeau pers. comm., I. Ross pers. comm., G. Stenhouse pers. comm., S. Herrero pers. comm.).
- Trends are difficult to estimate, because the methods for estimating population density and size have changed in the last ten years. The population appears to have increased during this time; however, more recent methods (such as DNA from hair snares) appear to result in higher density estimates, which might in part explain the apparent increase.
- It has been estimated that the Alberta population can sustain human-caused mortality at the rate of 6-6.5% per year without causing population decline. It is generally accepted that female bears should make up no more than one third of the legal harvest. Human-caused mortality rose between 1972 and 1987, but has declined since limited entry draws were implemented in 1989.
- The primary causes of mortality for grizzly bears in North America are human-caused (legal and illegal harvest, control of 'problem bears', and other events such as vehicle collisions); human activity in bear habitat is steadily increasing, and as a result, these events will also increase. Human-caused mortality is a greater source of Grizzly Bear death than is natural mortality. Habitat loss, alienation (by increased human use) and fragmentation, are also limiting factors. Even habitat within the National Parks is shrinking and becoming intersected by busy roads. Major transportation corridors negatively affect movement of individuals between feeding areas and dispersal between breeding populations. The species' low tolerance for human disturbance can have the effect of reducing a habitat's carrying capacity.
- Less than 20% of the North American range of this species is found in Alberta.

- Grizzly Bears in Alberta are listed as May be at Risk. Their global Natural Heritage rank is G4T3 (species secure, subspecies vulnerable); the current Canadian population is listed by COSEWIC as Special Concern; the Prairie population as Extirpated. In BC, the species is Blue-Listed (vulnerable because of human activities or natural events). It is listed as Threatened in the contiguous United States. It is ranked S1 or S2 in Washington, Idaho, Wyoming, and Montana, and extirpated from a number of other states. It is considered Endangered in Washington, Threatened in Idaho, but Secure in Alaska. The species is included on CITES Appendix II.

Source: Kansas, J. 2001. Status of the Grizzly Bear (*Ursus arctos*) in Alberta. Alberta Sustainable Resource Development, Fisheries and Wildlife Management Division, and Alberta Conservation Association, Wildlife Status Report No. 37, Edmonton, AB. 43 pp.

Scientific Sub-committee's Assessment:

A. Declining Population in the past or future? No.

Although the Grizzly Bear's Alberta distribution has declined markedly in the past, there is no evidence that Grizzly Bear populations in Alberta are declining at present. However, it is likely that current and future land-use and human activity will result in declines.

B. Small distribution and decline or fluctuation? No.

The present extent of occurrence for this species in Alberta exceeds 20 000 km², and there is no evidence of population decline or fluctuation, although current and future land-use and human activity may result in declines. Subpopulations may be isolated to some extent.

C. Small population size and decline or fluctuation? No.

The estimated population in Alberta of approximately 850 plus 175-185 individuals is less than 2500 (Endangered). The effective population size will be smaller than that, but not likely smaller than 250 mature individuals. The population does not appear to be declining at present, although current and future land-use and human activity may result in declines.

D. Very small population? Yes.

The estimated Alberta population of approximately 850 plus 175-185 individuals of all ages is slightly greater than 1000; however, the number of mature breeding individuals (35 to 69% of this estimate) is substantially less than 1000 (although greater than 250). The area of occupancy exceeds 100 km², and the number of locations is greater than 3. Therefore the subcommittee agreed that the Grizzly Bear qualifies for **Vulnerable: D1**

Status:

The subcommittee agreed that the Grizzly Bear qualifies for **Vulnerable: D1**. The equivalent Alberta legislative status is **Threatened**. This species is mobile, but the dispersal of subadult females is limited; a genetic study suggests that immigration from British Columbia is not occurring, and the species' low reproductive rate will slow the rate of recovery. Therefore, the risk of regional extinction for Grizzly Bear in Alberta will not be reduced by immigration from neighbouring populations.

Taxon name	Regional Red List Category	Proportion of population within the province (I-V)
	VU D1	I
<i>Ursus arctos</i>		
(Grizzly Bear)		

Notes:

- More information about potential dispersal from B.C. populations is needed.
- The recent legal harvest of Grizzly Bears is not the primary cause for concern.
- The key to maintaining healthy Grizzly Bear populations in Alberta is to minimize the impacts of human land use on Grizzly Bear habitat (e.g. access management) and minimizing human caused mortality.

Assumptions:

- The provincial population estimate reflects the true number of grizzly bears adequately enough to extrapolate that the number of mature individuals is considerably less than 1000.
- Dispersal from outside Alberta is severely limited.

Recommendations:

- The accuracy of the assessment of population size and trends in Alberta needs to be improved.
- Management goals for population size and connectivity at both population and subpopulation levels should be set.
- A clear definition of landscape condition indicators, and tracking of landscape condition, should be investigated, including assessment of cumulative effects.
- There is need for management to reduce mortality and loss of habitat effectiveness from roads/access, conflicts with humans, illegal killing and fire suppression.