

# PRINCIPLES OF HUMAN-BEAR CONFLICT REDUCTION



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## Introduction

Human-bear conflict (HBC) is an international problem involving all eight species of bears across much of Europe, Asia, North America, and the South American Andes. In almost all countries where bears occur, they are either legally hunted or are protected by national laws and/or international agreements. The status of bear populations in these countries varies widely, primarily as a result of local habitat conditions.

Conflicts between bears and people can result in economic losses, human injuries and fatalities, and consequent retributions against bears. Programs that effectively address HBC can reduce the economic burden of bear conservation efforts on affected people, improve bear welfare, and create a positive framework for human-bear coexistence.

This document was designed to provide information for decision-makers in government and specialized non-governmental organizations (NGO) to improve their understanding and management of HBC. HBC situations are complex and each situation requires careful analysis and an interdisciplinary, science-based approach that involves affected peoples. The goal here is to provide a general outline of fundamental concepts and ideas associated with HBC, which can be investigated more thoroughly to deal with specific situations.

This document was prepared by wildlife experts and social scientists with considerable experience on HBC issues. It stemmed from a growing awareness that while bear populations are declining in many areas of the world, conflicts between bears and people are increasing. The expertise to mitigate these conflicts is, in general, available, but it requires a sharing of knowledge, willingness to act, and some sacrifice by governments and affected people in terms of funding solutions and/or altering customary behaviours.

## Description and Background of HBC

We define HBC as any situation where wild bears use (undesirably) or damage human property; where wild bears harm people; or where people perceive bears to be a direct threat to their property or safety. HBC can result in negative attitudes toward bears and human retaliation against bears, both of which can hamper conservation efforts and bear welfare. Fundamentally, HBC stems from humans and bears competing for space and/or bears being attracted to food products produced or managed by people.

Local communities generally endure the primary economic and social burden of conserving bears. Successful strategies to reduce HBC seek to balance the needs of bears and local people. Current strategies vary greatly and are not always successful, sometimes even leading to increases in the frequency and intensity of conflicts. Socio-economic, biological, cultural and political factors all have important roles in HBC situations. Long-term strategies to reduce HBC must address all of these components in a coordinated and integrated manner with a view toward the welfare of both bears and people.

Government agencies can reduce economic losses and earn the respect and trust of people by recognizing HBC as a legitimate problem. Denying the risks local communities face or minimizing the losses suffered by affected households only generates resentment toward authorities, resistance to conservation efforts, and private, illicit retaliation against bears. Governments can help in the short-term by responding promptly to complaints about bears and listening to the concerns of affected communities, then in the longer-term by initiating progressive policies that balance local and national interests.

## Management of HBC

The first step toward resolution of HBC is to identify the specific nature, extent and location of the conflict situations. Scientifically informed management actions can reduce the frequency and severity of HBC. Oftentimes, though, scientific knowledge of the status and ecology of bears, and of the factors prompting increased incidences of HBC, is inadequate to make informed decisions. Knowledge of human cultural and social systems helps to understand the affected communities' perceptions of the problems and their attitudes toward the bears, and to propose balanced solutions that will be accepted by local people and the broader society.

Affected people are often willing to participate in actions designed to reduce HBC. The differing perceptions, values, needs, and demands of the stakeholders must be identified and understood to create an effective, long-term and humane resolution that benefits the relevant stakeholders and does not adversely affect the wild bear population. It is also imperative to take a proactive approach whenever possible, to resolve conflicts before human tolerance for bears declines, making people less willing to work toward a solution that does not negatively impact bears.

Public input and political will are needed to establish policies for addressing HBC and bear management. Establishment of local working groups can assist in the process of building effective plans and implementing actions to reduce conflict levels when they have an effective decision-making structure, access to resources, and participation and collaboration by essential stakeholders.

Stakeholder acceptance, cost-effectiveness, and efficacy of proposed interventions are all important in determining the success of strategies for reducing HBC. Intervention methods that are familiar, traditional, appropriate, inexpensive, and require little new technology and minimal change to existing human behaviours are most likely to be adopted by local people. When appropriate, however, new technologies and customized approaches to HBC may offer benefits. Attempts to alter human behaviour and attitudes and apply non-lethal bear management methods should be fully considered before lethal management options are implemented.

## Approaches to HBC Management

Millions of people live in proximity to bears without conflict. However, where HBC does exist, management authorities and the public should consider responses that will not only improve the present problems, but that have a high likelihood of reducing the chance and severity of future problems. Effective, long-term approaches to HBC require methods, techniques, and tools that integrate the needs and behaviors of both humans and bears, and address the root causes of HBC. These approaches may involve direct interventions (designed to reduce the severity or frequency of conflicts), indirect interventions (aimed at increasing people's tolerance for conflicts) or a combination of the two approaches.

### 1) Human-focused methods for resolving HBC:

- **Education and Awareness**—Changing human behaviour is often an important component of a strategy to reduce HBC. This requires collective community action, which may entail identifying obstacles to change and encouraging new approaches. Involving relevant stakeholders in the process of identifying potential approaches for resolving HBC is essential, as are educational and awareness efforts to promote a better understanding of bear ecology and the root causes of HBC. Such programs should be informed by social science and risk assessment analysis.

- **Avoiding Negative Encounters** - Encounters with bears that lead to human injuries or fatalities can often be avoided or injuries lessened by an increased understanding of bear behaviour and ecology and following straight-forward principles of living, working, and recreating safely in bear habitat.
- **Removal of Attractants**—The simplest solution to many HBC may be to remove attractants from the vicinity of the conflict area (e.g., livestock carcasses, human foods, bird feeders, pet food, apiaries, fruit trees) or implement better waste management practices.
- **Direct Compensation**—Losses caused by bears can be directly compensated through in-kind or cash payments. Governments and people affected by HBC should share the financial burden. When the burden of HBC rests entirely on the government, people are often less motivated to employ individual measures to reduce conflicts in the first place. Conversely, when the burden rests entirely on affected individuals, their growing negative attitudes toward bears may ultimately hinder conservation and welfare efforts. Direct compensation generally treats the symptom, not the root cause of HBC, and should be considered as a tool to be used in combination with other mitigation efforts.
- **Indirect Compensation** – Adding value to wild bears may raise tolerance for conflicts and indirectly promote bear conservation and welfare. This can be done by rewarding landowners who protect bear habitat or resolve bear conflicts non-lethally (e.g., through direct payments or by certifying and thereby promoting their products).

## 2) Bear-focused methods for resolving HBC:

- **Physical Barriers**—Physical barriers, such as electric fences, elevated platforms and bear-proof waste containers have been proven to be effective in preventing bears from accessing attractants (such as beehives, agricultural crops, livestock, garbage, etc.).
- **Bear Deterrents**—Some bears can be deterred from approaching an attractant using various tools, such as flashing lights, loud noises, chemicals or livestock-guarding dogs. Normally, though, deterrents are eventually overcome if the attractants are not removed.
- **Aversive Behavioural Conditioning**—Consistent conditioning of bears to avoid contact with people, human habitation, and human food resources may result in aversion of bears to a specific area or type of food, and increase their wariness of people. Such conditioning typically involves repeated negative (threatening, uncomfortable, or painful) stimuli (e.g., cracker shells, rubber bullets, pursuit by dogs, chemical that induces vomiting or diarrhoea, etc.).
- **Bear Population Management**—Where non-lethal options are either not effective or impractical, controlled culling or strictly regulated hunting may be used to reduce bear numbers without jeopardizing population viability. However, governments should consider potential ramifications of this approach in terms of (1) possible risks of over-harvest, especially where little scientific information exists about the population, and (2) negative responses of the public at large to what might be perceived as unnecessary killing.
- **Habitat Management**—Bears are attracted to human sources of food, especially when natural foods are in short supply, due to natural environmental fluctuations or diminished habitat quality. Improvements to bear habitat both in a general sense and more specifically through enhancement of key feeding areas (provision of fruit-producing trees and shrubs,

edible vegetation, waste grain, and in some cases animal carcasses) may reduce the attractiveness of food sources near human habitations.

- **Removal of Conflict Animals**—In some cases it may be necessary to remove bears from an area where they have been identified as being persistent conflict animals by capturing them and releasing them in areas away from the conflict area, placing them in suitable captive conditions, or humanely euthanizing them.

## Monitoring and Evaluating the Effectiveness of HBC Resolution Strategies

To assess the effectiveness of mitigation strategies, the level and extent of HBC must be quantified both before and after implementation through an objective monitoring program. Monitoring should be conducted frequently and incorporate five specific measures of performance: 1) Were interventions put in place as planned? 2) Did the level of HBC diminish as a result of the intervention? 3) Was the welfare of humans improved? 4) Was the bear population maintained at a sustainable level? and, 5) Were stakeholders satisfied that HBC had declined to acceptable levels?

## Concluding Thoughts

Strategies for resolving HBC should strive to reduce conflicts to socially acceptable levels, while simultaneously ensuring that bear populations do not decline below sustainable levels over time. HBC resolution should be based on scientifically informed management of bear populations, responsible stewardship of habitat shared by bears and people, and founded on ethical and humane approaches. Long term coexistence will depend on implementing policies that provide for balanced solutions to HBC.

