Framework for Enhanced Black Bear Management in Ontario

Ontario Ministry of Natural Resources
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FOREWORD

The Ontario Ministry of Natural Resources has been developing and refining the provincial black bear management program in Ontario for several decades. Much has been learned as the province has moved forward in the areas of harvest assessment, population management, allocation, population inventory, communication, resolution of human-bear conflicts, and science and research. This document, *Framework for Enhanced Black Bear Management in Ontario*, is an attempt to consolidate, in one integrated and concise document, the province's current approach and to set out the future direction with regards to landscape and ecologically based black bear management. This document forms an important step in the province's progress toward an ecosystem management approach for the management of black bear as well as the potential to enhance associated recreational opportunities where sustainable black bear populations permit.

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1.0   INTRODUCTION

Black bears are highly valued and unique members of Ontario's wildlife heritage, symbols of wilderness, an integral part of a functioning ecosystem, and an important component of Ontario's biodiversity. Black bears and human interests are also occasionally seen to be in conflict.

Bear management in Ontario has been the subject of a number of internal and external reviews that have improved the knowledge and understanding of black bear management. The development of this framework provides an opportunity to strategically address bear management challenges consistent with strategic directions for the Ontario Ministry of Natural Resources (OMNR) – *Our Sustainable Future*.

A commitment has been made to develop an enhanced bear harvest management program. The goal is to ensure the sustainability of black bear populations and the continuation and/or enhancement of bear hunting opportunities and associated economic benefits.

2.0   SCOPE

This document provides a framework for improving decision-making about black bear management in Ontario. Recognizing the challenges associated with managing wildlife across the diverse and complex ecosystems in Ontario, and the need to consider and integrate management strategies for different species, species groupings, their habitats and human activities as well as stressors such as disease and climate change, this framework focuses on information and tools needed to manage black bears within a landscape and ecosystem context. It includes updates to the provincial goal for black bear management, guiding principles, objectives and key management strategies required to enhance the management of bears. The components outlined in the framework will guide the implementation of an enhanced black bear management program. The framework will serve as direction for the black bear program including the development of landscape and ecologically based bear management objectives and harvest/allocation strategies needed to achieve those objectives. The *Fish and Wildlife Conservation Act* (FWCA) provides the legal framework for implementing an enhanced black bear management program.

Further considerations for bear management comes from recommendations of the *Nuisance Bear Review Committee Report* (August 2003) and the Auditor General of Ontario's *2007 Annual Report*, including the OMNR's response to the reports' respective recommendations. In March of 2004, the OMNR moved forward on the recommendations of the *Nuisance Bear Review Committee Report* by initiating the Bear Wise program to address public safety concerns about human-bear conflicts. The program focuses on 4 cornerstones - education and awareness, prevention, reporting and response – with an overall program goal to educate Ontarians on the benefits of

coexistence where habitats and human activities interface and to develop strategies to reduce human-bear conflicts.

The OMNR also moved forward on recommendations from the above mentioned reports relating to population management by extending the open black bear season in 2004, introducing mandatory reporting and making second seals available for resident black bear hunters in 2005, and developing this framework document to provide enhanced policy direction for bear population and habitat management, guide the review of provincial and local management objectives, and ensure the use of the best available science-based decision support tools and monitoring and assessment programs.

Progressive wildlife management policies are based on a broad range of ecological knowledge and socio-economic factors, the best available science, and an awareness of the inherent uncertainties and risks of various management actions. The policy development process must also reflect the appropriate balance between a provincially consistent framework and the flexibility to accommodate regional and local ecological differences and objectives.

An enhanced black bear management program will contribute to the conservation of black bears and their habitat and, in doing so, assist Ontario in achieving biodiversity conservation goals to (1) protect the genetic, species and ecosystem diversity of Ontario and to (2) use and develop the biological assets of Ontario sustainably and capture benefits from such use for Ontarians (*Ontario's Biodiversity Strategy 2005*). An enhanced bear management program is consistent with the recommended actions identified in the strategy to:
- continue to review new monitoring information and knowledge to ensure that the use of biological assets (e.g., forests, wildlife, fish and water) is sustainable, biodiversity is conserved and biological integrity is maintained (5.6.30), and
- review relevant legislation and regulations (5.7.36.) and other relevant resource management and planning policies (5.7.37) to identify gaps and issues and the need for potential changes for the conservation of biodiversity (protection and/or the sustainable use of natural resources).

Key elements of the enhanced black bear management program include:

- *Framework for Enhanced Black Bear Management in Ontario*
    - Policy and program objectives
    - Implementation of a landscape and ecologically-based bear management planning process and associated management tools
    - Tourism enhancements
    - Communications and outreach.

- *Backgrounder on Black Bears in Ontario*
    - Landscape and ecologically based harvest assessment approach
    - Ecologically based sustainability criteria
    - Population model.

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3.0   BLACK BEAR MANAGEMENT GOAL

The goal of Ontario's black bear management program is to ensure sustainable black bear populations across the landscape and the ecosystems on which they rely for the continuous provision of ecological, cultural, and optimal economic and social benefits for the people of Ontario.

4.0   GUIDING PRINCIPLES

Guiding principles for the black bear management were developed in the context of the OMNR's strategic direction in *Our Sustainable Future* (2005).   OMNR's mission is to manage Ontario's natural resources on the landscape and in an ecologically sustainable way to ensure they are available for the enjoyment and use of future generations.

Guiding principles:

1.   Black bears have an intrinsic value within the natural ecosystem and, through sustainable use, positive socio-economic values for the people of Ontario.
2.   Through management, black bears and humans can co-exist on the same landscape.
3.   Black bear populations and associated sustainable harvest levels vary according to landscape productivity and may influence predator/prey relationships.
4.   Harvest management strategies must recognize that black bears have an inherently low reproductive capacity relative to other harvested large mammals and that, as with other long-lived species, population growth rate is most sensitive to changes in adult survival, particularly survival of adult females.
5.   Black bear movements and annual reproductive capacity are strongly influenced by annual forage abundance and distribution. Human-bear conflicts are known to increase in years of low natural food availability.
6.   Black bear populations may be affected by climate change. Human-bear conflicts may be affected by the changing climate.
7.   Black bear management includes the management of both populations and habitat.
8.   Black bears will be managed within an adaptive management approach across the landscape.
9.   Black bear management objectives and strategies will be supported by landscape level planning and available scientific information, with consideration of related social and economic objectives.
10.   Black bear populations will be managed at the appropriate landscape scale within an ecosystem context.
11.   Economic benefits associated with black bear harvest are predicated on a sustainable black bear population.

5.0   CHALLENGES

There are a number of challenges in developing an enhanced program for black bears in Ontario. They include:

1. The black bear's inherently slow rate of recovery from low population levels increases the risks for local populations where harvest pressure and other mortality are high.

2. It is difficult to estimate black bear population size and trends.

3. Humans and bears can be in conflict, and there is a need to find ways to reduce human-bear conflicts while recognizing the importance of bears from a biodiversity perspective.

4. Black bear harvest is currently managed under a relatively open allocation system where tourist outfitter harvest can be limited.

5. There is a wide range and diversity of interest and opinion across Ontario in the understanding of black bears and their role in the ecosystem, and the appropriate way to manage them.

6. Black bears are opportunistic predators and competitors for some wild prey species (e.g., moose calves and deer fawns).

7. There is much debate about the relationship between the number of human-bear conflicts, their causes and the relationship to bear population numbers.

8. With changing land use patterns, more and more people are developing and living in rural and semi-rural areas, leading to more overlap between human and bear habitat and thus more potential for conflict.

9. Black bear populations throughout Ontario may be affected by the predicted effects of climate change due to rising air temperatures and decreased precipitation. This could contribute to increasingly frequent droughts and less food for bears leading to increasing human-bear conflict and, potentially, reproductive failure in bears.

6.0   BLACK BEAR MANAGEMENT OBJECTIVES

The following objectives are proposed for Ontario's black bear management program:

OBJECTIVE 1:   Maintain sustainable black bear populations on the landscape.

OBJECTIVE 2:   Provide the quality and quantity of black bear habitat necessary to sustain bear populations on the landscape.

OBJECTIVE 3:   Provide an effective policy and legislative framework that provides for ecologically-based sustainable management of Ontario's black bears.

OBJECTIVE 4:   Provide socio-economic benefits through the allocation of the black bear resource amongst user groups**.**

OBJECTIVE 5:   Enhance public awareness and understanding of black bear management and biology in Ontario.

OBJECTIVE 6:   Reduce human-bear conflicts through prevention, education and awareness, reporting and response.

7.0   KEY MANAGEMENT STRATEGIES AND ASSOCIATED TACTICS

The key strategies and corresponding tactics are listed under each of the black bear program objectives.

OBJECTIVE 1: Maintain sustainable black bear populations on the landscape.

Population Assessment

Managing black bears at the landscape level requires an understanding of the current population status, distribution and trends relative to the ecological carrying capacity and relationships with other species, as well as social and economic values in order to establish appropriate management objectives. A healthy age and sex structure is one of the keys to maintaining a sustainable bear population. Ongoing monitoring and research is critical for informed decision-making, sound policy development and implementing an adaptive management approach. Research should focus on addressing key knowledge gaps and risk assessment, as well as evaluating the effects of specific management actions on bear populations on the landscape and on their habitat. Population management decisions, and the assessment of their impacts, should occur on an ecologically based, landscape level.

Strategy 1.1: Improve landscape level assessment and monitoring of the status and trends of black bear populations to help ensure that management objectives are being met:

Tactics:

1.1.1 Establish and maintain a network of population monitoring stations across black bear range to monitor population trends. Utilize recent advances in technology (e.g., DNA sampling and analysis) to validate and enhance population monitoring techniques.

Strategy 1.2: Enhance assessment of human-caused black bear mortality including age and sex of the harvest ad non-hunting mortality:

Tactics:

1.2.1 Monitor/assess mandatory harvest reporting results for all bear hunters.
1.2.2 Evaluate the need for additional harvest data such as additional age (tooth) data from harvested bears
1.2.3 Enhance reporting and documentation/assessment of non-hunting black bear mortality from a variety of sources.

Strategy 1.3: Improve understanding of black bear populations at a landscape level:

Tactics:

1.3.1 Assess the need for further long-term research
1.3.2 Evaluate the influence of large protected areas, where hunting is not permitted, on the sustainable harvest levels in adjacent hunted bear populations
1.3.3 Assess similarities and differences in regional and provincial trends in bear population attributes to determine if they are similar across broad areas.
1.3.4 Determine effects of climate change on bear populations and habitat.
1.3.5 Consider need for research and monitoring initiatives to assess black bear role in ecosystem and implications for other predators/prey species.

Population Management

The maintenance of healthy, sustainable bear populations on the landscape requires the balancing of bear mortality factors with adult survival and recruitment. The influence of mortality from regulated harvest, non-hunting mortality (including problem bear kills), and natural mortality must all be assessed. Population management objectives must consider ecological, social and economic objectives, and harvest strategies must be monitored and managed to achieve these objectives.

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Strategy 1.4: Develop and implement provincial guidance on appropriate black bear harvest strategies in relation to landscape productivity.

Tactic:
1.4.1   Use landscape level and ecological considerations in the development of black bear population objectives and determination of sustainable harvest levels.
1.4.2   Finalize a system of ecologically-based harvest assessment indicators to provide tools to assess and manage the impact of harvest on black bear populations on the landscape.
1.4.3   Develop and implement a standard, comprehensive approach to bear harvest planning for resident and non-resident harvest that considers ecologically based objectives, sustainable harvest levels, biological criteria, current mortality factors and social and economic considerations.

Strategy 1.5: Develop black bear population and management objectives at the appropriate scales.

Tactic:
1.5.1   Develop planning processes for the establishment of ecologically based population and management objectives.
1.5.2   Include local objectives that identify cultural, economic, social and biological management considerations of black bear as an important part of the natural ecosystem, an opportunistic predator, a big game species, and a source of human-wildlife conflict.
1.5.3   Collaborate with local stakeholders in the setting of local bear management objectives.

Strategy 1.6: Refine and use population modeling to evaluate the potential impact of different management scenarios on bear populations.
Tactic:
1.6.1   Provide training in and access to RISKMAN, a predictive population model, to model the effects of various harvest scenarios on bear populations.
1.6.2   Use modeling results with an adaptive management approach.

Information Management

Sustainable resource management requires a commitment to long-term data management to support monitoring and informed decision-making.   Black bear data and information are obtained from a variety of sources such as harvest reporting, Black Bear Population Index Network (BBPIN) and mark-and-recapture study results (including the barbed-wire hair trap mark-recapture initiative that began in 2004), non-hunting mortality data, and problem bear reports.

Strategy 1.7: Improve collection and management of information needed to assess black bear population status:

Tactic:

1.7.1   Develop a data management system for information required to support the bear management program.

1.7.2   Explore the feasibility and cost-effectiveness of the addition of interactive service channels (e.g. internet, Interactive Voice Recognition [IVR]) for data collection from hunters.

OBJECTIVE 2:   Provide the quality and quantity of black bear habitat necessary to sustain bear populations on the landscape.

Habitat Management

Bear habitat on a broader scale is typically managed indirectly through the application of forest management guidelines and guides. Site-level management has been generally focused on considerations such as the retention of mast trees in the Great Lakes-St. Lawrence Forest. The approach to forest management planning includes landscape and stand/site guides to provide broad guidance on habitat management for a variety of species including black bears.

Strategy 2.1: Ensure an adequate supply of black bear habitat consistent with landscape based bear population objectives:

Tactics:

2.1.1   Continue to conduct bear research and assess bear population levels on the landscape in order to improve understanding of the varying ecological productivity of Ontario's landscapes and their capability to support black bear populations.

2.1.2   Provide input to existing ongoing land use and resource management processes to ensure adequate consideration and suitable management of black bear habitat.

2.1.3   Provide input on black bear habitat needs during the development of forest management guides

2.1.4   Determine the impacts of climate change on black bear habitat and methods to mitigate and adapt to those effects.

Habitat Assessment

Black bears are opportunistic foragers and bear habitat is largely defined by the diversity and distribution of a variety of seasonally available food sources and availability of security cover and denning habitat. Assessment of this habitat can help to monitor and forecast bear populations trends on the landscape.

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Strategy 2.2: Develop habitat assessment approaches to aid in assessing ecological capability for black bears:

Tactics

2.2.1   Assess the need to expand the provincial natural bear food availability survey across bear range.

2.2.2   Evaluate the need for a habitat suitability model for black bears for forest management planning purposes for both the Boreal and Great Lakes-St. Lawrence forest regions.

OBJECTIVE 3:   Provide an effective policy and legislative framework that provides for the ecologically-based sustainable management of Ontario's black bears.

Wildlife policy must consider and integrate a range of ecological, social and economic factors, within the context of wildlife sustainability. *Our Sustainable Future* and *Ontario's Biodiversity Strategy* direct that OMNR manage all resources, including wildlife, in an ecologically sustainable manner. The *Fish and Wildlife Conservation Act* and associated regulations regulate hunting and trapping activities. Policy and regulatory changes can be made to reflect required changes in direction over time.

Strategy 3.1: Maintain an effective policy and legislative framework:

Tactics:

3.1.1   Review black bear management regulations and policy direction on a regular basis to continue to enhance the provincial bear management program in consultation with public/stakeholders.

3.1.2   Apply adaptive management principles, with refinements to management approaches as new knowledge and information becomes available.

3.1.3   Policy direction should provide for both broad consistency within a common management framework, and landscape level flexibility, where feasible, to accommodate the varied ecological, social and economic fabric of Ontario.

3.1.4   Undertake a review of the Bear Management Area (BMA) system and BMA allocation criteria (as well as other regulations pertaining to the provision of non-resident bear hunting services) to ensure the allocation of opportunities to the tourist industry continues to meet the needs of both resource sustainability and the tourist industry (in consultation with public/stakeholders).

3.1.5   Identify black bear ecological zones to help inform guidelines for developing management objectives and harvest strategies.

OBJECTIVE 4: Provide socio-economic benefits through the allocation of the black bear resource among user groups.

Strategy 4.1: Monitor the harvest and resource allocation of black bears in relation to the available supply, with consideration of all user groups:

Tactics:

4.1.1 Continue to monitor the demand for and supply of black bear harvest opportunities to determine if current allocation strategies are effective.

4.1.2 Evaluate the current status of Ontario's black bear harvest allocation system to determine if refinements are required.

4.1.3 Monitor the use of enhanced hunting opportunities provided through the extension of fall hunting seasons and the provision of second seals to resident hunters to assess utilization and to determine if they are meeting established objectives.

Strategy 4.2: Enhance value-added tourism industry opportunities related to black bear hunting and viewing, within the context of black bear population sustainability:

Tactics:

4.2.1 Evaluate and consult on options to enhance tourism industry-related benefits from black bear consumptive & non-consumptive opportunities.

4.2.2 Increase dialogue with bear operators and other publics/stakeholders regarding black bear management in Ontario and associated recreational opportunities.

4.2.3 Investigate the role of operators who provide bear hunting services to resident and non-resident hunters, and implications to the Bear Management Area system.

4.2.4 Investigate the feasibility of identifying non-resident bear hunting opportunities on a multi-year basis.

OBJECTIVE 5: Enhance public awareness and understanding of black bear management and biology in Ontario.

Strategy 5.1: Increase public awareness of black bear biology, the role of black bears in the ecosystem and their management:

Tactics:

5.1.1 Develop and promote public awareness and education initiatives (e.g., Bear Wise).

5.1.2 In partnership with stakeholders develop an educational program highlighting bear biology and management for use by tourist outfitters and their clients.

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5.1.3   Raise public awareness of the need to report bears killed in protection of property.

5.1.4   Raise awareness and understanding regarding the impacts of climate change on bear populations and habitat.

OBJECTIVE 6:   Reduce human-bear conflicts through prevention, education and awareness, reporting and response.

Strategy 6.1: Continue to seek ways to prevent and reduce human-bear conflicts through the implementation of the provincial Bear Wise program.

Specific tactics are described in detail in the Bear Wise program. The four cornerstones of the Bear Wise strategy are reporting, response, prevention, and education and awareness.

8.0   IMPLEMENTATION

The implementation of the strategies outlined within this framework will require continued analysis and discussion related to identifying key priorities and requirements. The OMNR will lead the discussions on implementation with consultation with interested and affected parties and partners as appropriate.