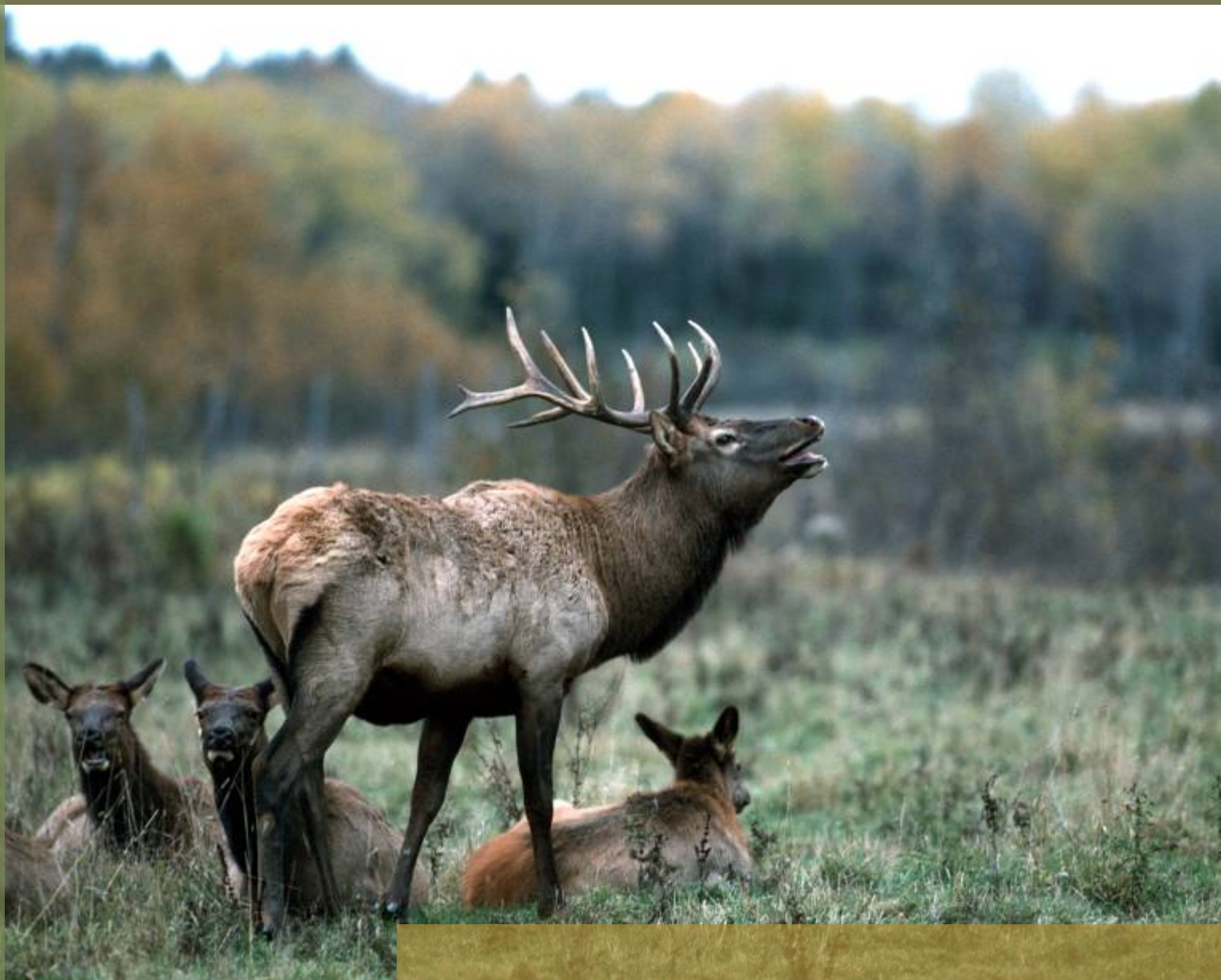


*Natural. Valued. Protected.*



## Elk Population Objective Setting Guidelines

*Ontario Ministry of Natural Resources  
January 2011*

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## 1.0 INTRODUCTION

### 1.1 Context

Native elk populations were extirpated from Ontario in the late 1800s. Restoration efforts were undertaken by the Ontario Ministry of Natural Resources (MNR) along with many partners and volunteers in the late 1990s. Because of these efforts, elk now inhabit several areas across Ontario. The restoration of elk to the province is a significant achievement and represents an important contribution to Ontario's biodiversity and the people of Ontario.

The goal of Ontario's elk management program is to support sustainable elk populations and the ecosystems on which they rely, for the continuous provision of ecological, cultural, economic and social benefits to the people of Ontario. Ontario's *Elk Management Plan* (2010) and Ontario's *Cervid Ecological Framework* (2009) provide overarching program direction for establishing elk population objectives to guide future management actions.

Elk released from 1998-2001 as part of Ontario's elk restoration program (Figure 1) have experienced differing trends in population growth across the province due to a variety of factors, including food availability, weather conditions, disease, predator abundance, and other environmental factors.

An elk population objective is the number (or range of numbers) of elk desired on the landscape to support biodiversity and provide for benefits to the people of Ontario (e.g. viewing, hunting). The setting of elk population objectives and population monitoring are important aspects of managing for sustainable elk populations.

The *Elk Population Objective Setting Guidelines* outline a planning process for determining elk population objectives that is

consistent with overarching direction set out in Ontario's *Cervid Ecological Framework* and *Elk Management Plan*. The guidelines are designed to support early and adaptive management actions for elk populations and call for consideration of the full range of ecological (e.g. habitat suitability, other cervid species, elk-ecosystem interactions) and socio-economic factors (e.g. public and stakeholder interests, aboriginal considerations, land use characteristics) when determining elk population objectives. Elk population objectives, monitoring and management strategies may change over time as elk populations change and the elk management program matures.

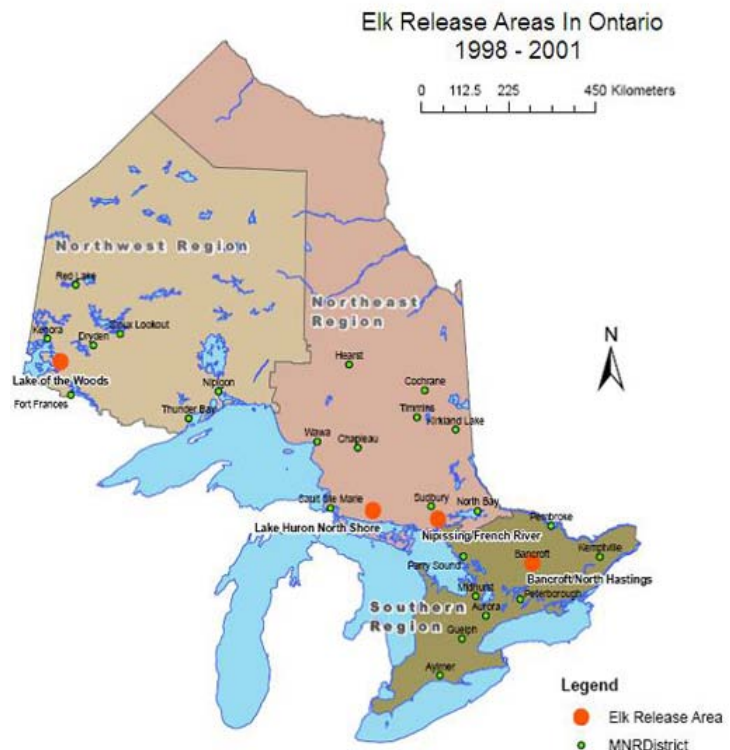


Figure 1: Map of elk release areas in Ontario.

## 1.2 Purpose

The purpose of these guidelines is to provide guidance for developing local elk population objectives with consideration of the broad range of ecological, social, cultural and economic factors that may influence elk management across the province.

Population objectives will help guide current and future management actions for elk populations. The development of population objectives will also contribute to the achievement of broader management objectives at appropriate geographic scales (e.g. Cervid Ecological Zones, sub-Zone areas, Wildlife Management Units (WMUs), and sub-WMU areas – see *2.1 Scales for Setting Population Objectives* for more information).

## 1.3 Adaptive Management Approach

Wildlife management in Ontario reflects an adaptive management approach. As new information and science is obtained it will be incorporated into the elk management program. Population objectives will be reviewed periodically to ensure they continue to support overall elk management objectives.

## 2.0 SETTING ELK POPULATION OBJECTIVES

The areas for which elk population objectives need to be established are determined with direction from Ontario's *Cervid Ecological Framework* and *Elk Management Plan*. Elk management is highlighted within Cervid Ecological Zones (CEZ) D<sub>1</sub> (north-western Ontario) and D<sub>2</sub> (central Ontario), although there is recognition that populations may exist in or expand over time into adjacent zones C<sub>1</sub>, C<sub>2</sub>, E<sub>1</sub> and E<sub>3</sub>. Population objectives and the effects of management actions will be evaluated periodically and adapted accordingly.

Population monitoring and assessment information provide an indication of population numbers and trend status, and will be used to inform the setting and evaluation of elk population objectives. Currently, elk aerial surveys are the primary method used to estimate populations. Owing to aerial survey limitations and the distribution of elk beyond survey areas, elk population estimates have inherent variability and wide confidence limits. For this reason a population objective range (rather than a single number) of +/- 20% around a mid-point value is recommended. Other methods of estimating populations to confirm or enhance results or trends should be explored and considered, where feasible.

Elk population objectives will be reviewed periodically (i.e. at least every 5 years for newly established objectives) as new and enhanced information becomes available.

### 2.1 Scales for Setting Population Objectives

To support the provision of a balance of ecological, social, cultural and economic benefits from elk, multiple scales can be used to develop and assess the achievement of elk population objectives. Population objectives need to reflect the herding nature of elk and the potential expansion of population numbers and range over time while contributing to broader program goals.



Population objectives and management actions may be focused at the sub-WMU scale during the early stages of program development, as more intensive management may be required. As the program matures and as insight is gained into how local elk herds respond to management efforts, a shift to a less intensive and broader scale of management (e.g. to the WMU and sub-Zone level) may occur over time.

Population objectives may be calculated at three scales: Sub-WMU scale, WMU scale, and CEZ or sub-Zone (i.e. portions of a CEZ) scale. Calculating population objectives at the WMU, CEZ or sub-Zone may not be necessary in all cases, and the decision to do so will depend on the size, range and distribution of the population in question (e.g. small, centralized or isolated populations will not require a calculated population objective for the entire CEZ).

### Sub-WMU Objectives

A sub-WMU population objective is the number (or range of numbers) of elk desired in a local area. Sub-WMU population objectives should be developed for local populations, which can be identified based on knowledge of local herds and social groups (e.g. group size, location, and movements as observed through monitoring activities). Sub-WMU population objectives will provide the starting point for developing population objectives for WMUs and/or overall objectives at the CEZ or sub-Zone level, where appropriate.

### Wildlife Management Unit Objectives

WMU population objectives are developed by combining sub-WMU objectives. WMU objectives may be developed where there is more than one sub-WMU objective within the WMU. The presence of other elk not accounted for in developing sub-WMU objectives (i.e. outliers not in core elk herds/areas) must be considered as part of developing WMU objectives. WMU elk population objectives may be reviewed to:

- evaluate the broader ecological and social, and economic considerations for that WMU,
- ensure that the objective is attainable based on current growth rates while still contributing to the desired future elk population levels, and
- ensure the interests expressed by stakeholders, Aboriginals, and any interested local individuals or groups are considered.

### Cervid Ecological Zone or sub-Zone Objective

CEZ or sub-Zone population objectives are developed by combining WMU objectives, or sub-WMU objectives where no WMU objectives are available. CEZ or sub-Zone objectives may be developed where there is more than one WMU objective within the CEZ or where there is more than one sub-WMU objective which overlaps WMU boundaries within the CEZ. A sub-Zone may encompass a portion of a CEZ (i.e. an area larger than a WMU) that is known to have elk (e.g. Bancroft-North Hastings herd area). CEZ or sub-Zone objectives may be reviewed to:

- evaluate the broader ecological and social, and economic considerations for that CEZ or sub-Zone,
- ensure that the objective is attainable based on current growth rates while still contributing to the desired future elk population levels, and
- ensure the interests expressed by stakeholders, Aboriginals, and any interested local individuals or groups are considered.

## 2.2 Considerations in Setting Population Objectives

### Ecological Considerations

#### *Habitat Suitability*

- Consider the number of elk that the local habitat can sustainably support based on the natural carrying capacity of the area. This consideration is important in areas where elk population size may be enhanced due to access to artificial food, either from agricultural sources or where supplemental feeding is occurring.

#### *Other Cervid Species*

- CEZs supporting core elk populations also have a management focus on moose and white-tailed deer (see *Cervid Ecological Framework*), which should be considered when developing elk population objectives.

#### *Elk-Ecosystem interactions*

- Consider elk-predator relationships.
- Consider the effects of herd sizes and/or age-sex composition on elk condition and productivity, the spread of disease, and overall ecosystem integrity.
- Consider key productivity and mortality factors.
- Consider potential effects of climate change on interactions and abundance.

### Socio-Economic Considerations

#### *Public/Stakeholder Interests*

- Public and stakeholder interests in elk population objectives should be considered, and could relate to:
  - the continued sustainability of elk populations,
  - the provision of recreational opportunities such as viewing and hunting,
  - economic benefits derived or potentially derived from recreational opportunities, and
  - the reduction or prevention of human-elk conflict (e.g. agricultural damage, safety concerns).

#### *Aboriginal Considerations*

- Respect for Aboriginal peoples' unique perspectives, traditional knowledge and practices related to elk.
- Aboriginal involvement in establishing elk population objectives.
- Constitutionally protected Aboriginal or treaty rights.

#### *Area Characteristics*

- Consider land uses (e.g. agricultural), accessibility, density of human populations and activities, and parks and protected areas.

### 3.0 ELK POPULATION OBJECTIVE ACHIEVEMENT AND ASSESSMENT

Ontario's *Cervid Ecological Framework* and *Elk Management Plan* provide strategic and specific direction for elk management and achieving population objectives. The establishment of elk population objectives at appropriate scales will help guide future management actions.

Population monitoring and assessment information will be used to evaluate the ongoing achievement of elk population objectives. Where feasible, population monitoring activities should be considered within the context of the multi-scale approach described in this guideline. As part of ongoing population assessment, local elk managers will need to consider if any factors affecting the population need to be more specifically addressed through management actions, including:

- Planned Harvest: refer to *Elk Harvest Management Guidelines*,
- Unplanned Harvest: work with local communities to enhance education/communication
- Other Species: incorporate elk population objectives into local management of other species (e.g. other cervids, predator-prey relationships)
- Disease: identify ways to address significant disease threats
- Vehicle Collisions: identify potential actions to reduce significant problems
- Habitat: consider areas for natural habitat enhancement, where appropriate

In addition to the above, it is important to recognize other broad scale factors that may influence or affect the long-term achievement of population objectives (e.g. climate change). In all cases, an adaptive management approach should be applied to ensure action is taken, as appropriate, in response to continued evaluation and improvement of population objectives based on new knowledge and experience. Population objectives should be examined relative to population monitoring information to assess the overall level of achievement.

### 4.0 SUMMARY

The *Elk Population Objective Setting Guidelines* are guided by the strategic direction from Ontario's *Cervid Ecological Framework* and Ontario's *Elk Management Plan*, and help support Ontario's elk management program objectives. These guidelines support the preparation of local elk population objectives and include consideration of the broad range of ecological, social, cultural and economic factors that may influence elk management across the province. Preparation of local elk population objectives is a critical step to ensuring responsible and responsive elk management, and is part of the continued development of the ministry's elk management program as it evolves from a restoration based program to one focused on sustainable management.



## 5.0 REFERENCES

Ontario Ministry of Natural Resources (MNR). 2009. Cervid Ecological Framework. Peterborough, Ontario. 18 p

Ontario Ministry of Natural Resources (MNR). 2010. Elk Management Plan. Peterborough, Ontario. 15 p.

Ontario Ministry of Natural Resources (MNR). 2010. Elk Harvest Management Guidelines. Peterborough, Ontario. 8 p.

Ontario Ministry of Natural Resources (MNR). 2010. Elk Harvest Allocation System. Peterborough, Ontario. 4 p.

Or for additional information, visit the Ministry of Natural Resources website:

[Elk Management in Ontario](#)