



MATERIAL SUPPORTING THE NOTICE, BUT NOT PART OF THE NOTICE.

INFORMATION CONCERNING WILDLIFE HABITAT FOR THE WINTER SURVIVAL OF UNGULATE SPECIES IN TREE FARM LICENSE 8

This document is intended to provide background information and support to the legal framework of the notice of indicators of the amount, distribution and attributes of wildlife habitat required for the winter survival of ungulate species in Tree Farm License 8 (TFL8). This document is not part of the legal notice. Its purpose is to provide additional information for consideration by delegated decision makers and by those persons required to prepare results and strategies consistent with section 7(1) of the Forest Planning and Practices Regulation.

Tree Farm License 8

The Kootenay Boundary Land Use Plan – Implementation Strategy (KBLUP-IS) provides strategic direction for the management of ungulate winter range (UWR). The UWR map included in KBLUP-IS was based on the winter ranges of mule deer. Over the last several years (June 2002 to present) a working group of government agency representatives and stakeholders has worked to refine the strategic direction outlined in KBLUP-IS. It is envisioned that these refinements will be formalized through FRPA, Government Actions Regulation (GAR) in the near future. However, as that work represents a more accurate reflection of appropriate mule deer winter range management in the Boundary, specific aspects have been included to allow for transition into the GAR measures.

The significant changes from KBLUP-IS is based on the following:

1. more accurate winter range boundaries, based on modeling and stakeholder input
2. knowledge of local mule deer traditional use patterns
3. identification of planning cells; and
4. new biophysical information (i.e. revised BEC linework).

Amount:

KBLUP-IS identified approximately 67,000 hectares (ha) of ungulate winter range, which has subsequently been acknowledged as mule deer winter range (MDWR). Revisions to MDWR boundaries now depicts 8,197 ha of MDWR in TFL 8, which is less than what was identified in TFL 8 Management Plan (MP) 10 (11,084 ha). Those revisions have also contributed to a lower snow interception cover (SIC) requirement, which is 1,189 ha. MP 10 had a similar requirement for mature cover, however, it was significantly higher at 2,441 ha. Table 1 depicts the above noted differences. Due to the magnitude of these changes, it is assumed that there would not be an impact to timber supply.

Table 1: Comparison of MDWR Management Regimes

Management Regime	Winter Range Area (ha)	Required Cover (ha)
Management Plan 10	11,084	2,441
FPPR Notice	8,197	1,189

Similar to KBLUP-IS, an ecosystem based approach has been utilized to determine appropriate levels of snow interception cover (SIC) retention. This approach recognizes that SIC requirements are based on snow accumulations. Biogeoclimatic units form the basis for predicting snow accumulation, however, in some instances units have been divided based on elevation and aspect to provide greater accuracy. Table 2 describes the relationship between ‘snowpack zones’ and biogeoclimatic units. Based on the proportional representation of BEC units to the MDWR areas, a total of 1,189 ha of SIC has been determined as being necessary for the applicable MDWR area (Appendix 1).

Table 2: Boundary Snowpack Zones and SIC Retention

Snowpack Zone	BEC Unit	SIC Retention (%)
Shallow	PP IDF _{xh} IDF _{dm} (< 1000 m with aspects of 135-225°)	15
Moderate	IDF _{dm} (all subzone sites, except those noted above) ICH _{dw} MS	25, except for MS which = 20
Deep	ICH _{mk} ICH _{mw}	40

A key consideration determining the amount of SIC is related to KBLUP-IS recommendations for to ‘fire maintained ecosystems’. As these recommendations supersede direction for winter range, open forest (OF) and open range (OR) areas have been netted out of the MDWR areas. In doing so, SIC is determined based on the net area (see Appendix 1). Consequently, SIC can not be located in either OF or OR areas.

Distribution:

Figures and spatial information (shapefiles) to support the amount and distribution statements are included in the folders titled “Figures” and “Spatial Data” on the following ftp site:

ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Tree_Farm_Licenses/TFL_8/Supporting_Info/

Inclusion of draft and proposed Ungulate Winter Range boundaries in the supporting information does not prejudice the review and comment that may be ongoing around these Ungulate Winter Ranges. Where Ungulate Winter Ranges have not been through the full review and comment process, MWLAP will continue to work with affected parties to address the Ungulate Winter Range boundaries.

Figure 1 provides the most up to date information on mule deer winter range location in TFL 8. MDWR planning cells have been delineated to provide a spatial distribution of winter range attributes, such as forage and cover. In some cases planning cells are discreet winter ranges, however, in the majority of cases planning cells have been delineated to divide relatively large, or overlapping, winter ranges (eg. along major valleys, such as the Granby and Kettle Rivers). Planning cells are not specific to operating area or tenure type. Where a planning cell includes both forest license and TFL8, only the portion of TFL 8 that contributes to the planning cell is used to determine applicable MDWR area and SIC requirements (see appendix 1).

Attributes:

1. Snow interception cover is defined in KBLUP-IS as tree crown attributes that have the capability to intercept snow, and thereby reduce snow accumulations on the ground. As snow interception potential is variable dependent upon tree species, stand density, and crown shape and size, it is important to retain stems that will function in an optimum manner. Mature and intermediate aged Douglas-fir in clumps are best suited to meet this need. Larger clumps or patches with a high canopy closure are most appropriate in areas of higher snow falls.
2. Foraging habitat can be met by areas of high shrub productivity and/or stands that provide arboreal litter-fall, such as lichens and Douglas-fir needles and twigs. The former is provided in wetter sites, as well as, where early seral coniferous forests provide ample browse species. The latter is provided in older aged coniferous stands. Mature, and older, Douglas-fir needles and twigs provide greater nutritional value litter-fall than other coniferous types (species and age). A variety of foraging habitats well distributed throughout the winter range best meets the needs of over-wintering ungulates.
3. Security cover can be met by a variety of vegetation types and topography. A complex topography provides security areas for deer. Coniferous vegetation, a minimum of 2 meters in height, also provides security cover. As slopes increase the need for a greater height in coniferous vegetation is required.
4. The ability of a forest stand to intercept and retain snow pack in the forest canopy is determined by stand age and structural conditions; however, forest age is often used as surrogate to describe snow interception cover habitat. Snow interception cover serves to reduce ground snow depths thereby increasing animal mobility and food availability without unduly depleting energy stores. It typically yields litter fall in the form of twigs and arboreal lichen that is also an important winter forage requirement for deer.
5. A stand that is younger than the prescribed forest age for snow interception cover is acceptable where it can be field-verified that the younger stand will deliver the required snow interception and forage attributes.
6. In average winters, snow (or sinking) depths should generally be <25 cm (and rarely >50 cm) for deer ranges.

Appendix 1:

Boundary Mule Deer Winter Range Area and Snow Interception Cover by Planning Cell

Planning Cell Number	Gross MDWR Area (ha)	Proportion of Planning cell in TFL 8	Assumed Open Forest/Open Range Area (ha) within TFL 8	Net MDWR Area within TFL 8 Portion of Planning Cell	SIC Required for TFL 8 Portion of Planning Cell
4	1115	0.85	368	580	120.5
5	2143	1.0	914	1229	269.2
8	2039	0.05	31	71	13.0
38	992	0.5	203	293	63.1
40	319	0.35	39	72.6	17.6
41	735	0.2	57	90	17.4
42	517	0.95	199	292	69.0
43	652	0.7	140	316	75.1
46	1078	1.0	421	657	143.9
47	622	1.0	112	510	116.4
48	540	1.0	0	540	107.9
50	810	0.15	42	80	19.8
52	1175	0.8	352	588	155.9
Total	12,737		2878	5,319	1188.8