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Elk Harvest Management Guidelines

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1.0 INTRODUCTION

1.1 Context

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. One of the objectives of Ontario's *Elk Management Plan (2010)* is to provide recreational harvest opportunities where self-sustaining populations exist.

Implementing an elk hunt premised on the sustainability of the elk herd requires the development of an elk management and harvest regime consisting of a number of processes, including the development of population objectives, harvest strategies, an allocation system and associated regulatory oversight to aid in compliance efforts.

These *Elk Harvest Management Guidelines* outline a planning process for determining elk harvest management strategies that support the achievement of goals and objectives set out in Ontario's *Cervid Ecological Framework (2009)* and *Elk Management Plan (2010)*. This guideline is designed to support early and adaptive elk harvest management strategies that can be implemented where harvest opportunities are identified. They provide for a standardized, simple and transparent process for achieving elk management goals and population objectives.

1.2 Scope

Elk harvest management in these guidelines refers to the planning and management of an elk harvest that is biologically suitable, socially acceptable and ecologically sustainable. Setting of population objectives and allocation of the harvest amongst various users is not considered in these guidelines and is described in the documents *Elk Population Objective Setting Guidelines* and *Elk Harvest Allocation System in Ontario*.

1.3 Purpose

The purpose of these guidelines is to present the range of harvest management actions that can be used to help achieve elk population objectives at a variety of management scales.

2.0 ELK HARVEST MANAGEMENT PRINCIPLES

The following general principles will be applied in the determination and use of elk harvest management strategies in Ontario. These principles reflect Ontario's current approach to elk and cervid management as outlined in Ontario's *Elk Management Plan (2010)* and Ontario's *Cervid Ecological Framework (2009)*:

1. *Adaptive*: Decisions are based on the best available knowledge. They will be periodically evaluated and may be refined as new information becomes available.
2. *Ecological*: Consideration of the broader ecosystem and population objectives will help maintain natural ecosystem processes and functions that support a productive and healthy elk population.

3. *Strategic Management Scales*: Harvest management strategies will contribute to broader landscape level objectives (e.g. Cervid Ecological Zone or sub-Zone) and support the achievement of local objectives (e.g. Wildlife Management Unit or sub-WMU/herd level).
4. *Standardize and Simplify*: Where feasible, use standard and simple harvest management strategies across an appropriate scale (i.e. Cervid Ecological Zone or sub-Zone).
5. *Socio-economic/cultural*: Harvest opportunities are to provide social, economic and cultural benefits to the people of Ontario while contributing to broader elk management objectives (e.g. preventing and managing human-elk conflicts).
6. *Transparent*: Preparing and implementing harvest management strategies will be done in consultation with the public and stakeholders.

3.0 ELK HARVEST MANAGEMENT PLANNING PROCESS

Elk harvest management planning in Ontario is an iterative three-step process, including:

1. Planning the Elk Harvest
2. Managing the Elk Harvest
3. Assessing the Elk Harvest

These steps are covered in the following sections in more detail.

3.1 Planning the Elk Harvest

Planning the elk harvest involves identifying populations or herds at the appropriate scale in which harvest opportunities exist. This is determined by assessing the current elk population estimate within a particular area relative to the population objective. Population objectives are determined using the *Elk Population Objective Setting Guidelines*. Consideration should be given to the variability and wide confidence limits in current population estimates and other methods of estimating populations to confirm or enhance results or trends should be explored and considered, where possible, when identifying where harvest opportunities may exist.

The following table from Ontario's *Elk Management Plan (2010)* provides a general overview of when a harvest may be considered:

Population Level Relative to Objective	Population Trend		
	Increasing	Stable	Decreasing
Above Objective	consider a harvest	consider a harvest	consider a harvest
Meeting Objective	consider a harvest	consider a harvest <i>use caution - examine population mortality and productivity</i>	consider a harvest <i>use caution - examine population mortality and productivity</i>
Below Objective	consider harvest <i>use caution - examine population mortality and productivity</i>	consider a harvest <i>use caution - examine population mortality and productivity</i>	do not consider a harvest

Annual Elk Harvest Plans will be developed for areas where it is determined that harvest opportunities exist. Annual Elk Harvest Plans are intended to support the achievement of local population objectives (i.e. sub-Zone, Wildlife Management Unit or sub-WMU level), while contributing to broader landscape level objectives that are set out in Ontario's *Cervid Ecological Framework*.

Local biologists will review elk population objectives, elk population status and trend information, and harvest success rates (if applicable) annually, and together with consideration of social, economic and cultural factors they will assess whether the harvest is contributing to the achievement of local and landscape level objectives. Adjustments may be made annually, and will include a decision as to whether an elk hunt is appropriate for the following year.

Preparing annual Elk Harvest Plans will be done in the following manner:

- Elk Harvest Plans will be prepared by the local District using provincial tools/worksheets provided.
- Elk Harvest Plans may be prepared at various scales (i.e. Cervid Ecological Zone, sub-Zone, WMU or sub-WMU) depending on the scale that the elk population objective was established (e.g. an elk harvest plan may be developed for the Bancroft-North Hastings herd area to support harvest management).
- Elk harvest plans will be finalized by early March and will utilize the most recent monitoring and harvest information. Harvest quotas will be communicated in the annual Hunting Regulations Summary.
- Elk harvest plans will be prepared and reviewed/updated annually as new information is available. New information may include: a new aerial survey, a significant change or trend in tag filling rates, or adjustments to population objectives.

Calculating the Allowable Harvest

The allowable harvest is the proportion of a herd (either a percentage or total number of elk) that may be considered available for harvest. Calculating the allowable harvest is a key component of planning the elk harvest. The allowable harvest is dependent on the population trend data relative to the set population objective, trends in harvest, and current rates of population growth which includes productivity, mortality, and net recruitment considerations. For example, if the objective is to increase the population, a low harvest rate would be applied. Alternatively, if the objective is to decrease the population, a higher harvest rate may be applied.

The annual rate of population growth should be determined and, if rates are high (i.e. greater than 20% annual growth) and the population is at or above the objective, using a higher harvest rate may be appropriate in order to meet population objectives. Expected recruitment from calves to adults in the population and trend data over time can assist in determining the allowable harvest. Net recruitment can be estimated using the percent calves and number of calves per one-hundred cows from mid-winter aerial surveys.

Consideration should be given to the variability and wide confidence limits in current population estimates. Other methods of estimating populations to confirm or enhance results or trends should be explored and considered, where possible, when considering the allowable harvest.

Calculating Quotas and Estimating Fill Rates

The quota (i.e. number of seals available) is calculated by considering the allowable harvest in relation to an estimated fill rate (i.e. success rate). An analysis of other jurisdictions has shown that a new elk harvest regime typically experiences one-hundred percent or near one-hundred percent harvest success rates in the early stages of harvest management. It is recommended that one seal be issued per available animal until additional data is collected to determine trends in harvest and success rates. Using the adaptive management approach, a three to five year average success rate may be used once those data are available.

Consultation and Coordination

Public involvement and consultation in the development of the *Cervid Ecological Framework* and provincial *Elk Management Plan* have helped ensure that elk management is responsive to ecological and societal needs and interests. Further consultation will occur when an elk hunting season is proposed for any Wildlife Management Unit (WMU). Districts considering an open season for elk harvest will be encouraged to discuss elk harvest planning with local committees, stakeholders and interested or affected parties. Finalized elk harvest plans will be made available to the public.

The harvest management planning process will be coordinated across a Cervid Ecological Zone or sub-Zone (i.e. aggregate of several WMUs).

3.2 Managing the Elk Harvest

Harvest management strategies are the methods and techniques used to manage the elk harvest (e.g. harvest system, seasons, firearms, etc). They are used to assist in achieving population objectives at multiple scales (e.g. Cervid Ecological Zone, sub-Zone, Wildlife Management Unit, sub-WMU). Refer to the *Elk Population Objectives Setting Guidelines* for more information on setting elk population objectives.

This section provides information about the range of potential elk harvest management strategies available for use in Ontario and how they can be employed.

Types of Elk Harvest Management Strategies

Ontario's elk harvest management strategies were prepared in discussion with experts and based on an analysis of the harvest management strategies employed by other jurisdictions comparable to Ontario.

The harvest management strategies for Ontario fall into the following general categories:

- A. Selective Harvest System: type (adult bull/cow) of elk harvest
- B. Seasons: timing of elk hunt
- C. Scale of Management: geography over which elk can be harvested
- D. Gear: use of firearms
- E. Hunter Management: party hunting.
- F. Other Conditions

These strategies are intended to guide elk harvest management during its early stages in Ontario and will be reviewed and adapted as new information and knowledge becomes available. The following elk harvest management strategies best support the objectives of *Ontario's Elk Management Plan (2010)* and will be considered for use in Ontario.

Category and/or Strategy	Rationale & Considerations
A. Selective Harvest System	
<p>A selective harvest system will be used to help manage elk harvest. The selective harvest system allows for the controlled harvest of bulls and cows by limiting the available number of bull and cow seals.</p>	<p>The use of a selective harvest system is an important factor in maintaining an appropriate sex structure within elk herds and optimizing productivity. The sex structure of the population as compared to the desired population objective will determine the number of bulls and cows available for harvest each year. The harvest ratio between bulls and cows can be adjusted to help meet population objectives.</p> <p>Generally a ratio of 20 bulls to 100 cows would support adequate reproduction and minimize competition between bulls. Other bull to cow ratios may be considered depending on local circumstances and management objectives.</p> <p>An optimal calf to cow ratio will allow for recruitment potential within the population. A ratio of 35 calves per 100 cows is estimated to provide good recruitment potential. Cow harvest will be planned based on the population objective and consideration of the recruitment potential of the herd.</p> <p>Consistent with an adaptive management approach, future consideration may be given to introducing an age-based control to the harvest where antler class restrictions are established in order to balance the harvest of immature and mature bulls. No calf harvest is being considered at this time.</p>
B. Hunting Seasons	
<p>7 day hunting season in late September (i.e. third week in September)</p>	<p>A one week hunting season can be considered when establishing new open seasons in the province. The initial implementation of a short season is consistent with the objectives of the <i>Elk Management Plan</i>. The timing of this open season will allow for hunting during bugling season.</p>
<p>14 day hunting season in late September (i.e. third and fourth week in September)</p>	<p>A two week hunting season can be considered in future years if a longer hunting opportunity is desired either to help increase success rates or to address social, economic or cultural factors.</p>
<p>7 day hunting season in late December (i.e. third week in December).</p>	<p>A late hunting season can be considered in addition to a one or two week early season as described above to provide enhanced hunting opportunities or where planned harvests are not being met. Late hunting seasons are common in other jurisdictions. Efforts will be made to minimize overlapping cervid hunting seasons.</p>
C. Scales of Management	
<p>Cervid Ecological Zones (CEZs) or sub-Zones</p>	<p>Ontario's <i>Cervid Ecological Framework</i> provides overarching strategic guidance for population management and objectives at the broader landscape level. Sub-Zones may be the most appropriate scale of management in cases where population objectives overlap several WMUs, but not all WMUs in a Zone.</p> <p>Note: Elk management is highlighted within Cervid Ecological Zones (CEZ) D₁ (north western Ontario) and D₂ (central Ontario), although there is recognition that populations may exist and expand over time into adjacent zones C₁, C₂, E₁ and E₃. These areas may have potential to support elk herds but they are either not yet established there or they are not directly being managed for owing to very low densities (i.e. Cervid Ecological Zone E₃). As elk populations continue to expand/grow there may become areas where elk harvest and population management is conducted more actively. In some cases it may be desirable to open hunting seasons in these areas to help achieve broader CEZ objectives.</p>

Wildlife Management Units (WMU)	A WMU scale is generally used to set wildlife harvest quotas and allocate hunting opportunities as well as to achieve local population/management objectives and contribute to broader landscape level objectives. In some cases, the WMU scale may be too large to affect management objectives at the herd level (i.e. to adjust bull to cow ratios in a specific herd)
Sub-WMU (i.e. portions of a WMU) or herd level areas	The herding behaviour and sporadic distribution and density of elk across the landscape may require management actions to occur at levels smaller than the WMU scale (i.e. sub-WMU scale), such as at the individual herd level.
D. Gear - Firearms	
Any firearm type (bow, muzzleloader, rifle, shotgun)	Firearms restrictions as specified in the <i>Fish and Wildlife Conservation Act</i> for moose hunting (i.e. minimum draw weights, shot size and centre fire rifles only) will also apply to elk hunting. Allowing elk to be hunted with a variety of firearms provides a diversity of hunting opportunities. Future consideration may be given to establishing separate seasons for different firearm types (e.g. bow only season, bow and muzzle-loading guns only season, etc/)
E. Hunter Management - Party Hunting	
Modified Party Hunting	Hunters successful in the draw, will be able to hunt in a party made up of no more than four members (including tag holder). See <i>Elk Harvest Allocation System</i> for more information about eligibility requirements and application process.
F. Other Conditions	
No dogs allowed	Dogs will not be allowed while elk hunting.
Hunting on private land.	Written landowner permission will be required to hunt on private land.

Note about Collared Elk

In areas of the province where harvest management is implemented, the harvest of collared elk will be discouraged. These collared animals are an important component of ongoing elk research and monitoring programs. In addition, many of these animals have been ear-tagged and chemically immobilized in the past using veterinary drugs. Health Canada has established recommended guidelines for consumption of these animals, and the Ministry cannot guarantee that these animals will be suitable for consumption at the time of harvest. No replacement seals will be issued in these circumstances.

Using Elk Harvest Management Strategies

- *Area of Application* – To the greatest extent possible, harvest management strategies will be applied consistently within a Cervid Ecological Zone or sub-Zone. Circumstances in adjacent Zones will also need to be considered. This is in recognition of the important role wildlife play in Ontario's ecosystems and that local management efforts contribute to broader landscape and ecologically-based objectives. This also helps ensure that elk hunting regulations are standardized and relatively easy to understand and implement.
- *Review* - Harvest management strategies will be reviewed periodically. This may occur when evaluating the progress made towards attaining set population objectives, or in response to other new information. Ideally harvest management strategies will remain relatively stable while still allowing flexibility. If a different harvest management strategy is required there is a need for co-ordination and consultation. Timely and responsive decision-making is an important consideration in ensuring healthy elk populations.

- *Effective* – Harvest management strategies need to be effective, acceptable and easily administered.
- *Coordination* – Coordinating harvest management across multiple WMUs and within cervid ecological zones facilitates the consideration of broader landscape, ecological factors.
- *Consultation* - Consultation is required for any significant changes to the harvest management system. Depending on the magnitude or type of change, a posting on the Environmental Registry may be considered and required (e.g. policy or regulation proposal).

3.3 Assessing Elk Harvest

Estimating the Harvest

Mandatory Hunt Reporting: Mandatory hunt reporting will be required. Mandatory reporting is a useful tool to collect information about elk harvest, hunting effort, and biological information, particularly during the initial years of an elk hunt where limited hunting opportunities and harvest is expected. Harvest effort and biological information will be examined on an annual basis and incorporated into annual harvest plans.

Registration of Harvested Elk: Hunters may be asked to bring their harvested elk to a check station designated by MNR in order to collect biological samples (e.g., teeth, hair) for genetics, aging, disease testing, etc. This will allow more detailed monitoring of ages and health of animals harvested, particularly during the initial years of an elk hunt where limited hunting opportunities and harvest is expected.

Reporting

The elk harvest estimates will be calculated and reported consistently in order to make direct comparisons within and between Cervid Ecological Zones, sub-Zones, WMUs and sub-WMU areas (i.e. portions of a WMU). The following standard calculations will be employed:

Number of Elk Harvested – The main measurement for comparison through time within each harvest area (i.e., CEZ, sub-Zone, WMU or sub-WMU) is the estimated number of bulls, cows and total elk harvested.

Elk Harvest Density – Elk harvest density is used to standardize comparisons within and between each harvest area (i.e. CEZ, sub-Zone, WMU or sub-WMU). Harvest densities for bulls, cows, and total animals should be reported. Calculations for harvest density should include both land and water.

Other Statistics

Hunter effort and harvest per unit effort are useful measures of the contribution and benefits of hunting activity. The following statistics can offer valuable information to help manage elk sustainably:

Effort - Hunter Numbers and Hunter Days - These are standard measurements of the amount of hunting in each harvest area. These are reported by bull, cow, and total seals.

Pressure - Hunters and Hunter Days per 100 km² - These are standard measurements of the intensity of hunting or crowding, and are used in comparisons within or between harvest areas. These are reported by bull, cow, and total seals.

Harvest per Unit Effort - Hunter Success Rate (%) and Hunter Days per Elk Harvested - These are standard measures of hunting success or quality. Hunter success rate (or fill rate) may be used in determining the number of seals issued to take the allowable harvest (see 3.1 *Planning the Elk Harvest*). These are reported for bull, cow, and total seals.

Number of Elk Observed – Number of live elk seen recorded by age and sex classes. This can be reported as number of elk seen per hunter day to control for variations in effort from year to year and may be used as an index of population trends.

4.0 SUMMARY

The *Elk Harvest Management 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 outline a suite of potential harvest strategies that can be implemented where harvest opportunities are identified, and provide a standardized, simple and transparent process for achieving elk population objectives and objectives identified in Ontario's *Elk Management Plan*.

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 Population Objective Setting Guidelines*. Peterborough, Ontario. 6 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](#)