

2010 to 2014

Kootenay Elk Management Plan



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Executive summary

Ministry of Environment (MoE) staff in the Kootenay Region used a structured decision making process to assess and make recommendations for elk management in seven Population Management Units (PMUs): West Kootenay North, West Kootenay South, Creston, North Rocky Mountain Trench, South Rocky Mountain Trench, Elk Valley and Flathead (see Figure 1, page 7). The elk populations, objectives and management issues vary substantially among these PMUs, requiring a unique assessment for each.

In consultation with First Nations, stakeholder groups, staff from other ministries and the general public, MoE staff identified objectives and management options for each PMU, and weighed the costs and benefits of these different management alternatives. Objectives focused on population management, hunting and viewing opportunities, management and enforcement, ecosystem health, and agriculture.

The following management direction is recommended for each PMU, with regular monitoring and evaluation to determine whether the management approach meets stated objectives:

West Kootenay North: Allow the population to stabilize or increase under a 6-point or better bull elk General Open Season (GOS), with no antlerless (cow or calf) elk hunting.

West Kootenay South: Stabilize the population under a 6-point or better GOS and with Limited Entry Hunting (LEH) on antlerless elk in the Slocan and Castlegar areas.

Creston: Reduce the population in Creston agricultural areas by about 30% (20-40%) over 3 to 5 years, through a combination of GOS and LEH hunts on antlerless elk. Allow subpopulations outside of the agricultural areas to stabilize or increase under a 6-point or better GOS.

North Trench: Stabilize the population under a 6-point or better GOS and LEH for antlerless elk in the special hunt zone (Zone X of Management Unit 4-26). Following more in-depth consultation with landowners, hunters and First Nations, consider expanding antlerless elk hunting to portions of other Management Units in 2011, to address crop depredation and over-grazing.

South Trench: Reduce the population wintering in the South Trench by about 30% (20-40%) over 3 to 5 years, through a combination of GOS and LEH hunts on antlerless elk. Allow subpopulations that winter outside of the South Trench to stabilize or increase under a 6-point or better GOS.

Elk Valley: Reduce the population in portions of the Elk Valley (Fernie to just north of Elkford, as defined by a revised special hunt zone) by about 20% (10-30%) over 3 to 5 years, through a combination of GOS and LEH hunts on antlerless elk. Assess subpopulations outside of this area to determine whether population reductions are required to meet objectives, and consider expanding antlerless elk hunts in 2011.

Flathead: Allow the population to stabilize or increase under a 6-point or better bull elk GOS, with no antlerless elk hunting.

For each PMU, hunting regulation proposals were developed based on: (1) the recommended management direction, (2) public feedback on hunting proposals and (3) the Ministry of Environment's tests for regulation simplicity, harmonization within and among regions, increased hunting opportunity and maintaining management costs within budgets.

Introduction

Ministry of Environment (MoE) staff in the Kootenay Region developed this 2010-2014 Elk Management Plan for the Kootenay Region in consultation with First Nations, stakeholder groups and staff from other Ministries, and based on feedback from web-based public consultation.

The 2005-2009 management plan for the East Kootenay (Wilson and Morley 2005) had expired and there was no management plan for the West Kootenay. The 2010-2014 Elk Management Plan focuses on population management and harvest strategies across the region. Important management issues such as ecosystem restoration, access management, control of noxious weeds, and predator management can be expected to influence management outcomes, but are outside the scope of this plan.

The goals for elk management in the Kootenay Region are:

1. Ensure healthy elk populations over the short and long term
2. Manage elk populations to meet First Nations needs for sustenance, social and ceremonial purposes
3. Maximize sustainable hunting and wildlife viewing opportunities over the short and long term
4. Reduce elk grazing pressure where elk populations exceed allocated forage supply; determine forage supply in conjunction with the Ministry of Forests and Range (MFR) by considering range health, timing of grazing, and the forage requirements of other wildlife and livestock
5. Reduce elk crop depredation on private agricultural land

Elk management direction for areas throughout the Kootenay Region was determined using the following steps:

1. Delineated **Population Management Units (PMUs)**, which are broad areas where elk populations are continuous and management objectives are relatively consistent
2. Identified **Objectives** for each elk PMU
3. Determined the **Importance** of each objective in each PMU (for example, elk crop depredation is an issue in some PMUs, but not others)
4. Identified **Management Alternatives**, which are broad options for management direction that could be applied to a PMU (for example, increasing or decreasing an elk population, or focusing on high bull to cow ratios)
5. Developed **Consequence Tables** to assess how well each management alternative addresses each elk management objective
6. Determined the **Recommended Management Direction** for each PMU, by using Consequence Table results, as well as feedback from consultation

Following the above steps, MoE staff developed specific hunting regulation proposals that addressed the selected management alternatives for each Population Management Unit, as well as MoE “tests” for regulation simplicity, harmonization within and among regions, increased hunting opportunity and maintaining management costs within budgets.

Public consultation

MoE staff consulted on various aspects of the elk management plan primarily through discussions with committees and organizations in the Kootenay Region. In part this was because of limited resources for public meetings throughout the region. In addition, public meetings in the past have tended to divide rather than unite people with differing viewpoints. Public consultation included:

2008: Advised regional committees that an elk management plan was going to be developed in 2009, so that committee members could begin to engage their respective groups in elk management discussions.

May 2009: Developed draft elk management objectives and sent to MoE, MFR, and Ministry of Agriculture and Lands (MAL) staff for feedback.

May 2009: Presented draft elk management objectives to the East Kootenay Landowner Enfranchisement Pilot Working Group. This committee has representatives from MoE, MAL, East Kootenay Wildlife Association (EKWA), Kootenay Livestock Association (KLA), and the BC Agriculture Council (BCAC). Feedback was received from several participating organizations.

June 2009: Consulted with provincial wildlife biologists on general approach to elk management planning in the Kootenay Region, and decided to use a Structured Decision Making approach.

August 2009: Presented to and received feedback from the Kootenay Wildlife Harvest Advisory Committee (KWHAC). This committee has representatives from the Conservation Officer Service (COS), BC Trappers Association, West Kootenay Outdoorsmen, EKWA, Southern Guides, and United Bowhunters of BC.

September 2009: Developed a draft public consultation document in consultation with the Kootenay Regional Manager, and Fish and Wildlife Section Head.

October 2009: Met with East Kootenay COS staff to discuss all aspects of the Elk Management Plan, including proposed hunting regulations for 2010. Held additional one-on-one discussions with West Kootenay COS staff.

October 2009: Held a conference call with provincial and regional wildlife biologists, provincial human dimensions specialist and representatives from the Provincial Agriculture Zone Wildlife Program (PAZWP) to review the elk management goals and objectives, PMU delineation, broad management alternatives, the overall process for decision making (i.e., use of Consequence Tables) and the public consultation document.

October to November 2009: Posted hunting regulation change proposals on the Kootenay Region MoE website, and asked the public to provide comments.

November 2009: Presented elk management consultation document and proposed hunting regulation changes to the Kootenay Regional Agriculture Wildlife Committee (RAWC), and solicited feedback. This committee has representatives from MoE (regional and PAZWP), MAL, the BC Wildlife Federation (BCWF), the Creston Valley Wildlife Management Area (CVWMA), KLA, EKWA, and the Waldo Stockbreeders Association.

November to December 2009: Posted the elk management plan consultation document on the Kootenay Region MoE website. The public was asked for general feedback and to comment on the recommended management direction for each PMU. The Kootenay Region Fish and Wildlife Section Head sent the website link to the Okanagan Nation, Shuswap Nation, and Ktunaxa Nation, with an invitation to meet to discuss any concerns.

December 2009: Met West Kootenay Outdoorsmen at their Annual General Meeting and discussed the proposed regulation changes.

December 2009: Discussed elk regulation proposals with the KWHAC and summarised public feedback received through web-based consultation.

January 2010: Presented draft elk management plan to Elk Valley rod and gun clubs in Fernie, and solicited feedback.

February 2010: Presented the draft Elk Management Plan to the Rocky Mountain Forest District Range Advisory Committee and solicited feedback. Met with the Okanagan Nation and Ktunaxa Nation, presented copies of the elk management consultation document, and solicited feedback.

Stakeholders provided helpful feedback through meetings and discussions with various groups, which helped shape the management plan. Although hundreds of people commented on the regulation changes, the majority of which were elk proposals (Thornton 2010), only 5 conscientious individuals reviewed the consultation document and filled in the elk management plan comment form. Despite the small number, the comments received were insightful, particularly for shaping the consultation process for the next elk management plan. Many of the comments received from individuals and organisations on the regulation proposals were directly applicable to the elk management plan, and hence influenced the plan's recommendations. For example, there was little support from hunters for expanding zones and increasing harvest north of Canal Flats (North Trench PMU) because of minimal population increases in recent years, and few non-migratory elk.

Population Management Units

In the Big Game Harvest Management Procedures, MoE (2009) defines Population Management Units as “the spatial scale at which a given big game population will be managed for hunting. This will normally

be the geographic area that represents the year-round range of a big game population, while keeping interchange with other populations to a minimum". For elk in the Kootenay Region, wildlife management units (MUs) were grouped to encompass areas with similar elk populations and management objectives, and to capture summer and winter range for elk populations (Figure 1). Game Management Zones (groupings of MUs for the south and West Kootenay North, and south-east, south-west and north East Kootenay) were not used because these zones split some elk populations, and group other discrete populations. For example, the south-east East Kootenay GMZ (also referred to as the Fernie GMZ) encompasses only the east side of the Kootenay and Columbia River, splitting the Southern Trench elk population, and covers the Elk Valley, where the elk population is relatively discrete from the Southern Trench population.

In Figure 1, 2009 special hunt zones are displayed in green. These zones were delineated because of concerns with elk depredation on agricultural crops and/or rangeland condition and forage availability on important winter range.

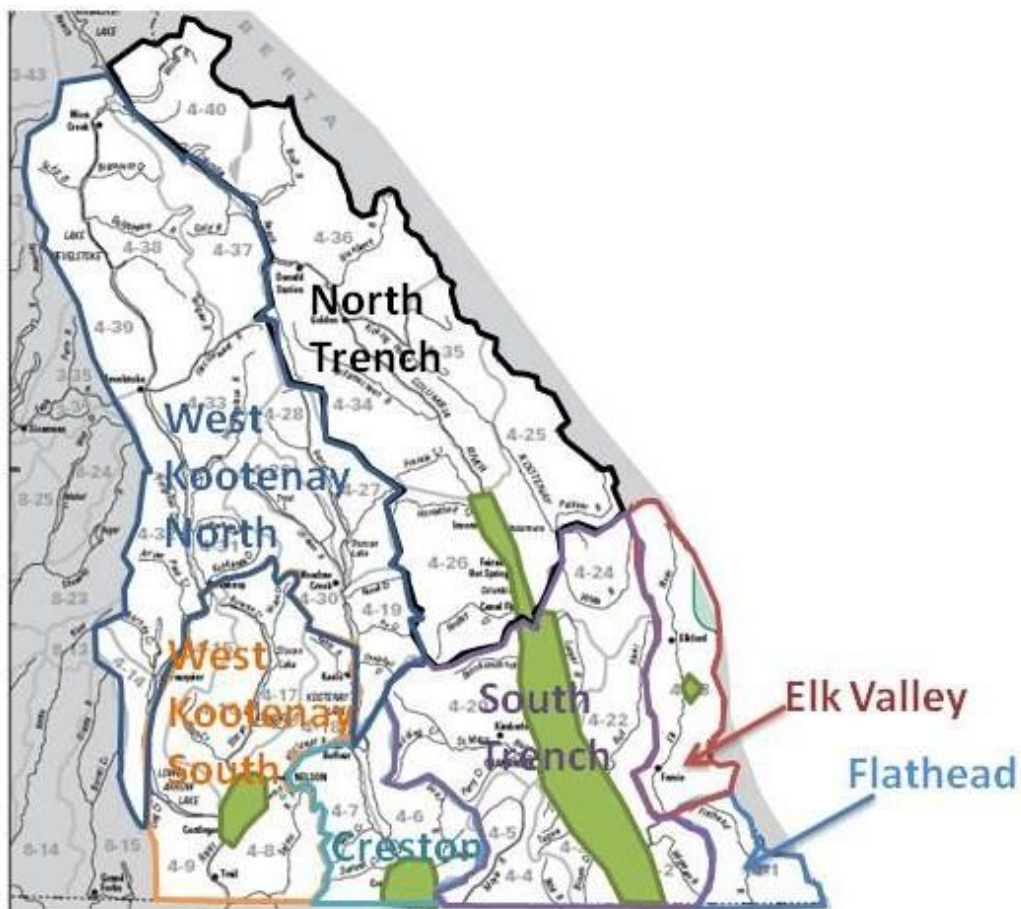


Figure 1. Elk Population Management Units for the Kootenay Region. Special hunt zones for 2009 are in green.

West Kootenay North

The West Kootenay North has relatively small elk populations distributed throughout the PMU, with the northern distribution limited by deep snow. Over several decades, the population has generally increased in size and distribution (Szkorupa and Mowat 2010). Management in much of the PMU has focused on providing opportunities to hunt large bull elk, with 3-point or better Limited Entry Hunts (LEH). However eastern MUs have a 6-point or better General Open Season (GOS), and any-bull bow season.

West Kootenay South

Populations in West Kootenay South have increased in size and distribution historically and recently (DeGroot 2005, Robinson and Clarke 2007, Szkorupa and Mowat 2010). Hunting seasons in this PMU have been dominated by LEH for 3-point or better bulls in the western MUs and general open seasons for bulls in the eastern MUs. There are currently LEH opportunities for antlerless (cow or calf) elk in the Slocan/Castlegar special hunt zone (September 1 to January 10), where there are conflicts with elk damage to infrastructure and crop depredation (mainly vegetable gardens).

Creston

Elk populations have increased recently in the Creston area (Robinson and Clarke 2007), and a significant component of the population is non-migratory (Stent and Mowat 2008), resulting in year-round conflicts with landowners. This PMU currently has several seasons focused on elk in agricultural areas, with general open seasons for antlerless elk (restricted to bow hunters and youth/senior hunters), and limited entry hunts that run through until the end of January. Bull harvest is restricted to a 6-point or better GOS during the regular season, and any bull during the bow-only season.

North Trench

Although there are healthy elk populations in parts of this PMU (e.g., Columbia Wetlands; Stent 2009), harvest data and a 2008 inventory suggest the population has not recovered from declines in the 1990s in Management Unit 4-26 (Phillips et al. 2008; Szkorupa and Mowat 2010). Currently, bull elk can only be hunted through a 6-point or better GOS, or any bull during the bow-only season. Antlerless elk can be harvested in the southern part of this PMU in special hunt zones through bow and youth/senior general open seasons in early September, and a LEH season that closes on October 10.

South Trench

Recent inventory and harvest data suggest that the population in the South Trench has increased substantially from the mid 1990s (Phillips et al. 2008, Szkorupa and Mowat 2010). The current hunting seasons include a 6-point or better bull GOS, any bull bow-only GOS, antlerless elk bow and youth/senior general open seasons and antlerless LEH seasons that close on October 10.

Elk Valley

Anecdotal and survey data from the Elk Valley point to substantial population increases in recent years (Szkorupa and Mowat 2010). Bull harvest is currently restricted to 6-point or better bulls (GOS), or any

bull for bow hunters. Antlerless harvest is restricted to a Limited Entry Hunt in a small winter range zone, for youth and senior hunters only.

Flathead

The Flathead elk population is small and few, if any, elk winter in this PMU because of deep snow and limited winter range (Szkorupa and Mowat 2010). There is currently a GOS for 6-point or better bulls and an any-bull bow season, with no hunts for antlerless elk.

Elk Management Objectives

The following list captures the range of objectives expressed by stakeholder groups and various levels of government. Objectives are grouped in to six categories: population management objectives; hunting opportunity objectives; viewing opportunity objectives; management and enforcement objectives; ecosystem objectives; and agriculture objectives. Since the list is meant to be all-encompassing, some objectives are contradictory, and cannot be achieved simultaneously. The importance of these objectives in different PMUs is captured in the next section.

Population management objectives:

1. Maintain the current elk distribution (i.e., do not allow local population extirpation)
2. Maintain a post-hunting ratio of > 20 bulls to 100 cows, to ensure early, synchronous and successful breeding
3. Focus population reductions on non-migratory elk where this segment of the population is conflicting with agriculture and/or negatively impacting winter range
4. Manage elk populations to provide sustenance and ceremonial needs for First Nations, as long as populations can sustain the harvest
5. Reduce automobile and train collisions with elk

Hunting opportunity objectives:

1. Maintain or increase hunter days and number of elk hunters over the short term (balanced against the risk of overharvest)
2. Maintain or increase hunter days and number of elk hunters over the long term (balanced against the risk of overharvest)
3. Maintain or increase elk harvest over the short and long term, given conservation constraints
4. Increase hunter recruitment and retention
5. Provide opportunities to hunt large bull elk (an objective for guide outfitters, non-resident hunters and some resident hunters)

Viewing opportunity objective:

1. Maintain opportunities to appreciate, study and view elk in their natural habitats

Management and enforcement objectives:

1. Minimize the number of different regulations within the region
2. Minimize the number of different regulations across regions
3. Maintain management costs (e.g., inventory, Limited Entry Hunt management) within fiscal budgets
4. Minimize enforcement costs
5. Minimize regulation complexity (i.e., avoid more complicated regulations such as antler restrictions and LEH where possible)

Ecosystem objectives:

1. Minimize negative impacts on grassland and shrub land ecosystem health by managing elk populations within the constraints of available forage (i.e. consider timing of grazing as early spring grazing has a greater impact than other times of the year)
2. Adjust elk population levels in consideration of the forage and habitat requirements of other wildlife species, such as bighorn sheep

Agriculture objectives:

1. Reduce summer crop depredation on private land (caused by non-migratory elk)
2. Reduce fall to spring crop depredation on private land (caused by migratory and non-migratory elk); early spring depredation is a particularly high concern in many areas
3. Reduce elk damage to fences and other infrastructure year round
4. Adjust elk population levels in consideration of the forage requirements for domestic livestock on tenured Crown Range

Importance of Objectives by Population Management Unit

Public consultation resulted in 22 objectives under 6 categories. Each objective was assigned a priority level (high, medium or low) for each PMU. Table 1 captures the dominant viewpoint on priority across stakeholders, recognizing that opinions differ among people and organisations. Differences in opinion were documented and communicated to MoE decision makers through the hunting regulation setting process.

Table 1. Priorities for Kootenay elk management objectives within Population Management Units.

Objective	North WK	South WK	Creston	North Trench	South Trench	Elk Valley	Flathead
Population management:							
Maintain current distribution	High	High	High	High	High	High	High
Maintain > 20 bulls per 100 cows	High	High	High	High	High	High	High
Focus pop'n reductions on non-migratory elk	Low	Med	Med	Med	High	Med	Low
Provide for First Nations use	High	High	High	High	High	High	High
Reduce vehicle/train collisions	Low	Med	High	Med	High	High	Low
Hunting opportunities:							
Maintain/increase # hunters, days in short term	Med	High	High	Med	High	High	Med
Maintain/increase # hunters, days in long term	Med	High	High	Med	High	High	Med
Maintain/increase elk harvest	Low	Med	High	Med	High	Med	Low
Increase hunter recruitment/retention	Med	Med	High	Med	High	High	Med
Provide opportunities to hunt large bulls	Med	Med	Low	Low	Low	Low	Low
Viewing:							
Provide opportunities to view elk	Med	Med	Med	Med	High	High	Med
Management and enforcement:							
Minimize # of regulations within region	High	High	High	High	High	High	High
Minimize # of regulations across regions	Med	Med	Med	Med	Med	Med	Med
Maintain management costs within budget	High	High	Med	High	Med	High	High
Minimize enforcement costs	High	High	Med	High	Med	High	High
Minimize regulation complexity	High	High	Med	High	Med	High	High
Ecosystem health:							
Manage elk given available forage	Low	Med	High	Med	High	High	Low
Manage elk considering other wildlife	Med	Med	Med	Med	High	High	Low
Agriculture:							
Reduce summer crop depredation	Low	Med	Med	Low	High	Med	Low
Reduce fall to spring crop depredation	Low	Low	High	Med	High	Low	Low
Reduce elk damage to infrastructure	Low	Low	Med	Low	Med	Low	Low
Manage elk considering livestock forage needs	Low	Low	Med	Med	High	Med	Low

Management Alternatives

The following alternatives are proposed for managing elk in different population management units in the Kootenay Region:

1. **Increase population:** allow populations to increase and eventually be limited by forage availability, predation and/or weather.
 - Harvest mature bulls and potentially some younger bulls if bull to cow ratios are high.
 - Do not harvest cows or calves.
2. **Stabilize population:** stabilize the population at its current size.
 - Harvest mature bulls and potentially some younger bulls if bull to cow ratios are high.
 - Minimal antlerless harvest (depending on population growth rate). Hunts could include Limited Entry Hunt (LEH) seasons or short General Open Seasons (GOS) that restrict weapon use (e.g., bow-only) or hunter age (e.g., youth and seniors only).
3. **20% reduction:** reduce the population by about 20% from current population size.
 - Harvest mature and younger bulls.
 - Harvest cows and calves at an appropriate level to cause moderate population reductions (depending on population size and growth rate). Hunts could include LEH and restrictive GOS.
4. **40% reduction:** reduce the population by about 40% from current population size. Large population decreases will likely be implemented slowly over time, to avoid predator-prey imbalances, which could drive populations well below the intended target.
 - Harvest mature and younger bulls.
 - Harvest cows and calves at an appropriate level to cause substantial population reductions (depending on population size and growth rate). Hunts could include LEH and a relatively liberal GOS until population targets are met.
 - Harvest rates are expected to be highest among the alternatives. In the short term, success rates (percent of hunters who harvest an elk) is expected to be high and hunter effort (days per kill) is expected to be low. Over the longer term, harvest levels are expected to remain high, but success rates may drop, and days/kill will likely increase.
5. **High bull to cow ratios:** focus management to produce a more natural bull age distribution including high bull to cow ratios and older, large-antlered bulls.
 - Harvest a small percentage of bulls by restricting the number of hunters through permit (LEH).
 - If a population is food-limited, harvest cows and calves to ensure sufficient forage for bulls.

Decision Analysis

Table 2 shows the consequences of different elk management alternatives relative to each objective. For example, one objective is to maintain or increase the number of hunters and hunter days in the short term. Under the management options to increase or stabilize the population, or focus on high bull to

cow ratios, fewer animals would be harvested in the short term, and therefore short term hunter opportunities would be minimal (value of 1 or 1.5 in the table). The management options to decrease the population would require a higher harvest in the short term, and would therefore increase hunting opportunity (value of 2.5 or 3 in the table). Table 2 applies generally to all PMUs. Appendix 1 summarizes the rationale for Consequence Table values.

Table 2. Consequence Table for elk management alternatives in the Kootenay Region. Management alternatives that are very likely to meet the objective were assigned a value of 3, alternatives that are somewhat likely to meet the objective were assigned a value of 2 and alternatives that are unlikely to meet objectives were assigned a value of 1.

Objective	Increase population	Stabilize population	20% reduction	40% reduction	High bull ratio
Population management:					
Maintain current distribution	3	3	2.5	2	3
Maintain > 20 bulls per 100 cows	3	3	2.5	2	3
Focus pop'n reductions on non-migratory elk	1	2	3	3	1
Provide for First Nations use	3	3	2.5	2	3
Reduce vehicle/train collisions	1	1	2	3	1
Hunting opportunities:					
Maintain/increase # hunters, days in short term	1	1.5	2.5	3	1
Maintain/increase # hunters, days in long term	2	2	3	2.5	2
Maintain/increase elk harvest	1	1	2	2	1
Increase hunter recruitment/retention	1	2	3	3	1
Provide opportunities to hunt large bulls	2	2	1	1	3
Viewing:					
Provide opportunities to view elk	3	3	2.5	1.5	3
Management and enforcement:					
Minimize # of regulations within region	3	3	2.5	2	1
Minimize # of regulations across regions	3	3	3	2	1
Maintain management costs within budget	3	2.5	2	1	1
Minimize enforcement costs	3	3	2	2	3
Minimize regulation complexity	3	3	2	2	1
Ecosystem health:					
Manage elk given available forage	1	1	2	3	1
Manage elk considering other wildlife	1	1	2	3	1
Agriculture:					
Reduce summer crop depredation	1	1	2.5	3	1
Reduce fall to spring crop depredation	1	1	2.5	3	1
Reduce elk damage to infrastructure	1	1	2.5	3	1
Manage elk considering livestock forage needs	1	1	2.5	3	1

For each PMU, Consequence Tables were developed to weigh the costs and benefits of different management alternatives given identified objectives (Table 3 to Table 9). The Recommended Management Direction section below has descriptive summaries and further discussion.

Scores for each PMU were calculated with the following steps:

1. Multiplied the priority (from Table 1) for each PMU (where 0 = low, 1 = moderate, 2 = high) by the management alternative values (Table 2). For example, in the West Kootenay North (Table 3), the objective to maintain current distribution is a high priority (2), and the management alternative to increase the population is very likely to maintain current distribution (3). Therefore the score for this management alternative, for this PMU is 6 (2 x 3).
2. Averaged objective values for each category of objectives (e.g., population management, hunting opportunity, etc.) to ensure that each category was given equal weight.
3. Summed average values for each category for a total score.

Table 3. Consequence Table for the West Kootenay North.

Example

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	0	1.0	2.0	3.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Provide for First Nations use	2	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	0	1.0	1.0	2.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							3.6	3.6	3.0	2.4	3.6
Hunting opportunities:											
Maintain/increase # hunters, days in short term	1	1.0	1.5	2.5	3.0	1.0	1.0	1.5	2.5	3.0	1.0
Maintain/increase # hunters, days in long term	1	2.0	2.0	3.0	2.5	2.0	2.0	2.0	3.0	2.5	2.0
Maintain/increase elk harvest	0	1.0	1.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0
Increase hunter recruitment/retention	1	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide opportunities to hunt large bulls	1	2.0	2.0	1.0	1.0	3.0	2.0	2.0	1.0	1.0	3.0
<i>Average score</i>							1.2	1.5	1.9	1.9	1.4
Viewing:											
Provide opportunities to view elk	1	3.0	3.0	2.5	1.5	3.0	3.0	3.0	2.5	1.5	3.0
<i>Average score</i>							3.0	3.0	2.5	1.5	3.0
Management and enforcement:											
Minimize # of regulations within region	2	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	2	3.0	2.5	2.0	1.0	1.0	6.0	5.0	4.0	2.0	2.0
Minimize enforcement costs	2	3.0	3.0	2.0	2.0	3.0	6.0	6.0	4.0	4.0	6.0
Minimize regulation complexity	2	3.0	3.0	2.0	2.0	1.0	6.0	6.0	4.0	4.0	2.0
<i>Average score</i>							5.4	5.2	4.0	3.2	2.6
Ecosystem health:											
Manage elk given available forage	0	1.0	1.0	2.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering other wildlife	1	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							0.5	0.5	1.0	1.5	0.5
Agriculture:											
Reduce summer crop depredation	0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce fall to spring crop depredation	0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce elk damage to infrastructure	0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering livestock forage needs	0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							0.0	0.0	0.0	0.0	0.0
Total score (sum of average scores)							13.7	13.8	12.4	10.5	11.1

Table 4. Consequence Table for the West Kootenay South.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							4.0	4.2	4.0	3.6	4.0
Hunting opportunities:											
Maintain/increase # hunters, days in short term	2.0	1.0	1.5	2.5	3.0	1.0	2.0	3.0	5.0	6.0	2.0
Maintain/increase # hunters, days in long term	2.0	2.0	2.0	3.0	2.5	2.0	4.0	4.0	6.0	5.0	4.0
Maintain/increase elk harvest	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0
Increase hunter recruitment/retention	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide opportunities to hunt large bulls	1.0	2.0	2.0	1.0	1.0	3.0	2.0	2.0	1.0	1.0	3.0
<i>Average score</i>							2.0	2.4	3.4	3.4	2.2
Viewing:											
Provide opportunities to view elk	1.0	3.0	3.0	2.5	1.5	3.0	3.0	3.0	2.5	1.5	3.0
<i>Average score</i>							3.0	3.0	2.5	1.5	3.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	2.0	3.0	2.5	2.0	1.0	1.0	6.0	5.0	4.0	2.0	2.0
Minimize enforcement costs	2.0	3.0	3.0	2.0	2.0	3.0	6.0	6.0	4.0	4.0	6.0
Minimize regulation complexity	2.0	3.0	3.0	2.0	2.0	1.0	6.0	6.0	4.0	4.0	2.0
<i>Average score</i>							5.4	5.2	4.0	3.2	2.6
Ecosystem health:											
Manage elk given available forage	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
Manage elk considering other wildlife	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							1.0	1.0	2.0	3.0	1.0
Agriculture:											
Reduce summer crop depredation	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Reduce fall to spring crop depredation	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce elk damage to infrastructure	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering livestock forage needs	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							0.3	0.3	0.6	0.8	0.3
Total score (sum of average scores)							15.7	16.1	16.5	15.5	13.1

Table 5. Consequence Table for Creston.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
<i>Average score</i>							4.2	4.4	4.4	4.2	4.2
Hunting opportunities:											
Maintain/increase # hunters, days in short term	2.0	1.0	1.5	2.5	3.0	1.0	2.0	3.0	5.0	6.0	2.0
Maintain/increase # hunters, days in long term	2.0	2.0	2.0	3.0	2.5	2.0	4.0	4.0	6.0	5.0	4.0
Maintain/increase elk harvest	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	4.0	4.0	2.0
Increase hunter recruitment/retention	2.0	1.0	2.0	3.0	3.0	1.0	2.0	4.0	6.0	6.0	2.0
Provide opportunities to hunt large bulls	0.0	2.0	2.0	1.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							2.0	2.6	4.2	4.2	2.0
Viewing:											
Provide opportunities to view elk	1.0	3.0	3.0	2.5	1.5	3.0	3.0	3.0	2.5	1.5	3.0
<i>Average score</i>							3.0	3.0	2.5	1.5	3.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	1.0	3.0	2.5	2.0	1.0	1.0	3.0	2.5	2.0	1.0	1.0
Minimize enforcement costs	1.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	3.0
Minimize regulation complexity	1.0	3.0	3.0	2.0	2.0	1.0	3.0	3.0	2.0	2.0	1.0
<i>Average score</i>							3.6	3.5	2.8	2.2	1.6
Ecosystem health:											
Manage elk given available forage	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
Manage elk considering other wildlife	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							1.5	1.5	3.0	4.5	1.5
Agriculture:											
Reduce summer crop depredation	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Reduce fall to spring crop depredation	2.0	1.0	1.0	2.5	3.0	1.0	2.0	2.0	5.0	6.0	2.0
Reduce elk damage to infrastructure	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Manage elk considering livestock forage needs	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
<i>Average score</i>							1.3	1.3	3.1	3.8	1.3
Total score (sum of average scores)							15.6	16.3	20.0	20.4	13.6

Table 6. Consequence Table for the North Trench.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							4.0	4.2	4.0	3.6	4.0
Hunting opportunities:											
Maintain/increase # hunters, days in short term	1.0	1.0	1.5	2.5	3.0	1.0	1.0	1.5	2.5	3.0	1.0
Maintain/increase # hunters, days in long term	1.0	2.0	2.0	3.0	2.5	2.0	2.0	2.0	3.0	2.5	2.0
Maintain/increase elk harvest	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0
Increase hunter recruitment/retention	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide opportunities to hunt large bulls	0.0	2.0	2.0	1.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							1.0	1.3	2.1	2.1	1.0
Viewing:											
Provide opportunities to view elk	1.0	3.0	3.0	2.5	1.5	3.0	3.0	3.0	2.5	1.5	3.0
<i>Average score</i>							3.0	3.0	2.5	1.5	3.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	2.0	3.0	2.5	2.0	1.0	1.0	6.0	5.0	4.0	2.0	2.0
Minimize enforcement costs	2.0	3.0	3.0	2.0	2.0	3.0	6.0	6.0	4.0	4.0	6.0
Minimize regulation complexity	2.0	3.0	3.0	2.0	2.0	1.0	6.0	6.0	4.0	4.0	2.0
<i>Average score</i>							5.4	5.2	4.0	3.2	2.6
Ecosystem health:											
Manage elk given available forage	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
Manage elk considering other wildlife	1.0	1.0	1.0	2.0	3.0	1.0	1.0	1.0	2.0	3.0	1.0
<i>Average score</i>							1.0	1.0	2.0	3.0	1.0
Agriculture:											
Reduce summer crop depredation	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce fall to spring crop depredation	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Reduce elk damage to infrastructure	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering livestock forage needs	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
<i>Average score</i>							0.5	0.5	1.3	1.5	0.5
Total score (sum of average scores)							14.9	15.2	15.9	14.9	12.1

Table 7. Consequence Table for the South Trench.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	2.0	1.0	2.0	3.0	3.0	1.0	2.0	4.0	6.0	6.0	2.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
<i>Average score</i>							4.4	4.8	5.0	4.8	4.4
Hunting opportunities:											
Maintain/increase # hunters, days in short term	2.0	1.0	1.5	2.5	3.0	1.0	2.0	3.0	5.0	6.0	2.0
Maintain/increase # hunters, days in long term	2.0	2.0	2.0	3.0	2.5	2.0	4.0	4.0	6.0	5.0	4.0
Maintain/increase elk harvest	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	4.0	4.0	2.0
Increase hunter recruitment/retention	2.0	1.0	2.0	3.0	3.0	1.0	2.0	4.0	6.0	6.0	2.0
Provide opportunities to hunt large bulls	0.0	2.0	2.0	1.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							2.0	2.6	4.2	4.2	2.0
Viewing:											
Provide opportunities to view elk	2.0	3.0	3.0	2.5	1.5	3.0	6.0	6.0	5.0	3.0	6.0
<i>Average score</i>							6.0	6.0	5.0	3.0	6.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	1.0	3.0	2.5	2.0	1.0	1.0	3.0	2.5	2.0	1.0	1.0
Minimize enforcement costs	1.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	3.0
Minimize regulation complexity	1.0	3.0	3.0	2.0	2.0	1.0	3.0	3.0	2.0	2.0	1.0
<i>Average score</i>							3.6	3.5	2.8	2.2	1.6
Ecosystem health:											
Manage elk given available forage	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
Manage elk considering other wildlife	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
<i>Average score</i>							2.0	2.0	4.0	6.0	2.0
Agriculture:											
Reduce summer crop depredation	2.0	1.0	1.0	2.5	3.0	1.0	2.0	2.0	5.0	6.0	2.0
Reduce fall to spring crop depredation	2.0	1.0	1.0	2.5	3.0	1.0	2.0	2.0	5.0	6.0	2.0
Reduce elk damage to infrastructure	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Manage elk considering livestock forage needs	2.0	1.0	1.0	2.5	3.0	1.0	2.0	2.0	5.0	6.0	2.0
<i>Average score</i>							1.8	1.8	4.4	5.3	1.8
Total score (sum of average scores)							19.8	20.7	25.4	25.5	17.8

Table 8. Consequence Table for the Elk Valley.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
<i>Average score</i>							4.2	4.4	4.4	4.2	4.2
Hunting opportunities:											
Maintain/increase # hunters, days in short term	2.0	1.0	1.5	2.5	3.0	1.0	2.0	3.0	5.0	6.0	2.0
Maintain/increase # hunters, days in long term	2.0	2.0	2.0	3.0	2.5	2.0	4.0	4.0	6.0	5.0	4.0
Maintain/increase elk harvest	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0
Increase hunter recruitment/retention	2.0	1.0	2.0	3.0	3.0	1.0	2.0	4.0	6.0	6.0	2.0
Provide opportunities to hunt large bulls	0.0	2.0	2.0	1.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							1.8	2.4	3.8	3.8	1.8
Viewing:											
Provide opportunities to view elk	2.0	3.0	3.0	2.5	1.5	3.0	6.0	6.0	5.0	3.0	6.0
<i>Average score</i>							6.0	6.0	5.0	3.0	6.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	2.0	3.0	2.5	2.0	1.0	1.0	6.0	5.0	4.0	2.0	2.0
Minimize enforcement costs	2.0	3.0	3.0	2.0	2.0	3.0	6.0	6.0	4.0	4.0	6.0
Minimize regulation complexity	2.0	3.0	3.0	2.0	2.0	1.0	6.0	6.0	4.0	4.0	2.0
<i>Average score</i>							5.4	5.2	4.0	3.2	2.6
Ecosystem health:											
Manage elk given available forage	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
Manage elk considering other wildlife	2.0	1.0	1.0	2.0	3.0	1.0	2.0	2.0	4.0	6.0	2.0
<i>Average score</i>							2.0	2.0	4.0	6.0	2.0
Agriculture:											
Reduce summer crop depredation	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
Reduce fall to spring crop depredation	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce elk damage to infrastructure	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering livestock forage needs	1.0	1.0	1.0	2.5	3.0	1.0	1.0	1.0	2.5	3.0	1.0
<i>Average score</i>							0.5	0.5	1.3	1.5	0.5
Total score (sum of average scores)							19.9	20.5	22.5	21.7	17.1

Table 9. Consequence Table for the Flathead.

Objective	Priority	Management alternative					Score				
		Increase	Stabilize	20% reduction	40% reduction	High bull ratio	Increase	Stabilize	20% reduction	40% reduction	High bull ratio
Population management:											
Maintain current distribution	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Maintain > 20 bulls per 100 cows	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Focus pop'n reductions on non-migratory elk	0.0	1.0	2.0	3.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Provide for First Nations use	2.0	3.0	3.0	2.5	2.0	3.0	6.0	6.0	5.0	4.0	6.0
Reduce vehicle/train collisions	0.0	1.0	1.0	2.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							3.6	3.6	3.0	2.4	3.6
Hunting opportunities:											
Maintain/increase # hunters, days in short term	1.0	1.0	1.5	2.5	3.0	1.0	1.0	1.5	2.5	3.0	1.0
Maintain/increase # hunters, days in long term	1.0	2.0	2.0	3.0	2.5	2.0	2.0	2.0	3.0	2.5	2.0
Maintain/increase elk harvest	0.0	1.0	1.0	2.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0
Increase hunter recruitment/retention	1.0	1.0	2.0	3.0	3.0	1.0	1.0	2.0	3.0	3.0	1.0
Provide opportunities to hunt large bulls	0.0	2.0	2.0	1.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							0.8	1.1	1.7	1.7	0.8
Viewing:											
Provide opportunities to view elk	1.0	3.0	3.0	2.5	1.5	3.0	3.0	3.0	2.5	1.5	3.0
<i>Average score</i>							3.0	3.0	2.5	1.5	3.0
Management and enforcement:											
Minimize # of regulations within region	2.0	3.0	3.0	2.5	2.0	1.0	6.0	6.0	5.0	4.0	2.0
Minimize # of regulations across regions	1.0	3.0	3.0	3.0	2.0	1.0	3.0	3.0	3.0	2.0	1.0
Maintain management costs within budget	2.0	3.0	2.5	2.0	1.0	1.0	6.0	5.0	4.0	2.0	2.0
Minimize enforcement costs	2.0	3.0	3.0	2.0	2.0	3.0	6.0	6.0	4.0	4.0	6.0
Minimize regulation complexity	2.0	3.0	3.0	2.0	2.0	1.0	6.0	6.0	4.0	4.0	2.0
<i>Average score</i>							5.4	5.2	4.0	3.2	2.6
Ecosystem health:											
Manage elk given available forage	0.0	1.0	1.0	2.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering other wildlife	0.0	1.0	1.0	2.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							0.0	0.0	0.0	0.0	0.0
Agriculture:											
Reduce summer crop depredation	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce fall to spring crop depredation	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Reduce elk damage to infrastructure	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
Manage elk considering livestock forage needs	0.0	1.0	1.0	2.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0
<i>Average score</i>							0.0	0.0	0.0	0.0	0.0
Total score (sum of average scores)							12.8	12.9	11.2	8.8	10.0

Recommended Management Direction

This section outlines the recommended management direction for Population Management Units in the Kootenay Region. To evaluate management alternatives for each PMU, priority rankings from Table 1 were used to weigh values in Table 2, the general Consequence Table. The results of these calculations are shown in Table 3 through Table 9, and are summarised in Table 10 below. The recommended management direction was determined based on these scores as well as public feedback.

Table 10. Summary of Consequence Table scores for elk Population Management Units in the Kootenay Region (Figure 1, page 7). The highest score, and scores less than 1 point from the highest score, are highlighted in red.

Population unit	Increase population	Stabilize population	20% reduction	40% reduction	High bull ratios
West Kootenay North	13.7	13.8	12.4	10.5	11.1
West Kootenay South	15.7	16.1	16.5	15.5	13.1
Creston	15.6	16.3	20.0	20.4	13.6
North Trench	14.9	15.2	15.9	14.9	12.1
South Trench	19.8	20.7	25.4	25.5	17.8
Elk Valley	19.9	20.5	22.5	21.7	17.1
Flathead	12.8	12.9	11.2	8.8	10.0

Hunting Seasons

Based on extensive public consultation (Thornton 2010), Kootenay Region MoE staff recommended several hunting regulation changes for 2010, as described below for each PMU. The proposals align with the recommended management direction from this Elk Management Plan. In addition, all regulation proposals were assessed based on MoE objectives to 1) simplify regulations, 2) harmonize regulations within/among regions, 3) increase hunting opportunity and 4) maintain management costs within fiscal budgets. See Appendix 2 for additional information on all hunting regulation changes considered and rationale for proposals.

West Kootenay North

For the West Kootenay North, the Consequence Table score was similar for the management alternatives to increase or stabilize the population. Although the high bull to cow ratio management option is very likely to achieve a number of objectives, such as > 20 bulls per 100 cows, and opportunities to hunt large bulls, this management alternative ranked lower because of limited hunter opportunities (measured by number of hunters and hunter days), greater regulation complexity and higher management costs (LEH is more costly to administer). The West Kootenay North has very little agriculture, limited cattle grazing, and relatively small populations of other wildlife that may be impacted by elk. In addition, deep snow in much of the area holds elk populations well below levels that could be supported by available forage, so there is minimal risk to values that would be compromised by very large elk populations. Therefore, allowing the population to continue to increase or stabilize is the recommended management direction for this area. Although this management direction was highly supported by the public, many hunters (particularly in the West Kootenay) strongly opposed the loss of unique hunting opportunities associated with a shift from LEH to GOS for bull elk.

For the 2010 hunting season, MoE recommended:

1. Maintaining the any bull bow-only GOS in eastern MUs
2. Opening a 6 point or better GOS for bull elk throughout the PMU, with a shorter season (October 1-20) in western MUs for the first two years of the change (2010 and 2011)
3. Cancelling the 3 point or better bull LEH in western MUs
4. Continuing with no antlerless elk seasons

West Kootenay South

The West Kootenay South Consequence Table had the highest score for the management alternatives to reduce the population slightly (by 20%), because of agriculture conflicts and the desire to increase hunting opportunity. However the management options to increase or stabilize the population had similarly high scores. In non-agricultural areas, concerns with ecosystem health, including conflicts with other wildlife species may arise if elk populations continue to increase as rapidly as they have in recent years. Anecdotal information suggests that the population in agricultural conflict areas may have stabilized as a result of recent antlerless elk hunts. Therefore the recommended management alternative is to stabilize the population at this point. As in the West Kootenay North, hunters were very divided over the proposed shift from a bull elk LEH to a 6-point or better GOS. There are strong concerns that a GOS will result in a large influx of hunters and a high harvest on mature bulls, which would reduce the bull to cow ratios.

For the 2010 hunting season, MoE recommended:

1. Maintaining the any bull bow-only GOS in eastern MUs
2. Opening a 6 point or better GOS for bull elk throughout the PMU, with a shorter season (October 1-20) in western MUs for the first two years of the change (2010 and 2011)
3. Cancelling the 3 point or better LEH season for bull elk in western MUs
4. Continuing LEH seasons for antlerless elk in the Slocan/Castlegar special hunt zone, from September 1 to February 28

The target harvest for antlerless elk will be similar to past years, at about 15% of the non-migratory antlerless elk population in September, plus about 5% of the wintering antlerless elk population. No antlerless elk General Open Seasons were proposed.

Creston

In the Creston area, the management alternatives to decrease the population by 20% to 40% ranked highest, and therefore a population decline of 30% (20-40%) is recommended. This will apply to elk that use the special hunt zone (Zone C of 4-06, 4-07) for at least part of the year (about 1000 elk; Stent and Mowat 2008), but not to the elk population in the entire MU. This management direction will likely reduce agricultural conflicts and increase the productivity of the elk population, which would maintain or increase hunting opportunities. There are also concerns over large elk populations and subsequent negative effects on ecosystem health and other wildlife in the Creston area, and elk population reductions better address these concerns. All population reductions would be implemented slowly over

time (3-5 years), to avoid predator-prey imbalances, which could result in substantial, unintended elk population declines. Gradual reductions will also enable managers to monitor and respond to population changes. In general, there was public support for moderate population reductions, as long as MoE continued to monitor and re-evaluate the situation on a regular basis.

For the 2010 hunting season, MoE recommended:

1. Maintaining the bow-only any bull and 6 point or better bull General Open Seasons
2. Opening a spike bull elk General Open Season in the special hunt zone, from September 10 to 19
3. Maintaining the early season antlerless elk General Open Seasons for bow only and youth/senior hunters in the special hunt zone
4. Maintaining LEH seasons, from October 1 to February 28

There will continue to be a higher target harvest early season (about 20% of non-migratory elk in October) compared to later in the fall (about 3% of the wintering population from November to February). Population modelling will be used to refine harvest rates and seasons over time to achieve population objectives.

North Trench

The North Trench Consequence Table analysis identifies population stability or a 20% decline as the recommended management alternatives for this area. Although there is less agriculture and fewer concerns over crop depredation in these areas, compared to the southern Trench, there are conflicts with landowners, and the winter range may be overused if elk populations do increase. However since there is little evidence of a population increase recently, the recommended management direction is to stabilize the elk population in areas with landowner conflicts only. In general hunters did not support population reductions.

For the 2010 hunting season, MoE recommended:

1. Maintaining the bow-only any bull and 6 point or better bull General Open Seasons
2. Cancelling the early season antlerless elk General Open Seasons for bow only and youth/senior hunters in the special hunt zone
3. Maintaining LEH seasons, from September 20 to October 10

There will be no new antlerless elk seasons north of MU 4-26, however this may be considered in the future for agricultural-focused areas, following extensive consultation with stakeholder groups. Antlerless elk harvest in 4-26 will be scaled back for 2010, because the 2008 inventory (Phillips et al. 2008) and anecdotal reports suggest population declines in parts of this PMU. However this will be re-assessed in 2010 for the 2011 hunting season.

South Trench

The recommended management alternative for the South Trench is to reduce the population by about 30% (20-40%) to roughly 9,800 elk from a current population estimate of 14,000 elk (Phillips et al. 2008). Hunter opportunity and agriculture are high priority objectives in this area, and largely drive

management direction. In addition, many stakeholders in the South Trench are concerned about the negative effects of large elk populations on grassland and shrub land habitats, and on other wildlife species such as bighorn sheep. Although programs are well underway to restore grassland habitat (Anderson et al. 2006), increases in forage abundance are not immediate. MoE will continue to work with the Ministry of Forests and Range (MFR) to determine whether ecosystem restoration efforts could support higher elk populations than the current numbers proposed.

For the past three years, MoE has targeted a population decrease in the South Trench, with a focus on non-migratory elk. Although population reductions larger than 40% would likely meet agricultural and perhaps ecosystem health objectives, the reduction could drive the population to a level which could substantially reduce hunting opportunities over the long term. This would be exacerbated if elk population reductions result in increased predation rates. The public raised concerns with reducing the population too quickly, and an associated loss of hunting opportunities, as was experienced in the mid 1990s.

Population modelling currently underway will help to assess current population trends, and identify appropriate harvest rates to achieve population targets for the South Trench. Given recent antlerless elk harvest levels, and current calf recruitment rates, the population may already be declining (T. Szkorupa, MoE, unpublished data). Targeting a 30% reduction and monitoring key objectives (e.g., ecosystem health, hunting opportunities, and crop depredation) is therefore an appropriate initial management direction for this planning period.

For the 2010 hunting season, MoE recommended:

1. Maintaining the bow-only any bull and 6 point or better bull General Open Seasons
2. Merging all Southern Trench special hunt zones in to a single zone
3. Opening a spike bull elk General Open Season in the special hunt zone, from September 10 to 19
4. Maintaining the early season antlerless elk General Open Seasons for bow only and youth/senior hunters in the special hunt zone
5. Opening an antlerless elk General Open Season for all resident hunters from September 20 to 30
6. Maintaining an LEH season, from October 1 to 10

Elk Valley

The Consequence Table for the Elk Valley identified a 20% population reduction as the best management alternative, with the 40% reduction option as a close second. Although this area has limited agriculture, an emphasis on hunting opportunity and ecosystem health drives this recommendation. Antlerless elk hunting has been very minimal in the Elk Valley in recent years, and the population appears to be growing steadily. This has resulted in concerns with over-grazing and potentially negative impacts on other wildlife species (e.g., bighorn sheep). Additional hunting on cows is required to reduce the population by 20%, which would increase short term hunting opportunities, and potentially long term opportunities if minimal reductions improve herd productivity. The public was generally supportive of minimal population reductions, with regular monitoring and evaluation. Initially, the 20% reduction would only apply to the population wintering in the defined Winter Range Zone. In

future years, MoE will assess populations outside this area (e.g., on and around coal mine properties) and determine whether population reductions are required and feasible.

For the 2010 hunting season, MoE recommended:

1. Maintaining the bow-only any bull and 6 point or better bull General Open Seasons
2. Expanding the Elk Valley Winter Range zones from Fernie to Elkford
3. Opening a spike bull elk General Open Season in the Winter Range zone, from September 10 to 19
4. Opening early season antlerless elk General Open Seasons for bow only (September 1 to 9) and youth/senior hunters (September 10 to 20) in the Winter Range Zone
5. Opening an LEH season for all resident hunters, from October 1 to 10

Overall, the initial target harvest for antlerless elk will be about 15% of the non-migratory elk only (roughly 40% of the wintering population). Population modelling will be used to determine whether this will achieve population objectives.

Flathead

The recommended management option for the Flathead Valley is a population increase or stabilization, which was supported by the public (web-based consultation) and by fish and wildlife clubs in the East Kootenay. There is little concern with habitat over-use or negative effects on other wildlife, and there is no agriculture in the PMU. Hunting opportunities are a priority (although lower than for the Elk Valley and South Trench) but these can be maintained or increased without population reductions. It is likely that the current population or a larger population can be sustained given available forage. There are no proposed changes to the hunting seasons for 2010.

Future Elk Management Planning

The next Kootenay Elk Management plan will be developed starting in 2014, to cover the 2015-2019 period. Several lessons can be learned from the current elk management planning process to improve the process:

- Establish a contact list early in the planning process. For example, invite people to subscribe to an RSS feed (a “feed” contains frequently updated content published by a website) for the elk management plan. Then send regular updates on the planning process, and notify people about information sessions. Public involvement in the Structured Decision Making process from the beginning would likely enhance understanding and buy-in with the process.
- If resources are available, consider presenting the planning process to interested people in the Kootenay Region (2-3 communities), and provide the opportunity for written comments following these meetings. Although the Structured Decision Making process was valuable for MoE staff and existing committees (with discussions during face-to-face meetings), the web-based consultation in 2009 was not very effective.

- Consider conducting a survey (with random sampling) of hunters and perhaps the general public to identify representative viewpoints on elk management goals and objectives, and desirable management direction.
- For future web-based consultation, employ a user-friendly survey format (not word documents). There are many examples from the United States that can be drawn on. For example, simple question could be asked (“Do you agree with decreasing the South Trench elk population by 20 to 40%”) along with background information and a range of answers that the respondent can select.
- Provide the public with detailed background scientific information on Kootenay Region elk populations prior to or during the planning process. Although MoE staff had presented extensive scientific data to existing committees, this information was not readily available to the public during development of the 2010-14 plan. A review of historic elk data in the Kootenay Region is currently available in draft form and will be distributed to the public in 2010.

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Ministry of Environment Approval

Approval is sought for the Kootenay Elk Management Plan 2010 to 2014:

**Regional Manager
Environmental Stewardship Division
Kootenay Region**

Reviewed by: Tom Bell

Date: July 7, 2010

Signature:



**Wildlife Manager
Environmental Stewardship Division
Headquarters**

Reviewed by: Ian Hatter

Date: July 8, 2010

Signature:



Appendix 1: Rationale for Consequence Table Values

This appendix summarizes the rationale for the values populated in the general Consequence Table for elk management in the Kootenay Region (Table 2). Management alternatives that are very likely to meet the objective are assigned a value of 3, alternatives that are somewhat likely to meet the objective are assigned a value of 2 and alternatives that are unlikely to meet objectives are assigned a value of 1.

Objective	1: Increase	2: Stabilize	3: Reduce 20%	4: Reduce 40%	5: High bull ratio	Rationale for values
Population management						
Maintain current distribution	3	3	2.5	2	3	Management alternatives that focus on increasing or stabilizing a population (alternatives 1 and 2) or managing for high bull to cow ratios (alternatives 5) will have minimal antlerless hunting and are very likely to meet the objective of maintaining current distribution. There is a risk that targeting a population reduction (alternatives 3 and 4) could result in a reduction in the current elk distribution, with a higher risk for the more substantial reduction. The risk would be higher if the population decline is rapid, because this could result in a large number of predators relative to the number of prey, which could increase predation and further drive down elk populations. Past population reductions may have reduced the distribution of elk on some summer ranges (although there are other potential explanations as well).
Maintain > 20 bulls per 100 cows	3	3	2.5	2	3	In lightly hunted populations (alternatives 1, 2 and 5) bull to cow ratios will likely be much higher than 20 bulls per 100 cows. In more heavily hunted populations (alternatives 3 and 4), with more liberal bull seasons on younger bulls, there is a higher risk that the bull to cow ratio could drop below 20:100. Still, management alternatives 3 and 4 can likely achieve > 20 bulls per 100 cows if the level of bull harvest is appropriate, and balanced against the antlerless harvest.
Focus population reductions on non-migratory elk	1	2	3	3	1	Encouraging migratory behaviour in an elk population requires either 1) reductions in the non-migratory component of the population and/or 2) disturbance of non-migratory elk to encourage movement. Disturbing elk off private agricultural land during winter may also encourage migratory behaviour by reducing habituation to humans and crops. Management alternatives 1 and 5 would have a very minimal harvest, so there would be

Objective	1: Increase	2: Stabilize	3: Reduce 20%	4: Reduce 40%	5: High bull ratio	Rationale for values
						little opportunity to target non-migratory elk. Alternatives 2, 3 and 4 would have some antlerless harvest that could be targeted at non-migratory elk.
Provide for First Nations use	3	3	2.5	2	3	If populations increase (alternative 1 and potentially 5) or remain stable (alternative 2 and potentially 5) then there will ample opportunities for First Nations to meet their sustenance and ceremonial needs. Smaller populations have a higher risk that First Nation's needs would not be met (alternative 4 and to a lesser extent 3). However although large elk populations may meet First Nations needs in the short term, populations that are too large given available forage will contribute to overgrazing and habitat degradation, which will limit the number of elk that can be supported in the long term.
Reduce vehicle/train collisions	1	1	2	3	1	Larger populations (under management alternatives 1, 2 and 5) are more likely to result in collisions between vehicles/trains and elk. A moderate population decrease (alternative 3), would reduce collisions less than a substantial population decrease (alternative 4).
<i>Hunting opportunities</i>						
Maintain/increase # hunters, days in short term	1	1.5	2.5	3	1	Under management alternatives 1, 2 and 5, fewer elk would be harvested, and therefore short term hunter opportunities would be minimal, although slightly higher for alternative 2 where some cows and calves would be harvested. Alternatives 3 and 4 would require a higher harvest to decrease elk populations, and would therefore be more likely to meet the objective of increasing the number of hunters and hunter days (alternative 3 slightly less so than alternative 4).
Maintain/increase # hunters, days in long term	2	2	3	2.5	2	A large elk population may reduce the number of elk that can be supported over the long term (by overgrazing and reducing forage supply). Targeting a substantial population decrease (alternative 4) runs the risk of reducing the population to levels which could negatively impact harvest opportunity.
Maintain/increase elk harvest over short, long term	1	1	2	2	1	If a population is limited by available forage, reducing the population (alternatives 3 and 4) may increase herd productivity and hence the number of elk that can be harvested.

Objective	1: Increase	2: Stabilize	3: Reduce 20%	4: Reduce 40%	5: High bull ratio	Rationale for values
Increase hunter recruitment/retention	1	2	3	3	1	Management alternatives with a higher harvest (3 and 4) are more likely to offer hunting opportunities that promote recruitment and retention. In particular, antlerless hunts are ideal for youth and senior hunters. Alternative 2 would have some antlerless harvest, so would potentially provide some recruitment and retention opportunities.
Provide opportunities to hunt large bulls	2	2	1	1	3	Management alternative 5 focuses on high bull to cow ratios, and is therefore most likely to meet this objective. Alternatives 1 and 2 would have minimal hunting, and bull hunting would focus primarily on mature males (6 point or better), which would provide substantial large bull hunting opportunities, particularly in areas with minimal motorised access.
Viewing						
Provide opportunities to view elk	3	3	2.5	1.5	3	Large elk populations (alternatives 1, 2, 5 and to a lesser extent 3) would provide ample opportunities to view elk. These opportunities would be limited if the elk population was substantially reduced (alternative 4).
Management and enforcement						
Minimize # of regulations within region	3	3	2.5	2	1	There are opportunities to minimize the number of regulations within a region under all of the proposed management alternatives. However alternative 5 deviates from most areas within the region. Alternatives 3 and 4 may increase the number of regulations somewhat, since population reductions likely require more seasons, and seasons that focus on calves and/or cows.
Minimize # of regulations across regions	3	3	3	2	1	Under each management alternative, opportunities to align with other regions will be explored where appropriate. However alternative 5 would require seasons that deviate from most other regions.
Maintain management costs within fiscal budgets	3	2.5	2	1	1	Management costs would be minimal under management alternative 1 since there would likely be no LEH permits. Alternative 2, then 3, then 4 would require increasingly greater management, as higher risk options require more intensive monitoring. Alternative 5 also has high management costs because setting LEH permit numbers requires information on population size. In general, Limited Entry Hunts are more costly for government to administer than General Open Seasons.

Objective	1: Increase	2: Stabilize	3: Reduce 20%	4: Reduce 40%	5: High bull ratio	Rationale for values
Minimize enforcement cost	3	3	2	2	3	In general, efforts to reduce a population (alternatives 3 and 4) require a larger number of seasons, and more seasons require more enforcement.
Minimize regulation complexity	3	3	2	2	1	Population reductions (alternatives 3 and 4) generally require more seasons, which increases regulation complexity. Alternative 5 (high bull to cow ratios) requires LEH or at least antler restrictions, which also increases complexity.
<i>Ecosystem health</i>						
Manage elk given available forage	1	1	2	3	1	Although there are many factors that affect ecosystem health, elk over-grazing can negatively impact grassland and shrub land health when the population is sufficiently large. Therefore, management alternatives that call for reducing the population (alternative 4 and to a lesser extent alternative 3) are more likely to contribute to ecosystem health than management alternatives that recommend increasing or stabilising the population (alternatives 1, 2 and 5).
Manage elk considering other wildlife	1	1	2	3	1	Relatively small populations (alternative 4 and to a lesser extent alternative 3) are less likely to negatively impact other wildlife species than larger populations (alternatives 1, 2 and 5).
<i>Agriculture</i>						
Reduce summer crop depredation	1	1	2.5	3	1	Smaller elk populations (alternative 4 and to a lesser extent 3) are likely to have less of an impact on growing season crop depredation. Specific hunting regulations that target non-migratory elk will be required to address this objective. Management alternatives that do not involve population reductions (1, 2 and 5) are unlikely to meet this objective.
Reduce fall to spring crop depredation	1	1	2.5	3	1	Smaller elk populations (alternative 4 and to a lesser extent 3) are likely to have less of an impact on winter crop depredation. Management alternatives that do not involve population reductions (1, 2 and 5) are unlikely to meet this objective.
Reduce elk damage to infrastructure	1	1	2.5	3	1	Smaller elk populations (alternative 4 and to a lesser extent 3) are likely to have less of an impact on infrastructure such as fences. Management alternatives that do not involve population reductions (1, 2 and 5) are unlikely to meet this objective.

Objective	1: Increase	2: Stabilize	3: Reduce 20%	4: Reduce 40%	5: High bull ratio	Rationale for values
Manage elk considering livestock forage needs	1	1	2.5	3	1	Smaller elk populations (alternative 4 and to a lesser extent 3) are less likely to compete with cattle on crown range. Management alternatives that do not involve population reductions (1, 2 and 5) are unlikely to meet this objective.

Appendix 2: Hunting Regulation Background

Regulation change proposal: Open a General Open Season for ≥ 6 point bull elk in West Kootenay MUs currently on LEH

Recommendation: Accepted with a shorter season (Oct 1-20) for 2010 and 2011. The season will likely be lengthened to align with eastern parts of the region in 2012, following an assessment of social and biological implications.

Rationale for recommendation:

The elk population in the West Kootenay has increased substantially in recent years and bull to cow ratios are currently high. The odds of being drawn for a bull Limited Entry Hunt are very low and many resident hunters have requested more bull hunting opportunities in the West Kootenay.

Cons: Opening a 6-point bull season will likely increase the bull kill, and reduce bull to cow ratios. In addition, there will likely be a considerable influx in hunters the first year or two after the season has changed. Given that many elk in this area occur on private land there will likely be conflicts between hunters and landowners. These cons are being partially addressed by recommending that the first 2 years of the season run from October 1 to 20 only. This will reduce the number of hunters (many hunters will already have killed an elk elsewhere) and will reduce the enforcement burden. Furthermore, an October season will avoid the peak of the rut, which will likely reduce bull harvest. This will help to maintain high bull to cow ratios.

Pros: Since the season focuses on older males only, there is minimal conservation risk, and bull to cow ratios are expected to remain well above 20 bulls:100 cows. Elk in the West Kootenay are more difficult to hunt because of limited access and dense vegetation compared to the East Kootenay, yet the 6-point bull elk season has been sustainable for over 10 years in the East Kootenay. A third of the West Kootenay has been on GOS for several decades, with sustainable harvest levels and significant opportunities for harvesting large mature bulls.

In summary, public opinion was mixed and there were strong opinions on both sides of the issue. However, the GOS better meets objectives to simplify and harmonize regulations, and will increase hunter opportunity.

Regulation change proposal: Open a hunt for younger bull elk (any bull, spike or 3-point)

Recommendation: Accepted spike season from Sept 10-19 in Creston, South Trench and Elk Valley special hunt zones only

Rationale for recommendation:

A spike bull season in special hunt zones only is the most conservative younger bull season and will ensure that bull to cow ratios remain high. Special hunt zones include Zone C of 4-08 (Slocan, Castlegar), Zone C of 4-06, 4-07 (Creston), Zone X of 4-02 to 4-05, 4-20 to 4-22 (S Trench), and Zone A of 4-23 (Elk Valley).

Since 1998 there have been no hunting seasons for smaller bull elk (i.e., smaller than 6 point) in the East Kootenay. As bull to cow ratios increase, hunters have been asking for additional opportunities to hunt smaller bulls.

Cons: There are currently no spike bull seasons in the province, nor have there been historically, so this season does not meet objectives for regulation simplicity or harmonization. To address this, the season would be a trial in the Kootenay Region for 2010-2014, with monitoring to assess positive and negative outcomes. This would provide valuable information available to determine whether this season could or should be applied to other parts of the province.

Pros: This season would increase hunting opportunity and provide meat-focused hunters with an option to harvest smaller (< 6-point) bull elk. This season would increase hunting opportunities for bull elk in the Kootenay Region with minimal conservation risk. Tooth data from the region indicate that less than 40% of yearling bulls and <1% of older bulls are spikes; thus most bull elk would be protected under this season. Yearling bull elk typically have a higher natural mortality rate than older bulls, and this natural mortality may decline with hunting (i.e., hunters remove animals that would die anyway). Therefore this season is expected to have less of an impact on the population, bull to cow ratios and the number of mature bulls than 3-point seasons.

Spike bull elk seasons have a long history of success in many American states. A spike only season restricted to special hunt zone only would limit the harvest and is the most likely option to maintain the Ministry's target of at least 20 bulls per 100 cows. Bulls outside these zones are protected and hence do not risk impacting hunting or conservation goals. The objective is to reduce elk population size in these zones hence even if harvest is heavy, and most spike bulls are killed, it does not conflict with population goals.

The proposed September 10 to 19 season overlaps with the new proposed season for the youth/senior hunt in special hunt zones, which would provide opportunities for people across various age groups to hunt together. For example, a parent could hunt spike bulls while their son or daughter hunts antlerless elk.

This season would provide additional hunting pressure on non-migratory elk, which may decrease the non-migratory population and/or encourage movement out of special hunt zones. This in turn would reduce crop depredation and late summer overgrazing on winter range.

Regulation change proposal: Expand and align General Open Seasons for antlerless elk in special hunt zones

Recommendation: Accepted September 1-9 bow only GOS (Creston, S Trench, Elk Valley zones); Sept 10-19 youth/senior GOS (Creston, S Trench); Sept 10-30 youth/senior GOS (Elk Valley); Sept 20-30 GOS for all resident hunters (S Trench). Note that the South Trench zone does not include MU 4-26. There are no recommended open seasons for antlerless elk in 4-26, however Limited Entry Hunts will continue.

Rationale for recommendation:

Early season General Open Seasons will focus harvest on non-migratory elk, and will contribute to elk population reductions which will reduce crop depredation and overgrazing. The seasons will allow people to hunt an area year after year without having to apply and be drawn for an LEH permit, which will likely increase hunter success and allow relationships to build between landowners and hunters.

Cons: One risk is that higher hunter could reduce the quality of the hunt experience and lead to landowner/hunter conflicts. Another risk is that some areas could have a very high harvest in the first year, but this could be accommodated for by reducing the number of authorizations for the following year. Close monitoring of harvest will be required, increasing delivery costs.

Pros: Additional GOS seasons for antlerless elk will likely:

1. Encourage hunter recruitment for people who are not youth or senior hunters
2. Allow hunters more flexibility to hunt anywhere within the special hunt zones (depending on private land access, annual locations of elk, etc.)
3. Allow hunters to hunt an area year after year without having to apply and be drawn for an LEH permit, which would likely increase hunter success and allows relationships build between landowners and hunters
4. Contribute to elk population reductions and therefore reduce crop depredation and overgrazing

This hunt would be relatively low risk because it is early in the fall, and restricted to low elevation areas only where only non-migratory elk would be targeted. If there is a higher than anticipated harvest, the number of LEH permits would be reduced to achieve overall population targets.

Regulation change proposal: Align and/or lengthen LEH seasons for antlerless elk in special hunt zones

Recommendation: Accepted (see details for season dates below) for Slocan (Sept 1-Feb 28); Creston (Oct 1-Feb 28); S Trench (Oct 1-Oct 10); MU 4-26 (Sept 20-Oct 10); Elk Valley (Oct 1-10)

Limited Entry seasons will start immediately following General Open Seasons.

Rationale for recommendation:

Cons: Later season increase the risk of overharvesting elk populations, particularly migratory elk. To address this, the LEH seasons after October will primarily be disturbance hunts designed to discourage elk from becoming habituated to private land, and to provide some relief to landowners who experience

elk depredation and harassment of domestic livestock in winter. Only a small number of permits would be issued for these hunts to avoid overharvesting migratory elk.

In addition, Limited Entry seasons will not be lengthened in the South Trench and Elk Valley until harvest rates from new 2010 General Open Seasons are monitored. LEH seasons may be expanded in these zones in 2011 or 2012.

Pros: This regulation change will likely:

1. Increase hunter recruitment and retention
2. Reduce elk crop depredation on private land and overgrazing on Crown Land
3. Increase hunting opportunity (lengthen seasons)
4. Simplify regulations within the region by standardizing antlerless season dates across special hunt zones, where appropriate

Regulation change proposal: Open Limited Entry Hunts for antlerless elk outside of special hunt zones

Recommendation: Rejected

Rationale for recommendation:

There will be many new seasons for antlerless elk in 2010. Seasons outside of special hunt zones will not be opened until the effects of new seasons are monitored, to determine whether population objectives are being met.

Regulation change proposal: Expand the special hunt zone in the Elk Valley and Northern East Kootenay Trench

Recommendation: Accepted for Elk Valley; Rejected for Northern East Kootenay Trench

Rationale for recommendation:

The new Elk Valley zone will be expanded from Fernie to north of Elkford along the main valley, to increase hunter opportunity, achieve population targets and reduce hunter crowding.

There was significant opposition to expanding the zone north in the East Kootenay Trench, because of relatively small and possibly stable or declining elk populations. This will be re-assessed for 2011 following additional consultation and population assessments.

Regulation change proposal: Combine MUs in the southern Trench and northern Trench (Zone X) to create 2 larger zones

Recommendation: Accepted for the S Trench; Rejected for the N Trench

Rationale for recommendation: Creating a larger zone in the South Trench will provide opportunities for hunters to hunt in several different MUs, which could improve the hunt experience and success rates. Combining MUs will simplify regulations, and reduce administrative and enforcement costs.

This proposal is not applicable for the Northern Trench because expanding this zone was rejected (see above).
