

Roosevelt Elk Impacts on Reforestation: Mitigation Options



Silviculture Working Group

Coast Forest Region FRPA Implementation Team

June 29 2011

Table of Contents

Acknowledgements.....	3
Introduction.....	4
Purpose.....	4
Strategic Context.....	5
Management Objectives for Roosevelt Elk	5
Roosevelt Elk Behaviour	5
Reforestation Impacts	6
Discussion.....	7
Causes and Mitigation of Physical Damage by Elk.....	8
Administrative Options When Damage Occurs.....	9
References.....	14
Appendix 1.....	15
Appendix 2.....	16
Appendix 3.....	21
Appendix 4.....	24

Acknowledgements

This discussion paper is a collaborative work prepared by members of the Coast Region FRPA Implementation Team (CRIT) Silviculture Working Group (SWG) and resource specialists. The following working group members and resource specialists contributed to this paper:

Craig Wickland RPF, MFLNRO, West Coast Region, Chair SWG,
Graham Hues RPF, Western Forest Products, SWG member
Paul Barolet RPF, North Island-Central Coast Resource District, SWG member
Shannon Pearce FP, Triumph Timber, SWG member
Rick Monchak RPF, TimberWest Corp., SWG member,
Joe LeBlanc RPF, International Forest Products, SWG member,
Jack Sweeten RPF, Chilliwack Resource District, SWG member,
Rod Negrave PhD, RPF, MFLNRO, West Coast Region, SWG member,
Scott Dunn RPF, Campbell River Resource District, SWG member,
Darryn McConkey, RPBio, MFLNRO, West Coast Region
Ellery Tetz RPF, BCTS Skeena Business Area, SWG member
Kim Brunt, RPBio, MFLNRO West Coast Region

Introduction

The historic distribution of Roosevelt Elk (*Cervus canadensis roosevelti*) on mainland BC is not well described; however, it is speculated they were widely distributed along the coast as far north as Bella Coola (Quayle and Brunt 2003). Today, distribution is limited to Vancouver Island; portions of the Sunshine Coast, especially the Sechelt Peninsula; and the vicinity of Phillips Arm; with sightings rare or absent elsewhere (Nyberg and Janz 1990, Quayle and Brunt 2003). Rocky Mountain Elk (*Cervus canadensis nelsoni*) occur south of the Chilliwack River Valley (Quayle and Brunt 2003) and on Haida Gwaii but will not be considered in this paper. Although the range of Roosevelt Elk has apparently fragmented since the 1850s, the status of the current population relative to the pre-contact level remains unknown, due to the absence of historic population estimates. The latest (2010) population estimate is 4,200 for Vancouver Island (K.R. Brunt, Ministry of Forests, Lands and Natural Resource Operations (MFLNRO), personal communication). The 2010 population estimate for the Sunshine Coast population has climbed to approximately 1,000 (D. Reynolds, MFLNRO, personal communication). The Ministry of Environment (MoE) considers the species vulnerable to human activities and has placed them on the Conservation Data Centre Blue-list. Federally, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has not assessed the conservation status of Roosevelt Elk. In order to secure Roosevelt Elk (elk) species presence in BC, the MFLNRO has been moving them into a number of drainages. The success of the translocation program and sustainable forest management planning and practices such as protection of critical winter ranges, forage and browse production generated through sustainable harvesting and reforestation, increased application of partial-cut silvicultural systems, and provisions for security habitat and access management have successfully increased numbers of elk. Elk numbers in BC are now considered as stable to increasing (Quayle and Brunt 2003). This success is increasingly compromising reforestation objectives, licensee obligations and costs in areas where elk congregate and population growth continues.

The former Ministry of Forest and Range (MFR) created an Operational Issue Forum (OIF) to identify and resolve concerns from the forest industry and government. OIF Coastal “Quick Win Idea” 6.1, 5.1 ([Appendix 1](#)) outlined a concern by industry that population increases or translocation of elk is resulting in significantly increased costs in meeting silviculture obligations. The OIF working group assigned to address this concern suggested that the Coast Region FRPA Implementation Team (CRIT) might be better able to develop a solution to the issue. CRIT agreed and assigned the task of scoping out the issue and trying to identify some possible solutions to their Silviculture Working Group (SWG).

Purpose

The purpose of this paper is to inform forest professionals of the following:

1. Factors to consider when managing for timber in areas of high elk use,
 - a. Reforestation obligation impacts that may occur as a result of elk damage,
 - b. The planning and silvicultural options available to reduce plantation damage in areas of high elk use.

2. The policy and/or legislative options available to declare obligations achieved despite elk damage.
3. Further recommendations to address gaps in knowledge, policy and legislation

This paper is based on the principle that areas referenced will be managed for saw-log production and reforested to target stocking with ecologically suitable species.

Strategic Context

Management Objectives for Roosevelt Elk

The *Wildlife Act* provides legislative authority to the Minister of Environment and Minister of Forests, Land and Natural Resource Operations to manage wildlife resources. This includes translocation of wildlife species under the delegated authority of the Regional Manager of Recreational Fisheries and Wildlife programs of the Ministry of Forests, Lands and Natural Resource Operations. See Appendix 2 for appropriate sections under the *Wildlife Act*.

Elk are managed for biodiversity values and the conservation objective for elk is generally to stabilize the populations and upgrade species status from the Blue List to the Yellow List (Secure). The recreation objectives for elk are both consumptive (hunting) and non-consumptive (wildlife viewing).

Roosevelt Elk Behaviour

Elk are the second-largest member of the deer family, after moose (*Alces alces*). Roosevelt elk in particular are larger than other subspecies of *Cervus canadensis*. Both migratory and non-migratory (resident) elk herds are found in coastal British Columbia, notably on Vancouver Island. Migratory elk occupy distinct seasonal ranges. They spend their summers feeding in high elevation areas and move to low elevation ranges for the winter. These seasonal ranges are normally within a watershed but occasionally can be separated by great distances (40 km or greater). Resident elk occur only in favourable low elevation habitat which often overlaps with the winter ranges of migratory elk herds.

Movement of migratory elk between ranges and the time spent on a specific range varies with seasonal conditions and food availability. Generally, elk spend their winters in valley bottoms under the coniferous forest cover adjacent to wetland / riparian areas with deep rich soils (Nyberg and Janz 1990). Herd size can change over time with numbers increasing to match available food supply. However, critical winter habitat provided by snow-interception and thermal cover must also be present for elk to take advantage of increased food supply in areas where moderate or deep snow accumulations occur. This is provided by coniferous stands with at least 70% canopy closure that are at least 10 m in height, although the best snow-interception is provided by old-growth stands with large limbs (Quayle and Brunt 2003). Security cover must also be present. Such cover is generally provided by coniferous stands that have at least 60% canopy closure, are at least 3 m tall, and have a patch diameter of at least 100 m (Quayle and Brunt 2003). When these factors co-occur, herd size can increase dramatically.

Reforestation Impacts

The impacts of elk on reforested areas can vary greatly between locations. These impacts on regenerating forests have not been fully quantified, but the size of a herd and whether the herd is migratory or resident can indicate the potential level of impact. Essentially, the more time a herd spends in proximity to a regenerating cut-block and the larger the herd is, the greater the potential level of damage. The following factors are thought to influence plantation damage by elk:

Physical factors:

- Proximity to seasonal (winter and summer) ranges and travel (spring and fall) corridors. Corridors could include major streams, rivers and abandoned roads,
- Location (proximity to winter or summer ranges, food sources available, etc), shape (long and narrow vs. round), number, and size (large vs. small) of cut-blocks,
- Slash levels, which reduce elk mobility,
- Snow depth, which also restricts mobility.

Biological factors:

- Herd size,
- Timing (season of planting),
- Size of regenerating stock, cedar stock terpene content - age, seedlings vs. planted rooted cuttings, genetics
- Quality and quantity of available forage and browse on a given block,
- Multi-year variability of food supply resulting from harvest scheduling and impacts on existing forage and browse sources,
- Tree species, western red cedar (*Thuja plicata*) and Douglas-fir (*Pseudotsuga menziesii*) and yellow cedar (*Callitropsis nootkatensis*) are most favoured, however, this may vary by site and other species may also be impacted,
- Recently planted seedlings are typically nutrient-loaded and are more palatable and nutritious.

Regenerating trees can be damaged in four ways:

- Browsing,
- Trampling,
- Rubbing with cambial scarring,
- Plug extraction before root egress: “pulling out”.

Timber Supply may be impacted through reduced productivity and value in the following ways:

- Increased silviculture cost could potentially make harvesting certain stands uneconomical thus decreasing the operable landbase.
- Clumpy and variable distribution of stocking, which produces not sufficiently restocked (NSR) patches,
- Reduced stand density: under-stocking,
- Shifts in species composition,
- Increased regeneration delay,

- Increase time frame for free growing,
- Reductions in log grades and value resulting from physical damage such as multiple tops and decaying wounds.

Discussion

At the management unit level (TSA or TFL) the scope and scale regarding damage caused by elk can vary greatly but has generally not been well-quantified. Where elk damage is identified as a significant forest health factor in a specific management unit, a timber supply level reduction in growth and yield could be represented as an increase in the operational adjustment factor (OAF) for a specific analysis unit (AU). Alternatively, a unique AU could be established for a specific area of the land-base deemed to be impacted by elk. Within this unique AU a specific set of forest management assumptions could be developed and modeled. Timber supply levels are generally only adjusted where impacts are greater than 1%. For example, in management units where elk are absent or are present only in small populations, the impact is likely minimal and OAF adjustment or establishment of unique AUs would not be appropriate. However, other management units with well-established populations of elk can experience significant local impacts to juvenile stands. An OAF adjustment or establishment of unique AU with specific forest management assumptions, such as increased regeneration delay, in this type of impacted management unit may be necessary. Impacts caused by elk are beginning to be noted in a number of management units, due to recent translocation, (some watersheds in the Fraser TSA for example) and/or population expansion, but the appropriateness of OAF adjustment is yet to be determined.

Elk are impacting reforestation efforts and creating additional costs for licence holders with respect to *Forest and Range Practices Act* (FRPA) obligations. The Coast OIF and the coastal industry are concerned about the additional costs associated with reforestation, which typically include repeated planting or seedling protection measures, particularly in areas where there has been a translocation of elk or where the population of elk has increased. This issue will persist and increase in geographic scope, if the MoE/ MFLNRO proceed with further elk translocation without effective population management measures. Population management measures such as increased predation and increased hunting pressure may be necessary to control local elk populations to sustainable target levels recognizing the impact of elk to other resource values including timber/reforestation objectives. It is important that the establishment of drainage level elk population targets and management not be done in isolation but in consideration of all the other resources values including timber supply and value objectives. Drainage-level elk management plans, developed through inter-agency/ industry/ stakeholder collaboration, is required to reconcile and balance biodiversity needs, habitat supply, timber objectives, First Nations interests in the supply of high-quality western red cedar, new introductions of elk and/or predators, population controls, and access.

Forest Professionals need to be aware that the potential for elk-caused damage to plantations and to regeneration in general, exists in much of south-coastal BC. Knowing the factors that will increase the likelihood of elk damage allows a forest professional to estimate the relative risk of damage and to plan mitigating measures accordingly. An awareness of both the options for mitigating damage through regeneration practices as well as the administrative options available

when damage does occur will also assist forest professionals in managing this problem. Information and recommendations from the Integrated Wildlife-Intensive Forestry Research (IWIFR) project, as summarized by Nyberg and Janz (1990) are a valuable resource. Local district Forest Management Leadership Team (FMLT) meetings may also be a useful forum for discussion of a strategic plan to address elk impacts on sustainable forest management.

Discussions should include the following:

1. Establishing elk population targets at both the landscape and watershed scale based on other resource value objectives.
2. Modified stocking standards (silviculture obligations) in areas with high target elk population levels.
3. Forwarding these discussions to other FMLTs with a goal of having a coordinated elk management for the coast.

Causes and Mitigation of Physical Damage by Elk

The following factors are associated with high potential for plantation damage by elk:

- Blocks located on valley bottom rich sites,
- Historic or current numbers of elk in the area, or imminent elk translocations,
- Block adjacent or proximate to elk seasonal ranges or migratory routes, especially if the proposed block breaks up the continuity of the Riparian Management Zone.
- Areas with security cover as well as thermal and snow-interception cover in the winter,
- Deep snow that restricts elk movement and forces them to feed on locally-abundant seedlings,
- Fluctuations in food availability at the block and watershed level caused by harvest scheduling,

Where practical, the following measures implemented at the site or harvest planning stage may mitigate plantation damage by elk:

- Manage for less desirable browse species including hardwoods in areas of high elk use: western white pine (*Pinus monticola*), Sitka spruce (*Picea sitchensis*), grand fir (*Abies grandis*), red alder (*Alnus rubra*),
- Avoid creating small openings or narrow blocks with large edges at low elevations near riparian areas in known elk range,
- Utilize slash (avoid in block piling) as protection for planted seedlings and to restrict elk mobility on the block,
- Use firmly secured cone or cage protectors for seedlings,
- Consider planting blocks later in the spring or earlier in the summer season, especially after winters with extended periods of deep snow pack,
- Harvest multiple blocks in a single year near known elk seasonal (winter or summer) ranges to exceed their browsing capacity. Note: this could negatively impact elk winter range areas and should be considered only in consultation with an appropriate resource professional or as part of a coordinated habitat management plan.
- Plant with larger stock (PSB815s and PSB1015s),
- Plant at higher density depending on elk population and local knowledge,
- Provide an alternate spring food source through seeding of grass or legumes on roads, trails and landings (Note significant knowledge gap with this factor),

- Promote site-avoidance by elk through maintenance of access to human traffic.
- Develop a coordinated plan to minimize elk-damage that includes the effects of harvest scheduling on habitat supply,
- Consider using ungulate repellents prior to seedling planting or as a maintenance application (s).

Administrative Options When Damage Occurs

Discussion of possible adjustment in stocking standards to account for elk damage will increase as elk populations increase and further translocations progress. A pivotal question is whether it is justifiable for government to expect *Forest Act* tenure holders to absorb increased silvicultural costs to establish conventionally-stocked plantations concurrent with high elk use? In those areas where a branch of government with different objectives introduces and/or encourages elk populations to utilize existing or planned cutblocks for forage opportunity the question is of particular interest. The answer falls in the realm of public policy and values.

Forest professionals are expected to develop prescriptions and professional rationales that demonstrate an awareness of the surrounding conditions near proposed blocks and how external factors, such as elk use, may impact achievement of objectives and legal obligations. For example, in some watersheds large numbers of both resident and migratory elk are known to be present in the lower portions of the valley and are already creating reforestation issues. In this situation, the forest professional must consider how elk may impact or influence reforestation objectives and take appropriate measures to achieve typical reforestation objectives or seek alternative ones. It may be reasonable to develop new reforestation objectives specific for these areas, including modification of the conventional range of stocking standards. However given the variability of possible damage, the District Manager must consider all requirements prior to his determination. In the end, the elk decide where and how much seedling damage will occur. Where damage is not fully predictable, the assignment of an alternate objective may have to wait for elk damage to develop.

There are two main legislative options available to address the stand level impacts caused by elk: Pre-harvest and post harvest options. There are also two conditions that could affect which option may be considered:

- The first is where an FSP proponent is aware of elk being present in the operating areas being proposed for harvest when the FSP was developed, and
- The second, where elk have been introduced into the operating area after the FSP was approved or introduced at anytime without the licensee being notified.

Pre-harvest Options

These include variance to the stocking standards and a multiple block stocking standard.

Variance to stocking standards:

An FSP may propose application of a variance to a specific stocking standard(s) in areas of high elk use or in close proximity to a known migratory or resident herd. Proposed variances to a stocking standard (s) may include:

- Reduced minimum inter-tree distance,

- Reduced minimum total well-spaced stem density,
- Reduced minimum preferred (assuming the stocking standard uses the preferred and acceptable format) stem density,
- Changes in preferred or acceptable species to favour those that are less preferred as elk browse (ecological suitability assumed).
- Changes to the free growing damage criteria to allow for multiple tops or leaders (similar to what is established for the white pine weevil damage to Sitka spruce)

This approach would address reforestation risk in the planning stage through flexibility in situations of known high-elk use. However, in this situation the FSP should explicitly describe what constitutes high-elk use in order to provide appropriate scope and scale for application of the variation. An elk variance tracking process is advised to summarize cumulative use in a management unit and thereby inform future timber supply analysis.

Given that elk damage is not always temporally or spatially foreseeable, another approach would be to hedge bets and prescribe a regime that could be readily adapted and amended to an alternate strategy as real damage becomes evident. Thus the scope and scale of relaxed stocking or species selection is defined and constrained by actual elk use and damage. A third option is to develop stocking standards for three levels of impact (high, medium and low), so that when damage occurs the stocking standards could be amended to the appropriate level of damage.

Multi block stocking standards:

An FSP may propose a multi block stocking standard in accordance with the *Forest Planning and Practices Regulation (FPPR) s. 45* to apply landscape-level species and stocking targets. The benefit of this approach is that there is flexibility to meet stocking and species composition targets over a larger area with less focus on meeting stocking or species composition targets on any individual block. This would allow reforestation resources to be concentrated where they could achieve the best result for example: regeneration of red cedar could be focused in areas with minimal risk of elk-damage. This may result in some stands not having optimal stocking and species composition but landscape level stocking and species composition targets would be achieved.

Post Harvest Option

This includes amendments to stocking standards, application of FPPR 46.11 ¹ and application of FPPR 97.1

Amendments to stocking standards:

Stocking standards currently approved under an operational plan, including Silviculture Prescriptions, Forest Development Plans, and Forest Stewardship Plans, could be amended to reflect the impacts of elk. Impacts on plantations would be known prior to granting of approval. The disadvantage of this approach is that multiple block-specific amendments would be required due to impacts varying between affected blocks. Future impacts to a block would require additional amendments in order to be accounted for. The test for such amendments would likely require further local discussion and definition.

¹ FPPR 46.11 does not apply to multi-block standards under FPPR 45.

Use of FPPR 46.11 (2):

Under Section 46.11 (2) of the FPPR, the licensee has the opportunity not to meet a portion of the applicable stocking standards:

(2) If the stocking within a standards unit as a whole conforms to the applicable stocking standards, an area within the standards unit is not required to meet the applicable stocking standards if

- a) The area is less than 1 ha, or*
- b) When the free growing stand is established,*
 - i. The area can be mapped and is at least 1 ha but not more the 2 ha in size, and*
 - ii. The portion of the standards unit occupied by areas referred to in subparagraph (i) does not exceed 5% of the NAR in the standards unit.*

This option would allow for small areas of net area to be reforested (NAR), such as near a road, to not meet the stocking standard provided the standard unit as a whole meets the standard.

Declarations under FPPR section 97.1:

Under FPPR 97.1 a written declaration may be submitted indicating that an obligation has been met to the extent practicable. This declaration would include a rationale outlining which specific elements of the stocking standard could not be met as a result of the elk damage and why it is not practicable to meet those elements. In this case, all impacts at FTG are known at the time the declaration is made. Discussions prior to submission would help to ensure this option is appropriately exercised.

More information on the use of FPPR 97.1 is contained within FRPA General Bulletin # 20:

<http://www.for.gov.bc.ca/ftp/hth/external/!publish/Web/frpa-admin/frpa-implementation/bulletins/frpa-general-no-20-declaration-re-free-growing-obligations-nov-19-2009.pdf>

Professional Reliance

As outlined above, professionals (both government and industry) need to be aware of potential negative impacts to plantation stocking and species composition resulting from both resident (local) and migratory elk herds. These impacts could occur on a proposed block and must be considered as part of the planning and prescription development process. Professionals preparing plans and prescriptions in areas of known high elk use should consider the factors described in this discussion paper regarding how to mitigate or reduce the plantation damage caused by elk as well as other sources of information, including IWIFR, recent research, stand establishment decision aids, local best management practices, and appropriate resource professionals. Professionals are expected to analyze and determine the potential scope and scale of these impacts and identify the risks involved in prescribing a particular regeneration strategy. If considering a new or innovative approach in managing for timber in areas of high elk use, it is suggested that a rationale be developed to support the decision and be documented on file. The Association of British Columbia Forest Professionals (ABC FP) document titled “Guidance for Professional Quality Rationales and Commitments” at

http://www.abcfp.ca/regulating_the_profession/documents/Pro_Quality_Rationales.pdf provides information for professionals to consider when developing such a rationale. Where contemplating such new and innovative practices or standards to address timber management issues in areas of high elk use, it is suggested that professionals initiate discussions with local district staff prior to submitting any proposal. These discussions are often best held in a field setting that will allow both the reviewing and submitting professionals to clearly identify the relevant risk factors associated with the proposal.

Recommendations for CRIT

The SWG recommends the following:

- 1) CRIT to advise the Coast Operational Issues Forum (OIF), MFLNRO South and West Coast Regional Management Teams, and the Policy Secretariat of the conflicting mandates of government that arise from increased elk populations and /or elk relocation. Topics to discuss should include the following:
 - Improving communications between government (MFLNRO) and forest tenure holders with respect to planned locations for elk population establishment.
 - Consultation with affected forest tenure holders regarding proposed transplant locations or changes to elk management strategies.
 - Financial impact analysis of the new or increased elk populations on reforestation obligations and timber supply
 - Balancing of elk population levels vs. impacts to reforestation obligations and timber supply
 - Identifying options for managing (reducing) elk populations in areas where increased elk populations are causing significant reforestation difficulties.
 - The option of amending FPPR section 96 (1.1) to include damage caused by elk, due to a significant increase in the local population, as an event causing damage for the purposes of granting of funding or relief of obligation under FRPA section 108 (2).
- 2) CRIT to coordinate a meeting between forest tenure holders and MFLNRO wildlife biologists (West Coast and South Coast Regions) to discuss 2011/12 elk translocation plans and proposed elk management plans.
- 3) CRIT to coordinate the collection of the following items:
 - Monitoring of plantation damage in known elk ranges by requesting forest tenure holders record elk specific damage in RESULTS using the code AE.
 - Estimating and correlating future impacts to plantations from increasing population sizes and re-location efforts.
 - Encouraging communication of approved elk specific stocking standards to licensee and MFLNRO staff within the West Coast and South Coast Regions to ensure consistency.

- Determining the additional financial costs to industry to reforest to target stocking levels in areas affected by increasing elk populations.
- 4) CRIT to recommend that MFLNRO wildlife habitat resource specialists, in consultation with industry and government forest professionals, develop a document that outlines the status and management intention for each of the major elk herd populations on the coast. It is suggested that this document be updated annually and be available for industry and government professionals as reference information.
 - 5) CRIT to recommend that FRPA General Bulletin # 20, “Declarations regarding free growing obligations met to the extent practicable under Forest Planning and practices Regulation (FPPR) section 97.1” be amended to be more consistent with legislation. Specifically it is suggested that the second paragraph be modified to remove the reference to circumstances unforeseeable at the time of prescription development as this is not specified in the regulation.
 - 6) Forest Management Leadership Teams (FMLT) to develop strategies to address elk impacts at the local level in management units with significant elk populations.
 - 7) The MFLNRO, Forest Analysis and Inventory Branch (FAIB) to model growth and yield impacts and species composition impacts resulting from elk damage as part of the regular timber supply review (TSR) process for affected management units.

References

Henigman, J., J. Turner and K. Swift. 2003. Coast Forest Region: Roosevelt Elk Wildlife Habitat Decision Aid. BC Journal of Ecosystems and Management 6(1): 51-53.

URL: www.forrex.org/jem/2005/vol6_no1_art5.pdf

Nyberg, J.B. and K.R. Brunt (editors). 1990. Deer and elk habitats in coastal forests of southern British Columbia. B.C. Ministries of Environment and Forests. Victoria, B.C., Special Report Series No. 5. URL: www.for.gov.bc.ca/hfd/pubs/Docs/Srs/Srs05.htm

Quayle, J.F. and K.R. Brunt. 2003. Status of Roosevelt Elk (*Cervus elaphus roosevelti*) in British Columbia. B.C. Ministry of Water, Land and Air Protection, Biodiversity Branch. Victoria, B.C. Wildlife Bulletin No, B-106.

Reynolds, D.R. 2010. Project Summary 2009-10, Lower Mainland Roosevelt Elk Recovery Project, British Columbia Ministry of Environment, Region 2 Fish and Wildlife Section. Sechelt

Appendix 1

Coast Forest Region

“Quick Win Idea” – Elk and FRPA S. 108 6.1, 5.1

PROBLEM The Ministry of Environment (MOE) has been reintroducing elk herds into a number of coastal drainages in the last number of years. The success of the relocation program has exceeded MOE’s expectations with significant increase in the elk populations. The elk are destroying young established plantations and preventing licensees from meeting reforestation obligations and at the same time imposing significant ongoing costs.

SOLUTION Ministry of Forests, upon request by a major licence holder, fund the extra expense to meet the obligation or waive the obligation. Another option would be to have MOE take over the obligation and fund the additional expense.

DISCUSSION Transplanting elk is a government managed program with no accountability for impacts to the timber resource or the additional cost imposed on major licence holders. Elk are damaging emerging plantations in coastal drainages, including blocks in Narrows and Stakawus, Van Bay, Skwawka, and Clowhom. Licensees have had to replant areas and are forced to use costly preventive approaches including the use of Plant Skydd™ to protect seedlings. Costs for reforestation have increased by up to \$6,000/ha.

Section 108 (2) of FRPA states the Minister must grant relief or fund a person having an obligation to establish a free growing stand if the person satisfies the Minister that;

- The obligation cannot be met without significant extra expense, and
- The person did not cause or contribute to the cause of the damage.

MOF should be applying Section 108 of FRPA as intended in those areas being damaged by elk.

What needs to be done to implement your idea?

Nothing, can be implemented immediately	X
Needs legislation, regulation, or, policy change	<input type="checkbox"/>
Needs culture shift in MOFR and/or industry	X
Requires funding in MOFR	<input type="checkbox"/>

Which business area does your idea best fit?

Compliance and Enforcement	<input type="checkbox"/>
FRPA and professional reliance	<input type="checkbox"/>
Tenure Administration	<input type="checkbox"/>
First Nation Consultation	<input type="checkbox"/>
Timber Resource Advocacy	X
Inter Agency Collaboration	X
Commercial Forest Reserve	<input type="checkbox"/>

Appendix 2

Selected sections of applicable legislation:

Forest and Range Practices Act, Forest planning and Practices Regulation

Free growing stand requirement applies to each hectare

46.11 (1) *Subject to subsection (2), a person who has an obligation to establish a free growing stand under*

(a) section 29 of the Act in accordance with section 44, 46.1 or 46.2 (5) of this regulation,

(b) Part 11 of the Act in accordance with section 69.1 or 70 of the Code, or

(c) Section 46 (1) or 111 (4) of this regulation

must ensure that the obligation is fulfilled on each hectare within the net area to be reforested, unless otherwise specified in a forest stewardship plan.

(2) *If the stocking within a standards unit conforms to the applicable stocking standards, an area within the standards unit is not required to meet the applicable stocking standards if*

(a) the area is less than 1 ha, or

(b) when the free growing stand is established,

(i) the area is mappable and is at least 1 ha but no more than 2 ha, and

(ii) the portion of the standards unit that is occupied by areas referred to in subparagraph (i) does not exceed 5% of the standards unit.

[en. B.C. Reg. 152/2007, s. 2.]

Declaration regarding free growing stand obligations met to the extent practicable

97.1 (1) *If a person who has an obligation to establish a free growing stand under*

(a) section 29 of the Act in accordance with section 44, 46.1 or 46.2 (5) of this regulation,

(b) Part 11 of the Act in accordance with section 69.1 or 70 of the Code, or

(c) section 46 (1) or 111 (4) of this regulation

considers that the obligation has been met on an area to the extent that is practicable, the person may submit to the district manager a written declaration that

(d) identifies the area,

(e) includes

(i) a statement of the extent to which the obligation has not been met, and

(ii) an explanation of why it is not practicable to fully meet the obligation,

(f) is signed by the person or on that person's behalf by an individual or individuals authorized in that regard, and

(g) specifies the date on which the declaration is made.

(2) Subject to subsection (3), on the date a declaration is submitted under subsection (1), the person who submitted the declaration is deemed to have fulfilled the applicable obligation referred to in subsection (1) (a) to (c) on the area identified in the declaration.

(3) A person who submits a declaration under subsection (1) in respect of an area remains responsible for establishing a free growing stand on the area if the minister

(a) determines, by order, that

(i) the obligation has not been fulfilled on the area to the extent that is practicable, or

(ii) *the person*

(A) *made a material misrepresentation or misstatement of fact in the declaration in relation to the obligation, or*

(B) *omitted information from the declaration that the person knew or ought to have known was material to determining whether the obligation had been fulfilled to the extent that is practicable, and*

(b) *gives written notice of the order to the person, including with the notice reasons for the order.*

(4) *The minister may give written notice under subsection (3) (b) of an order referred to in subsection (3) (a) only if*

(a) *the notice is given within 15 months after the date the district manager received the declaration,*

(b) *the person to whom the notice is given has been given an opportunity to be heard, and*

(c) *the minister determines that, given the circumstances or conditions applicable to the area,*

(i) *the obligation has not been fulfilled to the extent that is practicable, and*

(ii) *the benefits to the public derived from the person fully meeting the obligation outweigh any extra expenses that would be incurred by the person in meeting the obligation.*

(5) *An order under subsection (3) (a) is reviewable as set out in sections 80 and 81 of the Act and those sections and sections 82 to 84 of the Act apply in respect of the review.*

[en. B.C. Reg. 152/2007, s. 7.]

Free growing stands collectively across cutblocks

45 (1) *If a person specifies in a forest stewardship plan under section 16 (1) [stocking standards] that the requirement to be met by the regeneration date relates to a group of cutblocks, the person must establish stands on the net areas to be*

reforested that conform to the applicable stocking standards by the applicable regeneration date, as identified under section 16 (3) (c).

(2) If a person specifies in a forest stewardship plan, under section 16 (1), that the requirement to be met by the free growing date relates to a group of cutblocks, the person must establish stands on the net areas to be reforested that conform to the applicable stocking standards by the applicable free growing date as identified under section 16 (3) (d).

Wildlife Act

Property in wildlife

2 *(1) Ownership in all wildlife in British Columbia is vested in the government.*

Minister's powers

3 *The minister, for the purpose of access to or the management or protection of wildlife, may*

(a) acquire and administer land, improvements on land and timber, timber rights and other rights on private land, and

(b) enter into and carry out an agreement with a person, association or other body.

Permits

19 *(1) A regional manager or a person authorized by a regional manager may, to the extent authorized by and in accordance with regulations made by the Lieutenant Governor in Council, by the issue of a permit, authorize a person*

(a) to do anything that the person may do only by authority of a permit or that the person is prohibited from doing by this Act or the regulations, or

(b) to omit to do anything that the person is required to do by this Act or the regulations,

subject to and in accordance with those conditions, limits and period or periods the regional manager may set out in the permit and, despite anything contained in this Act or the regulations, that person has that authority during the term of the permit.

(2) The form and conditions of the permit may be specified by the director.

(3) If a regional manager issues a permit respecting the use of firearms, the regional manager may exempt a person from the requirements of section 9 of the Firearm

Act and may specify the conveyance or type of conveyance for which the permit is limited.

(4) The regional manager or the person authorized by the regional manager may amend the conditions of a permit as determined by him or her and issued under this section, but the amendment is not effective until the permittee has notice of it.

Appendix 3

Why Section 108 cannot be used

Under FPPR 108 (2) the minister must grant relief for the obligation to establish a free growing stand or to fund the extra expense to meet the obligation if the person satisfies the minister that they did not cause or contribute to the cause of the damage and exercised due diligence in *Use of FPPR section 108 (2)* relation to the cause of the damage. However as FPPR section 96 (1.1) defines what an event causing damage is for the purposes of FRPA section 108 (2). Note: damage from elk is not considered an event causing damage.

FPPR Section 96(1.1)

For the purpose of section 108 (2) and (6) of the Act, an event causing damage, in relation to an area in which a person has an obligation to establish a free growing stand, means

- (a) a wildfire,
- (b) an outbreak of *Dothistroma* in a lodgepole pine plantation, if the plantation was established before July 31, 2006, or
- (c) a landslide, or a flood, that makes it impossible to establish within 20 years of the commencement date a free growing stand on the area affected by the flood or landslide.

FRPA Section 108

108 (1) The minister must grant the relief described in subsection (3) to a person who has an obligation under this Act or an operational plan, other than

- (a) an obligation to establish a free growing stand, or
- (b) a prescribed obligation, and

who satisfies the minister that

- (c) because of an event causing damage, the obligation on the area cannot be met without significant extra expense than would have been the case if the damage had not occurred, and
- (d) the person
 - (i) did not cause or contribute to the cause of the damage,
 - (ii) exercised due diligence in relation to the cause of the damage, or

(iii) contributed to the cause of the damage but only as a result of an officially induced error.

(2) The minister must grant

- (a) the relief described in subsection (3), or
- (b) the funding described in subsection (4)

to a person having an obligation to establish a free growing stand if the person satisfies the minister that

(c) because of an event causing damage, the obligation to establish the free growing stand cannot be met without significant extra expense than would have been the case if the damage had not occurred, and

(d) the person

- (i) did not cause or contribute to the cause of the damage,
- (ii) exercised due diligence in relation to the cause of the damage, or
- (iii) contributed to the cause of the damage but only as a result of an officially induced error.

(3) The relief, that must be granted under subsection (1) or that may be granted under subsection (2) (a), from an obligation by the minister to a person is relief from

(a) the person's obligation to the extent only that the obligation cannot be met without significant extra expense related to the damage referred to in subsection (1) or (2), or

(b) the person's obligation in full if the minister considers that the remaining obligation, after taking paragraph (a) of this subsection into account, is inconsequential.

(4) The funding for an obligation, that may be granted under subsection (2) (b) by the minister to a person, is funding to the extent only that is required for the purpose of restoring the stand of trees on the area affected by the event referred to in subsection (2)

(a) to the stage the stand had reached at the time of the damage caused by the event, or

(b) to the stage that is consistent with an agreement between the person and the minister.

(5) A decision in any proceedings, that a person having an obligation referred to in subsection (1) or (2) did or did not do any of the things referred to in subsection (1) (d) or (2) (d), is binding on the minister.

(6) The minister may not under this section grant relief or funding in respect of an event causing damage if the event occurred before December 17, 2002.

(7) The Lieutenant Governor in Council may make regulations for the purposes of this section resolving any doubt as to what constitutes an event or as to when an event occurred.

Appendix 4

Lower Mainland Roosevelt Elk Recovery Project

Project Summary 2010-11, April 26, 2011

BACKGROUND

To restore natural biodiversity and ecosystem function in coastal forests, Roosevelt elk were relocated from Vancouver Island to the Sunshine Coast from 1987 to 1993. Eventually the need to control nuisance animals, combined with the desire to continue re-establishing elk populations in additional areas, led to the development of the Lower Mainland Roosevelt Elk Recovery Project (LMRERP) in 2000.

Utilizing Habitat Conservation Trust Foundation (HCTF) and Ministry of Transportation and Infrastructure (MoTI) funding, the LMRERP has completed more than 60 successful translocations of Roosevelt elk from source populations on the Sechelt Peninsula and Powell River area from 2001 to present. The current LMRERP project has objectives that will require the winter of 2011-12 to fulfill; however, there are plans to broaden the scope of management objectives once all 2011-12 objectives are fulfilled. The priority release sites for the 2010-11 season were Southgate River and Theodosia River.

Based on preliminary habitat assessments, release sites outlined in the current elk recovery plan include: Powell-Daniels River, Toba Inlet, Quatam River, Bute Inlet and Phillips River. Augmentation of the Phillips herd will not be completed until DNA analysis determines the origin of that herd. With achievement of these objectives, the recovery phase of the LMREP is expected to be complete and elk relocations for the purpose of population recovery may no longer be required.



Figure 1. This herd of 20 Roosevelt elk captured in Kleindale was released at Southgate River near the head of Bute Inlet in early January 2011.

Monitoring of all South Coast elk herds is ongoing. Survey results for 2010-2011 indicate these elk herds are productive (Table 2, Figure 2). Population units monitored during spring aerial surveys included most of the watersheds where elk have been relocated during this project. Natural predation of elk by cougar, wolf, and grizzly bears has become evident.

Table 1 Summary of Roosevelt elk translocations in the South Coast, 2010-2011

Capture	Release	Number	Composition
10/01/11 –Kleindale	12/01/11 - Southgate River	20	10 cows, 3 yearling bulls, 7 calves
19/01/11 –Sechelt Golf Course	20/01/11 – Theodosia River	13	6 cows, 1 bull (5x6), 6 calves
25/01/11 –Sechelt Golf Course	26/01/11 – Gray Creek	1	1 bull (raghorn)
TOTAL		34	

RESULTS

The 2010-11 project objectives were met with the translocation of 34 Roosevelt elk (Table 1). All of the 34 elk originated from the either Kleindale or Sechelt on the Sechelt Peninsula (Figure 1).

Elk were released into three priority watersheds; Southgate River (20), Theodosia River (13), and Rainy/Gray (1). These relocations bring the total number of restocked populations units in the South Coast Region to 20 units. Since 2000, a total of 415 elk have been successfully captured, relocated and released in the South Coast.



Table 2 Spring Heli Survey data, March 2011.

	Total Elk	Cows >2yrs	Calves	Yearlings	Bulls >2yrs
Classified	587	316	116	66	89
Sightability Corrected	1108*	527	193	165	223
	Ratio	100	37	31	42

*Sightability correction factor of 0.6 for cows and calves, 0.4 for bulls

Figure 2. These elk observed on the Homathko River during the spring surveys were released during the 2008-09 season.

SUPPORT

In-kind support was provided by Ministry of Forests, Lands and Natural Resource Operations wildlife biologists in collaboration with First Nations and the BC Conservation Foundation. Volunteer assistance was received from many local supporters of elk recovery. The recovery objectives were primarily met through funding received from the Habitat Conservation Trust Foundation and the Ministry of Transportation and Infrastructure.

South Coast Roosevelt Elk Distribution

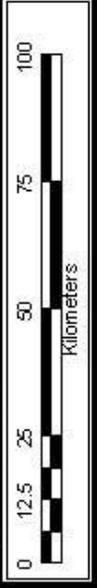
Ministry of Natural Resource Operation
March 2011



Recovering

Recovered

Remnant



Legend

	SouthCoast_2011
	PU_Mar2011

