

**Non-Detriment Report under the Convention on International Trade in
Endangered Species of Wild Fauna and Flora Regarding the Export of
Grizzly Bears (*Ursus arctos*) from British Columbia, Canada**

by
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Legal Context

Grizzly bears in Canada are listed under Appendix II of CITES because their parts resemble parts of Appendix I bears from other countries. The national Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the British Columbia (BC) Conservation Data Centre (CDC) have both determined that BC grizzly bears are not threatened or endangered. COSEWIC has listed grizzly bears as a “Species of Special Concern” nationally (Ross 2002) and the CDC has placed grizzly bears in BC on the equivalent “Blue list”. Information on the processes used to determine the status of grizzly bears in Canada and in BC is available at the COSEWIC website: <http://www.cosewic.gc.ca/> as well as the CDC website: <http://srmwww.gov.bc.ca/cdc/>.

Grizzly bears are listed as Big Game under the provincial *Wildlife Act*. For a detailed description of the harvest management of grizzly bears in British Columbia see Austin *et al.* (2004). All grizzly bear hunting is regulated through Limited Entry Hunting (LEH) for residents and Guide Outfitter Quotas (GOQs) for non-residents. The number of LEH authorizations available for each area is determined by the Director of the BC Fish & Wildlife Recreation and Allocation Branch, based on the technical input of provincial wildlife biologists. This system allows wildlife biologists to carefully regulate harvest levels in each area where grizzly bear hunting is allowed by limiting the number of resident hunters and issuing quotas to Guide Outfitters that limit the number of animals that can be taken by their clients (normally non-resident hunters although resident hunters can also hunt under a Guide Outfitter’s quota).

The bag limit for grizzly bears is 1/year. A resident hunter can only hunt a grizzly bear either 1) in a specific area if they have received, through a random draw, one of a limited number of LEH authorizations available for that area; or 2) under the same conditions that apply to non-residents. Non-resident hunters can only hunt a grizzly bear if they are accompanied by a licensed Guide Outfitter or assistant guide. A guide may only accompany a hunter if the guide has a balance remaining on their quota. Quotas set the maximum number of grizzly bears a Guide Outfitter’s clients may take within their Guide Outfitter Area and are determined by the Regional Fish and Wildlife Manager or the Director of the BC Fish and Wildlife Recreation and Allocation Branch, again, based on the technical input of provincial wildlife biologists.

In BC it is illegal to kill a bear <2 years old or any bear in its company (usually its mother). It is also illegal to possess bear gall bladders or to possess bear genitalia separated from the carcass or hide or to traffic in, import or export bear paws separated from the carcass or hide. It is illegal for a hunter to kill a grizzly bear and fail to remove the hide. It is illegal to hunt a grizzly bear by placing bait or using a dead animal or a part of it as bait. The maximum fine for poaching a grizzly bear is \$100,000 and six months in jail.

Any grizzly bear killed by a hunter must be submitted for a compulsory inspection, within 15 days of the kill for unguided hunters (extensions of this time limit are available based on prior requests for a written approval), or the end of the hunting season for guided hunters. This inspection includes confirmation of sex, extraction of a tooth for ageing and recording the date and location of the kill as well as the hunter’s name. In some cases tissue or hair samples are also taken for DNA analysis.

Ecology

Grizzly bears have been one of the most intensively studied large mammal species in North America and a large body of literature exists on their ecology and natural history. For information on grizzly bear population dynamics, habitat associations, movements, sensitivity to human impacts please refer to LeFranc *et al.* (1987), Craighead *et al.* (1995), Pasitschniak-Arts and Messier (2000) and Ross (2002).

Range

Grizzly bears currently occupy approximately 84% of British Columbia and 89% of their historic range. The current range is approximately 790,000 km² – an area that exceeds the combined landmass of Germany, the United Kingdom, Switzerland and Greece. There are 57 Grizzly Bear Population Units (GBPUs) recognized within the current range of grizzly bears in BC (Hamilton *et al.* 2004). Of these populations, 9 have been designated as being in need of recovery and the remainder are designated as being viable and capable of withstanding a conservative harvest. Within the occupied range of grizzly bears in BC, >104,000 km² or approximately 13% is protected – an area larger than the landmass of Hungary.

GBPU boundaries have been established based on behavioural ecotypes and sub-populations of bears. In the southern areas of the province, GBPU boundaries follow natural (e.g., large lakes) and human-caused (e.g., high traffic volume highways) partial barriers to grizzly bear movements (Apps 1997). There appears to be some degree of genetic isolation among these units (recent studies summarized in Ross 2002).

In northern and coastal British Columbia, GBPU boundaries follow natural and ecological boundaries or transition areas (primarily heights of land between watersheds) and less frequently represent significant barriers to grizzly bear movement. There is no hunting permitted in the 11% of grizzly bear historic range in which the species has been extirpated nor in the 10% of historic range represented by the 9 populations in need of recovery. In addition, a substantial number of other areas – including protected and other areas with healthy grizzly bear populations – are closed to grizzly bear hunting. Recently a recovery strategy was developed for one of these areas and published by the province (North Cascades Grizzly Bear Recovery Team 2004).

The areas from which grizzly bears have been extirpated overlap the portions of the province with the highest human densities and levels of habitat loss, alteration and fragmentation. These areas have been closed to grizzly bear hunting for decades. In most cases habitat impacts and risks of non-hunting related mortality are the factors limiting the ability of these areas to sustain grizzly bears over the long-term. There has been no significant contraction of grizzly bear range in BC over the last 30 years. In fact, the prevalence of sightings, radio-telemetry locations of instrumented animals and reports to Conservation Officers regarding Grizzly Bears within some of the areas that are considered not to be permanently occupied has increased in recent years (e.g., the Okanagan valley and the area surrounding the city of Prince George). Very recently, a Grizzly Bear specimen was obtained on Vancouver Island.

Population Estimates and Inventory

It is well understood that due to the generally solitary nature of grizzly bears, their relatively low densities and use of forested habitats (particularly in BC as compared to more northern jurisdictions) that it is very difficult to inventory their populations (Miller *et al.* 1997). The fact that grizzly bears have been hunted in BC for decades at levels generally higher than in recent years, and have only been extirpated from areas where grizzly bear hunting is closed and high levels of habitat impacts have occurred, is direct evidence however that “perfect” information is not required for effective management.

It is estimated that there are approximately 17,000 grizzly bears in BC (Hamilton *et al.* 2004).

The use of expert-based models based on habitat conditions to estimate population attributes including density or abundance is a fundamental wildlife management technique (Cooperrider 1986; Anderson and Gutzwiller 1996). This approach has been applied by numerous authors to the estimation of grizzly/brown bear abundance or potential abundance (Zunino and Herrero 1972; Pearson 1975; Reynolds and Hechtel 1980; Miller and Ballard 1982; Boyce and McDonald 1999; Boyce and Waller 2000). The grizzly bear population estimates that are used for harvest management in Alberta and the Yukon Territory have been based on similar techniques (Nagy and Gunson 1990; D. Larsen, pers. comm.). In Alaska, population estimates have been developed by subjective extrapolations from areas of known density, although this was not directly related to habitat mapping (Miller and Schoen 1999). Recently models driven directly from data such as Resource selection function (RSF) models or multiple regression models have been developed as an alternative to expert based models for predicting grizzly bear density (Boyce and MacDonald 1999, Boyce and Waller 2003; Apps *et al.* 2004, Mowat *et al.* 2004).

A detailed review of grizzly bear harvest management in BC was recently completed by an independent panel of scientists (Peek *et al.* 2003). That review supported the approach taken by the province and made a number of recommendations for improvement including in the area of estimating population size. The province's grizzly bear population estimates have subsequently been revised (17,000) using significantly improved techniques (Hamilton *et al.* 2004; Hamilton and Austin 2004; Mowat *et al.* 2004) that have been reviewed positively by the panel (http://wlapwww.gov.bc.ca/wld/documents/peek_incoming_letter.pdf).

Harvest Management

Under the Grizzly Bear Conservation Strategy (GBCS), all grizzly bear hunting in British Columbia has been placed under management by Limited Entry Hunting (LEH) for residents and Guide Outfitter Quotas (GOQ) for non-residents as of fall, 1996 (Ministry of Environment, Lands and Parks 1995). This change only affected northern British Columbia as southern areas of the province had already been managed on this basis for, in some cases, in excess of 20 years. The process of determining sustainable harvest levels for grizzly bears is outlined in Austin *et al.* (2004).

Harvest Analysis

Since 1976, there has been a requirement in British Columbia for hunters to bring any grizzly bear they harvest to a provincial government office for inspection. All non-hunting mortalities including illegal kills, animal control kills, roadkills, etc., have also been tracked through the same system. A premolar is removed from inspected animals for ageing (Stoneberg and Jonkel 1966; Craighead *et al.* 1970). As a result, there is detailed information available on mortality levels, hunter effort and success, the age and sex of animals killed, kill location and kill type for the period since 1978. A detailed analysis of reported grizzly bear mortality data is available in Austin and Wrenshall (2004).

Total Known Mortality and Kill Types

Human-caused grizzly bear mortalities are categorized into four kill types: Hunting, Animal Control, Illegal and Pick-up. Pick-up kills include road and train kills as well as any grizzly bears found dead of unknown causes (in some cases these may be natural mortalities). For the 26 year period from 1978–2003, there was a total of 8840 grizzly bears recorded killed by all kill types. An average of 340 grizzly bear mortalities were recorded annually through the Compulsory Inspection system, ranging from 117 in 2001 to 413 in 1996. Of those mortalities, 88.5% were

from hunting, 8.6% from animal control, 0.9% from pick-up and 2% from illegal kills (see Austin and Wrenshall 2004).

Austin and Wrenshall (2004) analyzed hunter kills by age and sex of bears, and there is no indication that hunting caused mortality is creating a problem for the species by targeting one age or sex class inappropriately. The sex of hunter-harvested grizzly bears from 1978–2002 is available for 7760 of the total of 7825 grizzly bears harvested or 99.2%. There were no trends evident in the proportion by sex of hunter-harvested grizzly bears from 1978–2003. With the exception of 1978, the hunter harvest has consistently exceeded 30% female, which means that the female mortality limits should be expected to be more limiting to grizzly bear harvest than the total mortality limits (the known female human-caused mortality limits are the equal to 30% of the total human-caused mortality limit for a GBPU) (Austin *et al.* 2004).

Of the 7594 grizzly bears taken by hunters from 1978–2002, age is available for 6870 bears, or 90.5% of the total number harvested. There were no trends evident in the average age of hunter harvested grizzly bears from 1978–2002. The high average age of harvested females in 2001 may not be representative because it was based on an unusually small sample size (21) due to the cancellation of the spring hunting season that year.

CITES Criteria for Non-Detriment

An overview of the grizzly bear harvest management system has been prepared using the draft format for CITES non-detriment findings (IUCN 2000). The summary table and the radar diagram that has been proposed as a visual representation of the issues related to a non-detriment finding under CITES have also been prepared (Appendix I, Appendix II). The only factor of significant concern is “human tolerance” which is rated as a “4” based on the five class scale. This is a biological factor inherent to the species as opposed to a management deficiency. Initiatives under the GBCS are intended to ensure that the sensitivity of grizzly bears to human activities is adequately incorporated into all relevant management activities. More information on the GBCS, including the text of the strategy itself, can be found at the following website: <http://wlapwww.gov.bc.ca/wld/grzz/index.htm>.

In conclusion, the requirements for a non-detriment finding are met with the management regime put into place by British Columbia.

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Appendix I. Summary of Harvest Regime for Grizzly Bears in British Columbia, Canada.

Is the species endemic, found in a few countries only, or widespread? widespread

Conservation status of the species: IUCN Global status: LR(Ic) National status: Special Concern Other: Blue-listed

Type of harvest	Main product	Degree of control	Demographic segment removed from wild population					Relative level of off-take (include actual number or quantity if known)				Reason for off-take			Commercial destination(s) (numbers and percentages if known)		
			Eggs	Juvs.	Adult males	Adult females	Non-selective	Low	Medium	High	Un-known	Sub-sistence	Com-mercial	Other	Local	National	Inter-national
1.4 Pest or problem animal control		a) Regulated					X	44						X			
		b) Illegal or unmanaged					X	X <=2% incl. 1.6b						X			
1.5 Live capture		a) Regulated		X				<5						X			
		b) Illegal or unmanaged															
1.6 Killing of individual		a) Regulated			X	X			231						X	X	X
		b) Illegal or unmanaged					X	x <=2% incl. 1.4b							X	X	X

Appendix II. Non-detriment Finding for Grizzly Bears in British Columbia.

Question Number Category (1 to 5)	Question	Responses	
2.1	Biology	BIOLOGY - Life history	3
2.2		BIOLOGY - Niche breadth	2
2.3		BIOLOGY - Dispersal	3
2.4		BIOLOGY - Human tolerance	4
2.5	Status	STATUS - National distribution	2
2.6		STATUS - National abundance	3
2.7		STATUS - National population trend	3
2.8		STATUS - Information quality	2
2.9		STATUS - Major threat	3
2.1	Management	MANAGEMENT - Illegal off-take	2
2.11		MANAGEMENT - Management history	1
2.12		MANAGEMENT - Management plan	1
2.13		MANAGEMENT - Aim of harvest	1
2.14		MANAGEMENT - Quotas	1
2.15	Control	CONTROL - Harvest in PA	1
2.16		CONTROL - Harvest in strong tenure	1
2.17		CONTROL - Open access harvest	1
2.18		CONTROL - Confidence in harvest management	2
2.19	Monitoring	MONITORING - Monitoring method	2
2.2		MONITORING - Confidence in monitoring	1
2.21	Incentives	INCENTIVES - Effect of harvest	2
2.22		INCENTIVES - Species conservation incentive	3
2.23		INCENTIVES - Habitat conservation incentive	3
2.24	Protection	PROTECTION - Proportion protected from harvest	1
2.25		PROTECTION - Effectiveness of protection	2
2.26		PROTECTION - Regulation of harvest	2

Non-detriment finding for Grizzly Bears in British Columbia

