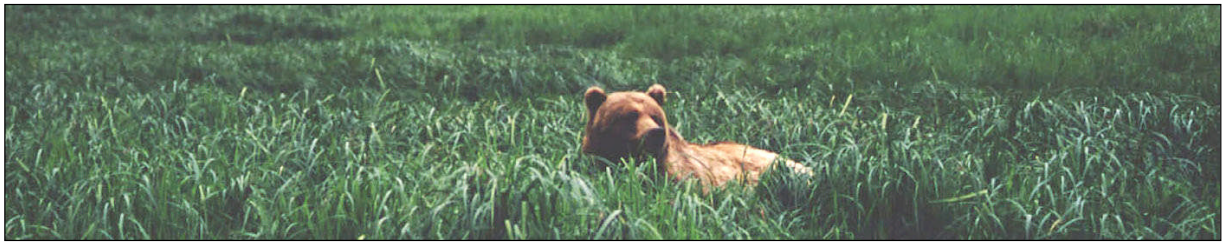

McCrory Wildlife Services Ltd.
208 Laktin Road, New Denver, British Columbia V0G 1S1
Phone: 250-358-7796; e-mail: mccrorywildlife@netidea.com

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Re: Some comments regarding Roosevelt Elk, old-growth winter habitat and logging of DL 33 at Nanoose Bay

SUMMARY

Following is a short assessment and biological opinion regarding Roosevelt elk and the logging of old-growth on District Lot 33 at Nanoose Bay on Vancouver Island. I have done detailed studies of Rocky Mountain Elk (in our national parks) and only limited surveys in Roosevelt elk habitat. I have done no field surveys of DL 33. My field experience is that I have done bear habitat surveys that included recording Roosevelt elk sign at Woss Lake on Vancouver Island and also recording Roosevelt elk winter sign during bear surveys in the Phillips Watershed on the adjacent mainland.

Eight elk were recently reported on DL 33. I reviewed video footage sent me that confirmed the presence of elk on that property. I have also been sent images of the current logging of elk habitat there. My assessment herein is based primarily on a review of several elk studies on Vancouver Island (Henigman et al. 2005. Quayle and Brunt. 2003) plus 30 years of research and conservation studies of coastal old-growth ecosystems. This includes background research of studies on coastal black-tailed deer on Vancouver Island for a Sitka deer winter range habitat model developed for the Valhalla Wilderness Society for the BC central coast rainforest (McCrory et al. 2003). I have also done extensive background literature research and field studies of seral, mature and old forest ecosystems on the BC central and north coasts. I have also had extensive involvement with input and critical review of the proposed Ecosystem-Based logging guidelines for wildlife for the Great Bear Rainforest.

It is my opinion that logging of old-growth, including elk winter range, of DL 33 is biologically unacceptable and unconscionable for the following reasons.

Various studies show that Roosevelt elk and black-tailed deer on Vancouver Island have evolved to be highly dependent on old-growth forest ecosystems during infrequent severe winter weather patterns of prolonged deep snow accumulation. Extensive clearcut logging of old-growth forests on Vancouver Island and conversion to plantation forestry has resulted in severe losses and degradations of old-growth ecosystems that are the support base for ungulate populations during bad winters. Lack of adequate old-growth winter habitat as the mainstay of ungulates results in starvation and population depressions during severe winters. The Forest and Range Practices Act, which relegates a nominal fraction of old-growth from the Timber Harvesting Land Base (THLB) for Critical Elk Winter Range (and other wildlife), is in my professional opinion, a politically motivated document strongly biased by the insatiable demands of the timber industry and is not biologically defensible or ecologically sound in view of the well documented loss of old-growth

winter range for Roosevelt Elk, coastal black-tailed deer and the biological needs of many other old-growth dependent species on Vancouver Island, some of them not even catalogued.

In a recent e-mail that was forwarded to me (Calvin Ross, dated Dec. 5, 2011 to Bernie Pearce) on the matter of logging and elk on DL 33, Mr. Ross, the Acting District Manager of South Island District Ministry of Forests, Lands & Natural Resources is politically right, there is no **legal** obligation on the part of the licencee and the Ministry to protect the elk winter range of DL 33, but biologically, what Mr. Ross and government is sanctioning is totally wrong, as the wildlife prescriptions and old-growth allocations under the Act are extremely unsound. This very process is why species such as the coastal elk are now blue-listed and under increasing threat, as are many other old-growth dependent species on Vancouver Island.

Mr. Ross is also right in stating that in terms of timing of harvesting operations, this is not a critical winter period right now (no snow) so he feels no specific concerns with timing, also stating that the Elk have other options of where to go. He states that "*As mentioned above their range is quite extensive*" and that "*the elk have other options to go to.*" Mr. Ross is totally wrong in assuming the elk have other options to go to since this does not address the extensive literature available about the dependency of elk on Vancouver Island on old-growth forests during severe winters. Given how little old-growth appears to be available in the area to elk that range in the vicinity of DL 33, where and how will this elk survive when the next bad winter hits I wonder? Besides Mr. Ross stating it is still legal to log DL 33, I would like to add that is this sort of very process of on-going superficial rationale and logging justification that he exhibits in his assessment of the elk situation, while ignoring the scientific and cumulative effects context, that also explains why so many species keep growing on the endangered list of Vancouver Island.

The other issue that should be considered by resource allocation professionals is the documented values of old forests for carbon sequestration and storage in face of the mounting and irrefutable evidence of climate change. Studies now tell us that as the impacts of climate changes begin to impact our ecosystems, maintaining large areas of intact forests offers the greatest chances for the resiliency and adaptation to change by plants and wild animals. Clearcuts offer the least resiliency and carbon storage values. Intact forests provide greater value for carbon sequestration and storage than cutover forests. BC forests have some of the highest carbon stores in Canada (avg. 311 tons per hectare). This stored carbon is worth an average of $1,072 per hectare (Wilson and Hebda 2008). This factor does not appear to be on the radar screen in the deliberations that led to the approval of logging of DL 33.

In conclusion, rationalizing the cutting of this last remnant of old-growth, albeit only important to a small, local elk herd, is not ecologically defensible when you look at how little old-growth is now left in the ecosystem - where today every last, little patch of old-growth still helps. From a broader ecological and climate change perspective and exercising the Precautionary Principle of Biodiversity, NO further old-growth should be logged or destroyed on Vancouver Island, including all old-growth habitats within elk winter range. It should all be legally protected, not legally sanctioned to be cumulatively destroyed. Studies, including Alaback (1982) suggest that at least several centuries or more are needed to restore logged or burned coastal forests to old forest status. That is a long time for recovery should we ever decide to adjust to our mistakes.

LITERATURE CITED:

Alaback, P. 1982. Dynamics of understory biomass in Sitka spruce-western hemlock forests of southeast Alaska. Ecology 63(6): 1932-1948.

Henigman, J., J. Turner, and K. Swift. 2005. 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/vol6_no1_art5.pdf

McCrory, W.P., P. Paquet, and B. Cross. 2003. Assessing conservation values for gray wolf and Sitka deer - BC central coast rainforest. Report to the Valhalla Wilderness Society, New Denver, B.C.

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, Victoria, B.C. Wildlife Bulletin No. B-106.

Wilson, S.J. and R.J. Hebda. 2008. Mitigating and adapting to climate change through the Conservation of Nature. Report to Land Trust Alliance of BC. 58 pp.

RELEVANT NOTES (some sections bold-faced for emphasis):

1.0 FROM: Henigman, J., J. Turner, and K. Swift. 2005. 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/vol6_no1_art5.pdf

Elk use various habitats throughout the year. Riparian reserve zones may satisfy some habitat requirements.

• Most forested stands greater than approximately 3 m in height provide security cover.
• Forest stands greater than 10 m in height provide snow interception cover in low snowpack zones; in deep snowpack zones, only old-growth forest is capable of providing snow interception cover.
• Adequate interspersion of forage and cover areas is a critical feature of all seasonal ranges. Stands with deciduous overstories often provide abundant forage and adequate security cover.
• Old-growth community structure usually provides forage, security cover, thermal cover, and snow interception.
• Individual stands, evenly distributed throughout the seasonal range, usually satisfy cover and forage requirements.
• To determine recent elk use of an area, locate local movement trails and look for signs of animal use.
• Elk prefer edge habitat between relatively open areas with high-quality forage and forested stands that provide cover.
• Elk use of openings is concentrated within 80 m of a forest edge.

Single tree selection, where possible, avoids creating openings which tend to encourage elk foraging.

2.0 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, Victoria, B.C. Wildlife Bulletin No. B-106.

p. iv. Several sources of information suggest a negative overall picture of the status and trend of Roosevelt Elk winter habitat in British Columbia, which has been degraded by industrial forestry.

Habitat protection is improving, **although the absolute area of protected winter range is currently difficult to determine and is not expected to exceed a small amount of high-capability habitat in the near future.**

Elk populations declined significantly on southern Vancouver Island during the deep-snow winter of 1968– 1969 when old-growth winter range was unavailable (Nyberg et al. 1990).

Forest harvesting has been largely responsible for the loss of high-quality Elk winter range on Vancouver Island. High-quality Elk winter range occurs in old forest along valley bottoms or riparian corridors, so Elk needs may conflict with the interests of industrial forestry. Regional biologists suggest that most of the prime Elk winter range on Vancouver Island was logged before the 1970s. Annual forest harvest statistics for Vancouver Island, available for the years 1981– 2000, range between 3906 and 22 892 ha per year (<1% of the total forested landbase on Vancouver Island, based on provincial baseline thematic mapping), averaging about 13 733 ha per year (<0.5% of the total forested landbase) (unpubl. data, B.C. Ministry of Forests, Forest Practices Branch, 2002). **Considering that old-growth forest, which may be critical for Elk in severe winters, takes more than 150 years to develop,** ….

Linear Disturbance

The development of linear corridors in Roosevelt Elk habitat, generally in the form of paved and logging roads, presents a potential threat to Elk populations. As a broad-scale illustration, the main transportation corridor on Vancouver Island, created by the Island Highway from Victoria to the north Island, bisects high-capability Elk habitat. This creates a barrier to movement for Elk, and may render habitat on the eastern side of the highway inaccessible. In addition to the barriers created by larger roads, overall road densities of 1–2 km of roadway/ km2 are common in many watersheds in the central Island, and densities higher than 2 km of roadway/km2 occur along much of the southeastern coast (unpubl. data, B.C. Ministry of Sustainable Resource Management, Decision Support Services, 2002). Lyon (1979) suggests that Elk habitat effectiveness would decline to zero at road densities higher than approximately 1.2 km of roadway/km2 (2.0 miles per square mile). In a review of animal response to disturbance, Shank (1979) summarized Elk responses to roads in numerous states. In general, Elk appear to avoid roadways by 200 to 1600 m.

Whether threats come from humans or other species, all interactions with Roosevelt Elk operate within the vital context of their habitat. For this reason, the greatest threat to the viability of Roosevelt Elk in the long term is the fragmentation of their habitat and the destruction of their winter range. The urban landscape continues to expand into Roosevelt Elk habitat, particularly on southern Vancouver Island and parts of the Lower Mainland, and the limited availability of old-growth forest as winter range is reduced by logging. Although it is difficult to account directly for the population effects of broad-scale habitat trends, it is easy to speculate that diminishing habitat quality in the future will only lead to diminishing numbers of Elk on Vancouver Island. In addition to direct effects, such as reduced overwinter survival, the loss and fragmentation of habitat may directly augment other threats: increasing vulnerability to predators, creating problem wildlife situations, and providing greater access for unregulated hunters.

END