BRITISH COLUMBIA

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

INFORMATION CONCERNING WILDLIFE HABITAT FOR THE WINTER SURVIVAL OF UNGULATE SPECIES IN THE OKANAGAN SHUSWAP TIMBER SUPPLY AREA

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 the Okanagan Shuswap Timber Supply Area. 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.

The Okanagan-Shuswap LRMP (OSLRMP) provides strategic direction for the management of mule deer and moose winter ranges. The mule deer winter range map (Figure 1) represents the most up to date information on the area of mule deer winter range in the OSLRMP area. The map has been revised slightly since the OSLRMP was approved, however, revisions were expected, and have been agreed to in principle by an OSLRMP working group. The new map will be provided to government for approval later this year. The moose winter range outlined in Figure 1 is from the OSLRMP.

Okanagan-Shuswap Timber Supply Area

Mule deer:

Amount:

The amount included in this objective is based on the total area of winter range within the TSA as defined through the OSLRMP, and in the case of mule deer that has undergone some revisions. In 2001 Ministry of Forests conducted a timber supply review (TSR2) for the TSA. The information made available for TSR2 was used to determine the amount of area of mule deer winter range for this notice, as there has been no analysis of winter range area by tenure types (i.e. forest licences, woodlots and tree farm licences).

TSR2 included the OSLRMP management direction for mule deer as a ‘sensitivity analysis’, and mule deer winter range was divided into snowpack zones (see Table 1) due to the varying level of forest cover retention to be maintained within winter ranges. TSR2 sensitivity analysis indicated that there would be a slight downward pressure on timber supply based on management direction from the OSLRMP. Table 1 also shows the breakdown of timber harvesting landbase (THLB) and non-THLB for mule deer winter range that were considered in TSR2.

The OSLRMP recommends that snow interception cover (SIC) for mule deer winter range is applied at each planning cell. SIC retention is based on snowpack zones. Where two snowpack zones are adjacent to each other (usually one upslope of another eg. IDFdm above IDFxh) a weighted average is calculated to determine the SIC retention for the upper snowpack zone. In other words, a lesser retention rate is applied to the upper snowpack zone when two snowpack zones are adjacent to each other. Other factors are also incorporated into the final retention rate for each planning cell, and much of this work is not complete at this time. As such, Table 1 provides an estimated retention rate for each snowpack zone, along with the estimated number of hectares of SIC for each snowpack zone. It is assumed that a more precise SIC rate will be specified in Section 7 of the Government Actions Regulation.

Table 1: OSLRMP MDWR Area and Snow Interception Cover

Snowpack Zone	BEC Units	Forested Area	THLB (ha)	NTHLB (ha)	SIC Rate (%)	SIC Used (%)	SIC (ha)
Shallow	BG, PP, IDFxh1, IDFxh2	76,691	37,816	38,874	15	15	11,503
Moderate	IDFdk1, IDFdk2, IDFdm1, IDFmw, MS	110,634	72,996	37,638	20 - 33	25	27,659
Deep	ICH	25,867	17,467	8,409	33 - 60	50	12,934
Total		213,192	128,279	84,921			52,096

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/Timber_Supply_Areas/Okanagan_TSA/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.

As part of implementation of the OSLRMP, a working group of government agency representatives and stakeholders have met to further refine mule deer winter range boundaries. The working group have agreed to a revised mule deer winter range

boundary. This work has been endorsed by the OSLRMP Monitoring Committee, it is provided in Figure 1 as the most up to date information on mule deer winter range location in the TSA, but has not been endorsed by Government. In addition, this group has finalized planning cell boundaries. Planning cells have been delineated (see Figure 1) to provide a spatial distribution of winter range attributes, such as forage and cover. These boundaries, which have been provided to licensees and Ministry of Forests, could be used as the foundation for meeting the distribution requirement.

Attributes:

1. 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 have not matured to the state as to where they out-compete shrubs for sunlight. 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.
2. Snow interception cover is defined 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.

Moose:

Amount:
The amount included in this objective is based on the total area of moose winter range within the TSA as defined through the OSLRMP as 161,952 ha. Although TSR2 did not apply the area and forest cover constraints for moose, the forest constraints were examined by MoF as part of the LRMP sensitivity analysis, and were not considered to be constraining on timber supply. The primary reason was that the height criteria could be met at, or prior to, minimum harvest age.

Distribution:
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Moose winter ranges in the Okanagan-Shuswap TSA are based on biophysical features that result in areas of both high winter browse productivity, and snow depths that are not inhibiting to movement. In some areas of the TSA, such as the plateaus of the Okanagan Highlands and Thompson Uplands, snow accumulations do not regularly inhibit movement. In those broad areas, sites with that have appropriate soil nutrient and moisture conditions that result in high winter browse productivity generally determine winter range locations. Riparian areas and recently disturbed areas (eg. fire or timber harvest) can produce sufficient forage to maintain over-wintering moose populations. Moose winter ranges in the ICH zones in the northern part of the TSA are usually concentrated along valley bottoms where forage is not usually limiting. In those cases, snow accumulations are, and appropriate forest cover is needed to moderate snow accumulations. Figure 1 depicts the most current information on location of moose winter ranges in the TSA.

Attributes:

1. Foraging habitat – large quantities of browse biomass are required to sustain wintering populations of moose. Woody brush species, including *Salix* spp., red-osier dogwood, and *Betula* spp., are favoured forage species. The OSLRMP provides direction on forage management.
2. Cover – is important to moderate temperature extremes (thermal), moderate snow accumulations (snow interception) and provide security or reduced sight lines to moose utilizing an area. The OSLRMP provides management direction for the types and location of cover.