



# **Strategy for Preventing and Managing Human-Wildlife Conflicts in Ontario**

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# 1.0 Introduction

This document outlines broad strategies to prevent and manage a wide range of human-wildlife conflicts in Ontario. These strategies will facilitate the development and implementation of more detailed tools for dealing with specific human-wildlife conflicts and issues.

## The Nature of Human-Wildlife Conflicts

Human-wildlife conflicts result when the actions of humans or wildlife have an adverse impact upon the other. Although it is recognized that humans have profoundly impacted wildlife and the environment in many ways, through habitat loss, pollution, introduction and spread of exotic and invasive species, overexploitation, and climate change, this document focuses mostly on those human-wildlife conflicts that result from direct interaction among humans and wildlife. Human-wildlife conflicts vary according to geography, land use patterns, human behaviour, and the habitat and behaviour of wildlife species or individual animals within the species. Principal areas of concern include:

- Some wildlife species (e.g., deer, coyotes, Canada geese, raccoons, black bear) have an economic impact on local farming communities by damaging crops and livestock predation. The Agricultural Advisory Task Team (AATT) appointed in 2004 by the provincial Minister of Agriculture, Food, and Rural Affairs, identified issues of livestock predation and crop damage by wildlife in some regions of Ontario. The AATT recommended that human-wildlife conflict in agricultural areas be recognized and addressed by the provincial government.
- Human-wildlife conflicts in urban areas often involve wildlife species (e.g., raccoons, squirrels, Canada geese) that have adapted well to changes to natural habitat resulting from residential development. Impacts in residential areas include structural damage to buildings and landscaping and fouling of parks and recreation areas. Expansion of permanent residential and cottage development in rural areas of the province has also been accompanied by increased human-wildlife conflicts.
- Vehicle-wildlife collisions result in injury or mortality of both wildlife and humans, as well as substantial damage to motor vehicles. Wildlife-plane collisions are also of concern at some airports and runways.
- The potential for disease transmission between wildlife and domestic animals or to humans is an ongoing concern. While major initiatives have limited the incidence and spread of rabies in Ontario, pathogens such as chronic wasting disease and avian influenza are receiving greater attention at provincial, national and international levels.

- Populations of some wildlife species can cause ecological impacts that are in conflict with objectives associated with conserving and maintaining biodiversity. For example, intensive foraging by white-tailed deer can alter ecological processes and physically impact habitat of species at risk.

There is a need for better understanding and awareness of the nature and complexity of factors contributing to human-wildlife conflicts in Ontario, including climatic factors, land use, agricultural practices and wildlife management initiatives. Reduced winter severity associated with long-term climate change and shifts in agricultural land use practices in recent decades has created favourable environmental conditions for some wildlife species, such as white-tailed deer. There are currently underway enhanced government efforts to conserve and protect species and their habitat. In support of “sustainable development”, there is recognition of the importance of the natural environment in the lives of Ontarians. However, these efforts may have incidental consequences of increasing human-wildlife interactions, which need to be managed to maintain a healthy balance between the need for socio-economic development and protection of the natural environment.

The number of people in southern Ontario has increased from 8.5 million in 1980 to 12.4 million in 2004. Future population growth will lead to increased urban and rural development and greater interaction with wildlife, particularly with those species able to adapt to human-induced habitat change.

### **Current Policy and Programs**

The value of wildlife conservation and management to Ontarians is reflected in government legislation and public policy initiatives that directly or indirectly conserve and protect wildlife and the environment they inhabit (e.g., *Fish and Wildlife Conservation Act*, *Provincial Parks Act*, *Endangered Species Act*, *Natural Spaces Program*, *The Greenbelt Plan*, *Oak Ridges Moraine Conservation Act*, *The Nutrient Management Act*, *Ontario Trails Strategy*, *Agricultural Policy Framework*). It is important that human-wildlife conflict issues be considered in the context of initiatives intended to conserve biodiversity and promote sustainable development.

The province’s commitment to help Ontarians prevent and manage human-wildlife conflicts is highlighted in *Our Sustainable Future* and *Ontario’s Biodiversity Strategy*. Both documents emphasize the importance of promoting conservation of natural resources and maintaining biodiversity. A fundamental goal is to maintain a healthy natural environment for Ontarians by protecting human health and safety and fostering economic development, both of which can be negatively affected by human-wildlife conflicts.

Government policies, programs and management tools have been developed and used to address human-wildlife conflict in Ontario. *The Livestock, Poultry and Honey Bee Protection Act* (LPHBPA) enables the province to compensate producers of cattle, horses, sheep, goats, swine, poultry, rabbits

and certain fur-bearing animals killed or injured by wolves or coyotes. Under the *Act*, the province also provides compensation for damage to honey bee colonies or hive equipment caused by black bear. The *Bear Damage to Livestock Program* provides compensation for livestock killed or injured by black bears. In recent years, the government has provided about \$700,000 annually in wildlife damage compensation under the LPHBPA and the Bear Damage to Livestock Program. The *Canada-Ontario Farm Stewardship Program (COFSP)* is also mandated to provide cost share agreements for wildlife damage prevention.

To assist Ontario farmers to address human-wildlife conflicts, the Ontario Soil and Crop Improvement Association (OSCIA) has released two brochures. "*Wildlife Wise*", prepared in partnership with the Ministry of Natural Resources (MNR), examines the human-wildlife conflicts within agricultural communities and recommends Beneficial Management Practices to mitigate human-wildlife conflict and assist with the recovery of species at risk. "*Probing Problem Wildlife*" was completed in partnership with the *Agricultural Adaptation Council and Ontario Agricultural Commodity Council* to provide a synopsis of their work on human-wildlife conflict mitigation.

The Ontario government has long been involved in trying to mitigate and manage human-wildlife conflicts. MNR's involvement at the local level has ranged from providing advice to property owners on ways to address site-specific wildlife problems to working with municipalities and agricultural groups to develop approaches over larger geographical areas. At the provincial level, MNR has recently implemented a coordinated approach to managing human-bear conflicts through the "*Bear Wise*" Program. The program focuses on awareness and education, prevention, reporting and response.

Through the Ontario Stewardship Program, MNR has worked closely with community representatives to foster environmental appreciation and participation in resource management. Numerous workshops have occurred to better understand the factors that contribute to human-wildlife conflicts and to promote actions to mitigate human-wildlife conflicts.

For game species designated under provincial or federal legislation (e.g., white-tailed deer, Canada geese), government agencies have created and expanded regulated hunting opportunities when appropriate to increase the harvest of wildlife populations. However, the effectiveness of regulated hunting as a means of resolving human-wildlife conflicts involving some game species is uncertain; additional tools should be considered. For non-game species, the effectiveness of existing tools and the development of new measures need to be explored.

Members of the public are able to protect their property from damage caused by certain species of wildlife. The *Fish and Wildlife Conservation Act* permits a property owner to capture, kill or harass wildlife, excluding white-tailed deer (requires authorization from the MNR), moose, caribou, and elk to protect the

person's property, provided the owner has reasonable grounds to believe that the wildlife has damaged or is about to damage their property. Some wildlife species in Ontario are federally regulated. For example, a landowner of Ontario must have authorization from Environment Canada, under the federal *Migratory Birds Convention Act*, in order to kill Canada geese in protection of property.

Although the emergence of “*animal control*” or “*wildlife removal*” enterprises in the private sector has provided a mechanism for property owners wishing to deal with problems caused by wildlife, there may be a need to review and improve licensing and enforcement of businesses that participate in capture and/or relocation of animals.

Wildlife rehabilitation organizations offer human wildlife conflict mitigation advice and assist with the care and release of orphaned and injured wildlife. This service is particularly important in urban areas, where small mammals such as raccoons, skunks, squirrels and bats create issues in residential areas. The resources and expertise to deal effectively with these situations are often lacking in municipal and provincial agencies; wildlife rehabilitators and wildlife control companies can fill a key role in working with homeowners to apply practical solutions to human-wildlife conflicts.

## **2.0 Challenges**

### **Balancing Social Values**

There is a wide diversity of values associated with wildlife. Intrinsic values are those values associated with nature itself, independent of any direct usefulness to humans. Benefits to humans are commonly expressed in social and economic as well as emotional, spiritual and physical terms.

While most Ontarians have had interaction with wildlife, both positive and negative, not all agree on how human-wildlife conflicts should be addressed. Achieving consensus on strategies to prevent and manage human-wildlife conflicts will be challenging in light of the diversity of interests. Finding specific approaches to mitigating human-wildlife conflicts will require consideration of the wide range of values associated with different wildlife communities and the environment.

### **Ensuring Human Health and Safety**

Ensuring the health and safety of Ontarians is an important consideration in dealing with human-wildlife conflicts. There is a need for better understanding and awareness of the nature and complexity of factors contributing to vehicle-wildlife collisions, aircraft-wildlife collisions, spread of zoonotic diseases, and direct injury or fatality of humans through contact with wildlife.

Throughout Ontario, and particularly southern Ontario, the number of vehicle-wildlife collisions has been steadily increasing. For example, the number of reported vehicle-wildlife collisions increased from 7,388 in 1994 to 13,729 in 2003; an increase of 86 percent. Collisions with large wildlife such as deer or moose often result in serious vehicle damage, and human and wildlife injury or fatality. In the last 10 years, 54 people lost their lives in vehicle collisions with wildlife in Ontario. It is acknowledged that a great many more human fatalities are attributed to careless driving, excessive speed, alcohol consumption, inclement weather and other factors over the same period. However, vehicle collisions with large ungulates continue to be a source of concern in some parts of the province (e.g., deer in the Ottawa area and moose in the Sault Ste. Marie-Wawa corridor).

Wildlife-plane collisions are also potentially hazardous where airports and runways are located in close proximity to wildlife habitat. Transport Canada requires that each airport have an animal control program to address potential risks associated with wildlife.

Infectious diseases transmitted directly or indirectly from wildlife to domestic animals and humans are a cause of increased public concern and media attention. In recent years, Lyme disease, West Nile virus, bovine tuberculosis and Chronic Wasting Disease have emerged in North America as potential health risks associated with wildlife, in addition to more established diseases such as rabies and tularemia. The need for integrated surveillance for disease in the human, wildlife and domestic animal populations is an emerging priority in order to assess and manage the risks associated with these shared diseases. Recent experience in Asia and Europe suggest that disease prevention efforts may pose significant challenges for public health authorities and wildlife managers.

### **Reducing Adverse Economic Impacts**

In Ontario, the agricultural community has highlighted concerns about reduced agricultural productivity and lost economic opportunity caused by wildlife, in some areas of the province. In addition to wildlife predation on livestock, wildlife foraging on corn, soybeans and vegetable crops, deer browsing in orchards, and black bear damage to beehives and oat fields are examples of major issues identified by the agricultural community. "Non-traditional" species such as emu, ostrich, deer, or elk are not eligible for provincial compensation programs, nor are losses due to predators other than wolves, coyotes or bears (e.g. foxes, fishers and mink). In 2000, the OSCIA released a study, "*Wildlife Impact Assessment for Ontario Agriculture*", which estimated that the cost of wildlife damages on Ontario farms was over \$41 million in 1998. It's important to note that some agricultural areas in Ontario are much more directly impacted by wildlife damage than are others and that human-wildlife conflicts vary at the landscape, community and site level. Cost to farmers also included an estimated \$7.5 million in abatement measures.

Human-wildlife conflict can have adverse economic impacts on non-agricultural sectors. For example, vehicle-wildlife collisions often result in repair costs, medical costs, insurance costs (both for vehicle owners and insurance agencies), investigative or policing costs, costs associated with carcass removal by road departments, and the costs of education and abatement directed at preventing vehicle-wildlife collisions.

A primary challenge is to find ways of mitigating and/or offsetting adverse economic impacts from human-wildlife conflicts. This may include determining and managing for appropriate wildlife population levels as well as designing prevention and mitigation measures. In the case of agricultural producers, this may also include exploring opportunities for compensation or abatement for significant wildlife-related losses. In attempting to quantify and minimize economic losses to agriculture and other sectors, the economic *benefits* of wildlife (e.g., recreational and tourism benefits, contribution to healthy ecosystem functions, etc.) must be given careful consideration.

### **Conserving Biodiversity**

Ontario's Biodiversity Strategy (OBS) goals focus on the protection of genetic, species, and ecosystem diversity, and the use and development of biological assets in sustainable ways for the benefit of Ontarians. The strategy also recognizes that attainment of these goals will not be easy, and that Ontarians will need to address a number of complex issues. One of these complex issues involves managing human-wildlife conflicts, and the OBS identifies the need to manage this issue by engaging private landowners and "developing a strategy for the management of problem wildlife in cooperation with the agricultural community".

Healthy ecosystems are critical to the health and well being of Ontario citizens. However, managing for vibrant ecosystems near urban and suburban areas may result in serious human-wildlife conflicts. Government and NGO programs that conserve natural heritage areas (e.g. wetlands and woodlands) may result in favourable habitat for many wildlife species such as white-tailed deer, thereby increasing the potential for human-wildlife interactions and conflicts.

Developing and implementing measures to mitigate human-wildlife conflict issues will contribute to conserving and maintaining biodiversity in Ontario (e.g., by taking the steps to mitigate human-wildlife conflicts, the numbers of animals killed "in protection of property" may be reduced).

Some species can have a profound impact on the environment and biodiversity of sensitive and unique areas. When such cases exist, it may be necessary to reduce the population size in order to conserve biodiversity and ecological integrity within a given community.

## **3.0 Guiding Principles**

All Ontarians share an interest in conserving natural resources and utilizing resources in an ecologically sustainable way to ensure those resources are available for the enjoyment and use for present and future generations. This commitment will promote healthy natural environments, economic growth, and public and environmental safety.

The following principles for preventing and managing human-wildlife conflicts provide guidance for the development and implementation of this strategy.

- The people of Ontario recognize that wildlife has intrinsic, ecological, economic, social and cultural values
- Ontarians desire healthy and sustainable wildlife populations
- All residents of the province share responsibility for preventing and managing human-wildlife conflicts
- Effectiveness of prevention and management strategies is dependent on implementation of a variety of practical solutions through collaboration and discussion among stakeholders
- Actions to address human-wildlife conflicts must be ecologically sound and should not negatively impact the survival and recovery of species at risk
- Sound scientific and applied technical knowledge can enhance human-wildlife conflict prevention efforts and minimize risk to human health and safety
- Mechanisms to address human-wildlife conflicts must be adaptable to both public and private land ownership (e.g., cost effectiveness and affordability are factors to be considered)
- Effective outreach and education are important for mitigating for human-wildlife conflicts
- Prevention is achieved through proactive efforts and an adaptive management approach
- Management of human-wildlife conflicts should build on successful approaches demonstrated in Ontario and other jurisdictions (i.e., Best Management Practices).

These principles will serve as initial criteria against which individual proposals and initiatives can be evaluated, as tools and mechanisms for dealing with human-wildlife conflicts are developed and refined.

Ontario is not alone in addressing and managing human-wildlife conflicts. Internationally, and across North America, governments, the private sector and the general public are faced with challenges of finding real and lasting solutions to mitigate for human-wildlife conflicts. Ontario will need to continue to communicate and work closely with other jurisdictions to share information and learn from their experiences in dealing with human-wildlife conflicts. The consensus from other jurisdictions is that human-wildlife conflicts are not easily or completely resolved, requiring time, perseverance, ongoing dialogue and finite resources to implement effective solutions.



## 4.0 Goal and Objectives

The theme of this strategy is “*Working Together Toward Preventing and Managing Human-Wildlife Conflicts in Ontario*”. The over-arching goal is to gain a better awareness and understanding about the complexity of factors contributing to human-wildlife conflict in Ontario and to find ways to minimize those conflicts over the short and long term.

The following objectives reflect the key elements for mitigating for human-wildlife conflicts in Ontario:

1. To establish provincial leadership roles and responsibility for action.
2. To promote community-based solutions to prevent and manage human-wildlife conflicts.
3. To increase public understanding and awareness about human-wildlife conflicts.

Desired outcomes will include the following components:

- healthy, sustainable wildlife populations
- improved public safety in human-wildlife interactions
- shared public and private sector responsibility and collaboration by stakeholders and partners
- informed decisions and science-based solutions, using best available “state of the resource” information
- harmonized, multi-jurisdictional policies to reduce local human-wildlife conflicts with clear agency roles and responsibilities
- coordinated and integrated efforts to educate society about co-existing with wildlife
- effective outreach and extension services
- fewer human-wildlife conflicts

## 5.0 Integrated Solutions Framework

The following strategies are intended to contribute to preventing and reducing human-wildlife conflicts.

Stakeholder representatives have been closely involved in the development of this document. This strategic approach will build on that interest and source of knowledge and encourage stakeholders to be actively involved in the development and implementation of management tools. Many of the following strategies require information sharing, cooperation and collaboration among all levels of government, NGOs, industry representatives, local communities, businesses, and individuals.

Progress in preventing and managing conflict will require the implementation of both short-term and long-term strategies.

## **Objective 1: To establish provincial leadership roles and responsibility for action, including the direct involvement of government agencies and stakeholders**

Strategy 1: Establish effective leadership roles by:

- forming an inter-agency group to provide provincial leadership and serve as a steering committee to review ongoing programs and address emerging issues;
- bringing together representatives of government and non-government organizations with an interest in wildlife management and conflict prevention, to review and discuss human-wildlife conflicts, make recommendations and identify potential response roles;
- building human-wildlife conflict prevention expertise within government and non-government stakeholders.

Strategy 2: Commit to collaborative action by:

- building consensus on goals for addressing human-wildlife conflicts;
- securing both public and stakeholder support;
- fostering partnerships for the implementation of strategies;
- identifying clear responsibilities and roles for partners; integrating federal, provincial, and municipal activities.

## **Objective 2: To promote community-based solutions to prevent and manage human-wildlife conflicts.**

Strategy 3: Develop a “Toolbox” to address immediate and long-term issues by:

- developing prevention and education materials and tools aimed at reducing human-wildlife conflicts;
- developing and promoting the adoption of best management practices for mitigating human-wildlife conflicts;
- reviewing and improving programs for landowners to practice resource stewardship and the conservation of wildlife, building on current initiatives;
- exploring opportunities to improve incentive programs and to use other mechanisms to support private land stewardship;
- assessing the role of landscape planning at various scales in helping to address human-wildlife conflicts.

Strategy 4: Build community-based solutions by:

- encouraging local communities to initiate discussions on conflict issues;
- engaging resource stewardship and advisory committees, representing stakeholder interests and resource professionals, to increase awareness and discuss solutions;
- connecting landowners who wish to address wildlife issues on their land with those who can contribute to resolving those problems

(e.g. extension specialists, wildlife technicians, animal control agencies, hunters, trappers, naturalists' groups).

### **Objective 3: To increase public understanding and awareness about human-wildlife conflicts.**

Strategy 5: Establish a timely and practical knowledge base by:

- developing “state of the resource” reporting;
- conducting scientific studies and expanding knowledge of life history characteristics of selected wildlife species, including population dynamics, behaviour and habitat requirements;
- updating literature and jurisdictional reviews to obtain information about the causes of and solutions to human-wildlife conflicts, building on the success of others;
- establishing demonstration and pilot projects to find creative solutions and develop effective tools to mitigate for human-wildlife conflicts;
- developing extension and outreach tools.

Strategy 6: Education to effect change by:

- integrating efforts to educate the public about understanding ecological principles, their relationship with wildlife and the life histories of wildlife that reside near them;
- incorporating information regarding human-wildlife conflicts into educational curriculum at all levels;
- informing the public about actions by humans and wildlife that result in human-wildlife conflicts;
- raising awareness of the public regarding the implications of their actions with respect to human-wildlife conflict;
- acknowledging the role of resource management activities (such as regulated hunting, habitat conservation, and wildlife rehabilitation) in addressing human-wildlife conflicts.

## **6.0 Implementation**

This document reflects the strong commitment among government and non-government agencies, interested stakeholders and affected communities in Ontario to work together to address and understand issues contributing to human-wildlife conflicts.

This strategy sets the stage for implementation and action plans to meet the established objectives. Objectives and strategies will continue to be revised and updated as Ontarians move forward in addressing the challenging issues associated with human-wildlife conflicts.

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