



January 28, 2002

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Dear Dave,

In order to assist you in responding to the letter that was sent to you on December 10, 2001 by Christoph Bail from the European Commission, I have prepared a Non-Detriment Report (NDR) to support a Non-Detriment Finding under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (attached). In addition, to the NDR, which is generic in nature, I would like to respond to some of the specific points raised in Mr. Bail's letter as I believe there are some substantial issues and background that the European Commission and the Scientific Review Group should be aware of.

The first and most basic point is that based on the literature cited, the Scientific Authorities from the European Union (EU) member states have not "examined the available information on *Ursus arctos* from British Columbia." Of the six references included, two (Anon. 2000 and Taylor Undated) are drafts that the authors would not support being misused as definitive. In fact the draft Non-Detriment Finding was only intended to be released to reviewers and specifically indicates that it is not to be quoted.

The remaining four citations are non-peer reviewed documents by a total of four individuals and one non-governmental organization. To suggest that this is a not a balanced review is a substantial understatement. In order to demonstrate the volume of literature that is actually available on grizzly bears in British Columbia (BC), I have attached a bibliography prepared by an independent consultant.

I will now address the points raised in the attachment to Mr. Bail's letter in order by paragraph.

Paragraph 1

This paragraph begins with an acknowledgement of the relative size of the grizzly bear population in BC as compared to the rest of Canada and North America. I agree with these statements and would like to point out that they are based on the population estimates that we have prepared. I also agree with the statements regarding the sensitivity of grizzly bear populations to human-caused mortality which is why the harvest of this species is managed more carefully and conservatively than any other Big Game species in the province. I disagree with the statement regarding grizzly bear home range size, the range stated is incorrect. Annual grizzly bear home ranges in British Columbia, especially of adult females, are normally much smaller than 1,000 km² and have been documented to be <25 km² in some cases (MacHutchon *et al.* 1993).

I agree that humans are the largest source of mortality for almost all grizzly bear populations – including those in areas without grizzly bear hunting. I fail to see, however, why this is relevant especially given that it indicates that hunting is not the reason why humans are the largest single source of grizzly bear mortality. Others have taken this sort of information further and have suggested that reducing or eliminating legal grizzly bear hunting will simply cause higher levels of poaching and kills associated with bear/human conflicts. In any event, all types of human-caused mortality are considered in the process used in BC and are deducted from the allowable harvest.

Paragraph 2

I disagree with the statement that a change in methodology resulted in an increase in the provincial grizzly bear population in 1990 as compared to the estimate calculated in 1979. The system was refined and greatly improved but the basic approach of extrapolating densities based on habitats or ecosystems was retained. The major difference in 1990 was much improved information on grizzly bear density from research in both BC as well as other jurisdictions. In addition, more detailed habitat mapping was available to base the density extrapolations on. I agree that the extrapolation method as applied in 1990 relied on limited data, however, it is important to understand that this was reflected at the time in the use of a conservative approach based on the precautionary principle.

I disagree that BC's grizzly bear population estimates have not been validated by "ground truthing". In fact, as outlined in the NDR, the DNA mark-recapture technique for conducting grizzly bear inventories was pioneered in BC and has been applied over an area >52,000 km². The results of this work have helped to confirm and improve our habitat-based system of calculating population estimates. In addition, there are a number of ongoing grizzly bear research projects in the province that are providing us with valuable information to add to what is already a very large body of knowledge.

I disagree with the statements regarding how the habitat-based system incorporates human impacts. Five factors are considered: habitat loss, habitat alteration, habitat displacement, habitat fragmentation and historic human-caused mortality. The information used is based on the current knowledge of local staff and is not based on assessments from 1989. I disagree with the statement that estimated densities are based on an inadequate sample of

actual densities and question what standard is being applied and how many jurisdictions could satisfy such a standard for their Appendix II species if the information available for grizzly bears in BC is not sufficient.

Paragraph 3

I disagree with the statements regarding BC policy with respect to allowable grizzly bear harvest and mortality levels. Please see the NDR for more information on the levels of human-caused mortality that can be sustained by grizzly bear populations.

This paragraph is based on a non-peer reviewed paper by a biologist with a fisheries and environmental ethics background and, to my knowledge, no direct experience or expertise in bear research or management. Notwithstanding this, given the apparent weight the document has been given in the SRG's decision I will outline my criticisms of the paper below.

The author's argument rests on the following critical assumptions, all of which are flawed: 1) that the guidelines he cites were in fact ministry policies or standards, 2) that the maximum sustainable human-caused mortality rate for grizzly bears in BC is 4%, 3) that unreported human-caused mortality of grizzly bears is 50% of reported human-caused mortality across the province and 4) that there has been a substantial decline in the number of grizzly bears in BC over the last 35 years. He also makes a number of similarly flawed more minor assumptions, however, I will focus on the four major issues listed above.

- #1. The author bases his criticism on his belief that the BC government has allowed grizzly bear kill to exceed the levels set by its own policies or standards. To support this argument he cites the 1979 Preliminary Grizzly Bear Management Plan for British Columbia and the 1995 Conservation of Grizzly Bears in British Columbia: Background Report - neither of which represent policies or standards for grizzly bear harvest that were adopted by government.
- The first formally adopted standards for grizzly bear harvest were included in the 1996 Wildlife Harvest Strategy and allow for human-caused mortality rates of up to 6%. The reason for the discrepancy with the 4% value stated in other sources is that 4% was an allowable harvest rate that was arrived at after a 2% estimate for unreported human-caused mortality had been deducted. Unfortunately in some documents this assumption was lost and 4% was stated as the allowable total human-caused mortality rate. The author has confused draft documents and those describing recommendations with actual policy and standards and therefore his criticism that the government has violated its own standards is unfounded.
- #2. The author assumes that because one particular document suggested that human-caused mortality of grizzly bears should be managed so as not exceed 4% of the population that this is the maximum sustainable mortality rate for grizzly bears in BC. In fact, the available literature indicates that grizzly bear populations can withstand higher levels of human-caused mortality (Bunnell and Tait 1981, Harris 1986, Miller 1990, Hovey and McLellan 1996). The author misinterprets a number of existing

studies by comparing the growth rates of these populations - including human-caused mortality - with his assumed 4.12% growth rate in the absence of human-caused mortality).

- The 1996 Wildlife Harvest Strategy as well as the 1999 Grizzly Bear Harvest Management Procedure allow for human-caused mortality rates for grizzly bears of up to 6%. As the author himself admits (pg 24) recognizing that the maximum sustainable mortality rate from human causes for grizzly bears are higher than 4% seriously undermines his argument.
- If the sustainable human-caused mortality rate is assumed to be 6% (and in fact there is evidence to indicate that in some cases the sustainable level is higher) then using the low end of the provincial population estimate and the author's estimate of unreported human-caused mortality (which as I will indicate below there is reason to believe is inflated) the maximum mortality level has only been exceeded 4 times since 1965. Three of those times prior to 1971 and the most recent time in 1996 by only 3 bears (these overharvests - if in fact they actually were overharvests - were outweighed many times over by kill levels far below the maximum for the other 31 years since 1965).
- #3. The author assumes that it is government policy that unreported human-caused mortality of grizzly bears is estimated to be 50% of reported human caused mortality (as outlined above it is incorrect that this is now or ever was a government policy or standard). Although it has been common practice to express unreported human-caused mortality as a percentage of reported human-caused mortality the logic for doing so is highly questionable. This suggests that reducing legal harvest (the largest component of grizzly bear mortality) reduces the level of unreported mortalities which, in addition to being illogical, is directly refuted by a recent review of grizzly bear mortality conducted by McLellan *et al.* (1999) that showed unharvested populations in the US have higher proportions of unreported mortality than hunted populations in BC do. This does not necessarily mean that unreported mortality rates are higher for unharvested populations - merely that unreported mortality is not directly proportional to reported mortality as the author suggests.
- It is more accurate to describe unreported human-caused mortality as a percentage of the population killed annually. Following his review, Dr. McLellan, on behalf of British Columbia's Grizzly Bear Scientific Advisory Committee recommended that an estimate of approximately 2%/year be used for areas such as the Kootenays with relatively high levels of human settlement and use, but that lower estimates be used for areas with less human activity. In fact, it is estimated that unreported human-caused mortality is 1%/year for large portions of the province. By using a more reasonable estimate for unreported human-caused mortality based on recently published research the foundation for the author's argument that overharvest has occurred is further weakened.
- #4. The author assumes that the provincial grizzly bear population has declined dramatically since 1965. His argument to support this claim is completely spurious and ignores considerable information that does not support his claim. The author cites the ratio of grizzly bear complaints to black bear complaints and the ratio of grizzly bears harvested to the black bear harvest (applied against the provincial black bear

population estimate which is far less rigorously calculated and documented than the grizzly bear population estimate) as evidence of fewer grizzly bears.

- This line of reasoning is based on the author's assumption that the ratio of complaints and animals harvested should reflect the relative abundance of these two species. This assumption is entirely without foundation and ignores the fact that black bears are much more tolerant of humans than grizzly bears (and are therefore found in closer proximity to them greatly increasing the potential for conflicts as well as harvest), that black bears are found in areas such as the Okanagan and lower mainland where the majority of British Columbians live while grizzly bears are not (with rare exceptions) and that hunting regulations for these two species differ dramatically.
- In my view the author's attempt to support his claim that grizzly bear populations have declined seriously damages the credibility of his arguments. The author also ignores the results of the numerous grizzly bear inventory projects completed in recent years (which he is clearly aware of since he cites some of them on pg 5). This work has, as a whole, supported the population estimates used by the provincial government as compared to the dramatically lower estimates of other individuals or organizations. It is worth noting that if the author had used a provincial grizzly bear population estimate from 1979 of 6,000 as the starting point for his modeling exercise the result would have been a prediction that grizzly bears should have been extirpated from the province years ago.

Paragraph 4

I disagree with the characterization of BC's policy of not releasing detailed kill locations as a "failure". This information is not released because of potential conservation impacts to grizzly bears including providing hunters and poachers with direct information on where "hunting is most simple" as well as reducing compliance with regulations requiring hunters to accurately report kill locations to begin with. To the degree that detailed kill locations are of value for conservation reasons, the degradation of this data as a result of false reporting by hunters who have traditionally been assured that the information they provide will be kept confidential would have a direct impact. Please note that this policy applies to all hunted species in BC for which detailed kill location data is collected.

I also disagree with the suggestion that because this data is not released that it may not be being used by managers. In fact, I am one of the managers who uses this information. I will point out, however, that regardless, there is no literature available on bears that I am aware of that suggests that the spatial distribution of mortality – independent of mortality levels or rates – has an impact on sustainable mortality levels. Analysis of mortality must be undertaken at an appropriate scale and for grizzly bears we believe that is at the population level (for more information on grizzly bear populations in BC please see the NDR).

Kill locations are used by the provincial government to identify areas to focus management efforts on in situations where an analysis at the population levels has indicated a potential conservation concern. Kill location data is also used to investigate the factors that increase mortality risk to grizzly bears such as road density, proximity to

settlements etc. and to consider potential conflicts when reviewing proposed development activities such as the establishment of a bear viewing operation in a specific area.

Paragraph 5

I agree with these statements, however, I believe that the conservative process used for setting grizzly bear harvest levels in BC adequately accounts for these impacts. The province also has a wide range of initiatives that seek to reduce these impacts to grizzly bears and other wildlife including the doubling of the total area of protected areas in the province to >12% of the provincial landmass. Within the occupied range of grizzly bears in BC, >106,000 km² or 13.4% is protected – an area larger than the landmass of Hungary.

Paragraph 6

I disagree with the statement that there is a “wide range of opinions expressing significant doubt” regarding the sustainability of grizzly bear hunting in BC. There are a limited number of individual biologists that are very critical of provincial management. I would agree, however, that their positions are based on their personal opinions as opposed to an objective review of the available information. For example, there is no known scientific rationale available for any of the alternative population estimates for BC that have been proposed by independent individuals or organizations.

Paragraph 7 & 8

I disagree with the conclusion that the grizzly bear hunt in BC “does not appear to be based on sound biological data and it is not clearly demonstrated that harvest levels are sustainable.” This conclusion is based on the information presented in the previous six paragraphs which is seriously biased and frequently incorrect as outlined above. The fact that a number of areas have been closed temporarily to grizzly bear hunting in recent years to avoid exceeding allowable mortality levels is direct evidence that BC uses an adaptive management approach.

As described in the NDR, some basic common sense points need to be kept in mind when considering this highly emotional issue. These include: the fact that grizzly bears continue to occupy 89% of their historic range in the province, that this range has not changed noticeably in the last 30 years, that hunting is not the limiting factor explaining why grizzly bears are no longer found in some areas (as opposed to human population density and associated impacts), that grizzly bear hunting has occurred for decades at levels generally higher than those currently allowed, that recent inventory work has supported and helped to refine our population estimates and that harvest indicators including hunter success and the age and sex of animals taken do not suggest a population decline.

In response to the ongoing debate about grizzly bear hunting the provincial government has recently appointed a Grizzly Bear Scientific Panel consisting of bear experts independently recommended by the International Association for Bear Research and Management (<http://www.bearbiology.com/>) to conduct a review of grizzly bear harvest management in BC (see the following news releases for more information:

<http://wlapwww.gov.bc.ca/main/newsrel/fisc0102/july/bg159A.htm> and <http://wlapwww.gov.bc.ca/main/newsrel/fisc0102/october/ib167.htm>). The panel's final report and recommendations are due by December 31, 2002 and government has said that it will be guided by the results of this review.

I trust this letter and the NDR are of use to you. If you, Mr. Bail, the SRG or anyone else have any further questions, please do not hesitate to contact me either by telephone at (250) 387-9799, facsimile (250) 356-9145 or electronic mail at matt.austin@gems7.gov.bc.ca.

Sincerely,



Matt Austin
Large Carnivore Specialist

Literature Cited

Bunnell, F.L., and D.E.N. Tait. 1981. Population dynamics of bears – implications. pgs 75-98. In: C.W. Fowler and T.D. Smith (eds). Dynamics of Large Mammal Populations. John Wiley and Sons. New York, New York, USA.

Harris, R.B. 1986. Modeling sustainable harvest rates for grizzly bears. Unpublished manuscript. 17 pp.

Hovey, F.W., and B.N. McLellan. 1996. Estimating population growth of grizzly bears in the Flathead River drainage using computer simulations of reproductive and survival rates. Canadian Journal of Zoology 74:1409-1416.

MacHutchon, A.G., S. Himmer, and C.A. Bryden. 1993. Khutzeymateen Valley grizzly bear study: final report. British Columbia Ministry of Forests, Wildlife Habitat Research Report WHR-31 and British Columbia Ministry of Environment, Lands and Parks, Wildlife Report R-25. 107 pp.

McLellan, B.N., F.W. Hovey, R.D. Mace, J.G. Woods, D.W. Carney, M.L. Gibeau, W.L. Wakkinen and W.F. Kasworm. 1999. Rates and causes of grizzly bear mortality in the interior mountains of British Columbia, Alberta, Montana, Washington, and Idaho. Journal of Wildlife Management 63:911-920.

Miller, S.D. 1990. Population management of bears in North America. International Conference on Bear Research and Management 8:357-373.

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