AMENDED - ORDER #U-5-001, U-5-002 and U-5-003 – Ungulate Winter Ranges Cariboo Chilcotin Land Use Plan, Shallow and Moderate Snowpack

This order is given under the authority of sections 9(2) and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004).

The Deputy Minister of Environment orders that:

1. This order replaces the order established on December 07, 2006 titled "AMENDED ORDER #U-5-001, U-5-002 and U-5-003 – Ungulate Winter Ranges Cariboo Chilcotin Land Use Plan, Shallow and Moderate Snowpack";
2. Within Ungulate Winter Ranges U-5-001, U-5-002, U-5-003 established on December 13, 2004, in the area of the Cariboo Chilcotin Land Use Plan, the:
   a) Stand Structure Habitat Classes
   b) Topographic Buffers
   c) Habitat Management Zones

   are established, as identified on the attached maps (Ungulate Winter Range No. U-5-001, including Habitat Stand Structure Classification, Topographic Buffers and Habitat Management Zones; Ungulate Winter Range No. U-5-002, including Habitat Stand Structure Classification, Topographic Buffers and Habitat Management Zones; Ungulate Winter Range No. U-5-003, including Habitat Stand Structure Classification, Topographic Buffers and Habitat Management Zones);
3. where there is any discrepancy between the ungulate winter range boundaries as shown in the December 13, 2004 Schedule A's and the GIS file *tuwra_bc*, the boundaries as detailed in the GIS file will take precedent. Where there is any discrepancy between the attached maps and the linework identified in the GIS files for Stand Structure Habitat Classes, Topographic Buffers or Habitat Management Zones, as stored on the FTP site ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/uwr/r5/, the GIS files stored on the FTP site will take precedent. The centre point of the line on the map denoting the ungulate winter range is what establishes the boundary;
4. The General Wildlife Measures outlined in Schedule 1 are established for mule deer (*Odocoileus hemionus hemionus*) within the Shallow and Moderate Snowpack zones of the following ungulate winter range units as identified on the attached Schedule A:
   (a) in Ungulate Winter Range U-5-001: Alix Honeyburn (dqu_3), Australian Alix (dqu_7), General Tingley (dqu_38), Lower Quesnel (dqu_60), Narcosli (dqu_64);
   (b) in Ungulate Winter Range U-5-002: Mosley Creek (dwl_1), Alkali-Dog Creek (dwl_4), Anahim Creek (dwl_5), Big Creek (dwl_11), Borland Valley (dwl_16), Chilanko Creek (dwl_24), Chimney Creek (dwl_25), Chimney-Alkali (dwl_26), Choelquoit (dwl_28), Churn Creek (dwl_29), Enterprise (dwl_33), Farwell (dwl_34), Fletcher Lake (dwl_36), Gaspard (dwl_37), Haines Creek North (dwl_40), Hances Timber (dwl_41), Hawks Creek (dwl_43), Jones Creek (dwl_49), Knife Creek (dwl_50), Koster-Grinder (dwl_51), Lone Cabin (dwl_58), Mackin-Buckskin (dwl_61), McLeese Lake (dwl_62), Meldrum (dwl_63), North Taseko (dwl_67), Puntzi Lake (dwl_69), River Ranch (dwl_71), South Chilcotin (dwl_75), South Gaspard (dwl_76), South Taseko (dwl_77), Tatlayoko (dwl_78), Williams Lake-Hawks Creek (dwl_81), Williams Lake – Chimney (dwl_82), West Chilcotin (dwl_85), West Chilko (dwl_86); and
   (c) in Ungulate Winter Range U-5-003: 111 Mile-Forest Grove (dmh_2), Big Lake South (dmh_13), Bonaparte River (dmh_15), Buffalo Creek (dmh_19), Canoe

China Gulch (dmh_22), Canoe Creek North (dmh_23), China Gulch Big Bar (dmh_27), Edge Hills (dmh_32), Fawn Lake (dmh_35), Horse Lake (dmh_44), Jesmond Stable (dmh_48), Kostering Creek (dmh_52), Lac La Hache North (dmh_53), Lac La Hache South (dmh_54), Loon Creek (dmh_59), Porcupine Creek (dmh_68), Watch Lake North (dmh_83);

5. Despite 2, the General Wildlife Measures in Schedule 1 do not apply to:
   (a) primary forest activities over an area of ungulate winter range greater than 10 ha that are in the Moderate Snowpack zone and,
   (b) in which 70% or more of the area meets the following slope and aspect conditions:
   - on north-facing aspects (between 315 degrees and 60 degrees), and
   - slope greater than 20%

   in the following ungulate winter ranges: 111 Mile-Forest Grove(dmh_2), Alix-Honeyburn(dqu_3), Australian-Alix(dqu_7), Borland Valley(dwl_16), Buffalo Creek(dmh_19), Enterprise(dwl_33), Fawn Lake(dmh_35), Hawks Ck(dwl_43), Horse Lake(dmh_44), Jones Creek(dwl_49), Knife Creek(dwl_50), Lac La Hache North(dmh_53), Lac La Hache South(dmh_54), McLeese Lake(dwl_62), Narcosli(dqu_64), Williams Lake-Hawks Creek(dwl_81), Watch Lake North(dmh_83);
6. For the purposes of section 2(3)(a) of the *Government Actions Regulation*, these General Wildlife Measures also apply to minor tenures; and
7. These General Wildlife Measures do not apply for the purposes of exploration, development or production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production under the *Mineral Tenure Act*, the *Coal Act,* the *Mines Act,* the *Petroleum and Natural Gas Act,* the *Pipeline Act* or the *Geothermal Resources Act.*

Definitions:

A primary forest activity is defined as per the definition included in the *Forest Planning and Practices Regulation*

Schedule 1 – General Wildlife Measures for Mule Deer Winter Ranges in the Shallow and Moderate Snowpack Zones

1. (a) Primary forest activities on sites ecologically capable of growing Douglas-fir must achieve at least an additional 20% in post-harvest Douglas-fir composition as compared to the pre-harvest Douglas-fir composition. For an example see Appendix 3.
   (b) Despite 1(a), no further increase in post-harvest Douglas-fir composition is required beyond 80%.
   (c) Sites with a pre-harvest Douglas-fir composition of less than 40% and a frost hazard class rating of high or very high are not required to meet the Douglas-fir composition requirements in 1(a), but existing Douglas-fir should be maintained where possible.

Definition pertaining to GWM 1:

- For harvest operations that create an opening of 0.1 ha or greater, post-harvest Douglas-fir stand composition is defined as the percent of live conifer stems greater than 1.3 meters in height within the openings measured at the earliest of: a) the time of the free to grow declaration, where applicable, or b) at twenty years.

- For single tree selection harvest treatments, post-harvest Douglas-fir composition is calculated as the proportion of basal area of Douglas-fir trees >12.5 cm diameter at breast height on the whole treatment area immediately after the harvest treatment.
- Pre-harvest Douglas-fir composition is the percent Douglas-fir estimated by pre-harvest measurements of merchantable Douglas-fir by basal area in the areas to be harvested.
- Sites are deemed to be ecologically capable for Douglas-fir regeneration if: 1) Douglas-fir is included as a preferred species in the 2002 Ministry of Forests FDP stocking standards for the Cariboo Forest Region or 2) the pre-harvest stand is composed of 40% or more Douglas-fir by basal area.
- Frost hazard rating classes are to be defined based on the process documented in Chapter 3 of Steen et. al. 1990. *Identification of Summer Frost-prone Sites in the Cariboo Region.* FRDA report #157.

2. (a) Primary forest activities must not result in the construction of roads and landings within:
   - Topographic buffers identified along major topographic features as delineated in the files "topo_buffer_U-5-001", "topo_buffer_U-5-002" and "topo_buffer_U-5-003" located on the FTP site ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/uwr/r5/, or
   - 100 m of minor ridges or minor topographic breaks identified in the field.

   (b) Despite (a), perpendicular road crossings may be constructed across the topographic breaks where there is no other practicable alternative for access to otherwise isolated timber.

3. Skid trails are to be located at least 30m away from ridges or topographic breaks, except for trails perpendicular to the feature that are required to access timber.

Definitions pertaining to GWM 2 and 3:

- Minor topographic breaks and ridges are defined as features requiring special management where the slope is greater than 15% when measured from the apex of the feature to a point 15 m perpendicular to the feature or to the nearest gully bottom if this is less than 15 m away. Ridges have a slope >15% on both sides while topographic breaks have a slope of >15% on only one side.
- Skid trails are main drag trails where full drags are taken. See Appendix 3 for additional information.

4. Subject to section 92(1) of the *Forest Planning and Practices Regulation*, primary forestry activities must not result in the construction of roads within Old Growth Management Areas.

5. Primary forest activities will result in:
   - Protection of existing Douglas-fir regeneration to the extent practicable.
   - Retention of Douglas-fir in juvenile spacing treatments.
   - A higher than average basal area within 30m either side of a ridge or topographic break than prescribed for the cutblock as a whole.

6. Primary forest activities involving Douglas-fir bark beetle sanitation to remove currently infested stems will result in:

- The volume of non-target, non-infested stems greater than 27.5 cm diameter at breast height removed being less than 10% of the total volume of infested stems removed.
- No harvesting of green un-infested Douglas-fir trees that are >37.5cm diameter at breast height except as required for safety.
- No salvage of dead trees within Old Growth Management Areas or Wildlife Tree Patches established in ungulate winter ranges to which this order applies except as required for safety.

Definitions pertaining to GWM 6 through 12:

- Damage is defined as (1) loss of one-quarter or more of the photosynthetic volume of the crown or (2) loss of either 1000 cm^2 of bark or loss of bark from one-third of the circumference of the tree.
- Residual basal area is the basal area left after harvest.
- Net harvested area does not include roads, landings or Wildlife Tree Patches.

7. In stands with mixed species, the harvest of non-fir stems will result in:
   - Harvest or damage to Douglas-fir that does not exceed 15% for stems 22.5 – 37.5 cm dbh and 5% for stems >37.5 cm dbh (including skid trail development) of the pre-harvest basal area of Douglas-fir stems in each of these two diameter class groupings.
   - Maintenance of the Douglas-fir stem density for dbh classes <22.5cm dbh to at least their long-term goals consistent with Table 2 of this order.
   - Protection of established Douglas-fir regeneration where regeneration is of good form and likely to produce a timber resource of good value.
   - Maintenance and recruitment of snags by using Wildlife Tree Patches.
   - The area covered by skid trails can not exceed 10% of the net harvested area (excluding roads, landings and Wildlife Tree Patches) in stands with ≥60% Douglas-fir that are managed for high or moderate stand structure objectives.

8. Primary forest activities applied to a stand for the purpose of removing mountain pine affected pine trees will comply with GWM 7.

9. (a) Timber harvesting practices that employ thinning-from below in stems from 12.5 to 37.5 cm dbh will result in:
   - Harvest or damage to Douglas-fir stems >37.5 cm dbh that does not exceed 10% of the pre-harvest basal area of the Douglas-fir trees >37.5 cm dbh.
   - Density of Douglas-fir stems in each 5 cm diameter class >22.5 cm dbh maintained at or above long-term goals consistent with Table 2. Cut no Douglas-fir stems in diameter classes where pre-harvest density is less than long-term goals consistent with Table 2.
   - The area covered by skid trails not exceeding 10% of the net harvested area (excluding roads, landings and Wildlife Tree Patches) in stands managed for high or moderate stand structure objectives.
   - Location of landings in non-fir areas and in areas with little or no Douglas-fir >37.5 cm dbh whenever possible.
   - Initial targeting of species other than Douglas-fir in mixed species stands.

(b) Timber harvesting practices described (a) must retain a minimum of 75% of the pre-harvest live conifer basal area (counting stems >12.5 cm dbh).

(c) Timber harvesting practices in (a) may be carried out in conjunction with practices for GWM 11 where GWM 11 timber harvesting practices are permitted. The stand is to be managed to the appropriate stand structure habitat class, as depicted in the GIS files on the MOE FTP site: ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/uwr/r5/, and consistent with Tables 1 and 2. Files of polygons depicting the spatial distribution of Low, Moderate and High Stand Structure Habitat Classes are located in each of the folders "tuwra_U-5-001.zip, "tuwra_U-5-002.zip" and "tuwra_U-5-003.zip". The specific files are titled "Stand_struc_hab_class_5-001", Stand_struc_hab_class_5-002", and "Stand_struc_hab_class_5-003".

10. Forest practices involving the clumpy single tree selection method of Douglas-fir harvesting over a series of harvest passes will result in:
    - Retention of stand structure consistent with the basal area targets described in Table 1 and residual stand structure curves described in Table 2, on the areas of low, moderate or high habitat class as depicted in the "stand_struc_hab_class" on the MOE FTP site ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/uwr/r5/.
    - A clumpy distribution of Douglas-fir trees, with clumps containing 4 – 10 or more mature trees with interlocking crowns.
    - Small canopy openings ranging in diameter from 0.3 to 1 times the height of mature trees in the stand (as measured to the stem of trees surrounding the opening) with an average opening diameter of 0.5 times the mature tree height.
    - A minimum cutting cycle of 30 years or greater.
    - Landings that are located in non-fir areas wherever practicable.
    - No material adverse damage to residual trees.
    - Not more than 10% of the net harvested area in stands managed for high or moderate stand structure objectives being covered by skid trails.

Table 1. Residual basal area targets for mule deer winter range stands in BG, IDFxm/xw and IDFdk3/dk4/dw Biogeoclimatic units in the Cariboo Region. This table sets out the minimum basal area targets for the Douglas-fir stand component of stands subject to harvest treatment. The residual basal area targets are the average for the net harvested area. Two targets are given for moderate habitat in IDFxm/xw: (A) for warm aspect stands with slopes ≥30%, (B) for all other stands.

Stand Structure Habitat Class	Biogeoclimatic Unit	Minimum Residual Basal Area Immediately Post Harvest	
		Total Basal Area ≥12.5cm (m^2/ha)	Basal Area in stems ≥37.5 cm (m^2/ha)
Low	BG, IDFxm/xw and IDFdk3/dk4/dw	≥16	≥6
Moderate	BG, IDFxm/xw (A) BG, IDFxm/xw (B)	≥22 ≥22	≥8 ≥11
	IDFdk3/dk4/dw	≥22	≥11
High	BG, IDFxm/xw	≥27	≥15
	IDFdk3/dk4/dw	≥29	≥16

Note: Residual Ponderosa Pine is an acceptable, but not preferred contributor, to targets in Table 1 in the following mule deer winter ranges: Loon Ck (dmh_59), Bonaparte River (dmh_15), Porcupine Creek (dmh_68), Edge Hills (dmh_32), and China Gulch-Big Bar (dmh_27).

Table 2. Values for development of residual stand curves for managing mule deer habitat in BG, IDFxm/xw and IDFdk3/dk4/dw biogeoclimatic units in the Cariboo Region. Separate requirements are given for two different situations in moderate habitat in IDFxm/xw: (A) for warm aspect stands with slope ≥30%, (B) for all other stands. Combinations of various levels of B, D, q and the large tree reserve can produce a wide range of residual stand curves to meet the mule deer habitat requirements described in Table 1.

Stand Structure Habitat Class	Biogeoclimatic Unit	Recommended values defining residual stand curves			
		B (m2/ha, ≥12.5cm)	D (cm)	q (using 5 cm dbh classes)	Large Tree Reserve (m2/ha, >D)
Low	BG, IDFxm/xw and IDFdk3/dk4/dw	≥16	≥50	1.25 – 1.4	0 – 1.6
Moderate	BG, IDFxm/xw (A)	≥22	≥55	1.25 – 1.4	0 – 2.0
	BG, IDFxm/xw (B)	≥22	≥60	1.25 – 1.35	0 – 2.2
	IDFdk3/dk4/dw	≥22	≥60	1.25 – 1.35	0 – 2.2

High	BG, IDFxm/xw	≥27	≥65	1.2 – 1.35	0 – 2.7
	IDFdk3/dk4/dw	≥29	≥70	1.2 – 1.35	0 – 2.9

11. The targets for the IDFxm/xw ecosystem in Tables 1 and 2 of GWM 10 will be applied to the IDFdk portions of the following winter range units:
    Chilanko Creek (dwl_24), Choelquoit (dwl_28), Puntzi (dwl_69), South Taseko (dwl_77), West Chilcotin (dwl_85), West Chilko (dwl_86), Bonaparte River (dmh_15), Canoe-China Gulch (dmh_22), China Gulch-Big Bar (dmh_27), Edge Hills (dmh_32), Loon Creek (dmh_59), Porcupine Creek (dmh_68).

12. Until the year 2026, timber harvesting practices described in GWM 10 will be restricted to opportunities within each ungulate winter range set out in Table 3 by Habitat Management Zone.

13. Timber harvesting practices described in GWM 10, that are carried out before the year 2026, must retain a minimum of 80% of the pre-harvest merchantable Douglas-fir basal area of stands of trees on ungulate winter ranges to which this order applies.

Table 3 – GWM 10 Harvest Opportunities within Ungulate Winter Ranges

Habitat management zones are depicted in the GIS files "hab_man_zones_5-001", "hab_man_zones_5-002" and "hab_man_zones_5-003" on the MOE FTP site ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/uwr/r5/ within the folders tuwra_u-5-001.zip, tuwra_u-5-002.zip, and tuwra_u-5-003.zip.

Mule Deer Winter Range	UWR Plan No.	Unit No.	Timber harvest opportunity by Habitat Management Zone within the deer winter range.												
			1	2	3	4	5	6	7	8	9	10	11	12	13
Alix Honeyburn	U-5-001	dqu_3	X	X	X	A	A	A	A	A	A	A	A		
Australian Alix	U-5-001	dqu_7	X	A	A	A	A	A	A						
General Tingley	U-5-001	dqu_38	A	A	A	A	A	A	A	A	A	A			
Lower Quesnel	U-5-001	dqu_60	M	A	A	A	A								
Narcosli	U-5-001	dqu_64	A	A	A										
Alkali-Dog Creek	U-5-002	dwl_4	L	L	L	M	L	L	L	L	A				
Anahim Creek	U-5-002	dwl_5	X	L	L										
Big Creek	U-5-002	dwl_11	X	X	X	X	L								
Borland Valley	U-5-002	dwl_16	A	A	A										
Chilanko Creek	U-5-002	dwl_24	L	A											
Chimney Creek	U-5-002	dwl_25	M	M	M	A									
Chimney_Alkali	U-5-002	dwl_26	A	A	M	A	A	A							
Choelquoit	U-5-002	dwl_28	X												
Churn Creek	U-5-002	dwl_29	P	A	A										
Enterprise	U-5-002	dwl_33	M	X	L	A	A								
Farwell	U-5-002	dwl_34	L	X	L	L	X								

Fletcher Lake	U-5-002	dwl_36	X	X	X								
Gaspard	U-5-002	dwl_37	L	L									
Haines Creek North	U-5-002	dwl_40	L	X									
Hances Timber	U-5-002	dwl_41	L	L	L	L	L						
Hawks Creek	U-5-002	dwl_43	L	L	M	A							
Jones Creek	U-5-002	dwl_49	L	L	L	A							
Knife Creek	U-5-002	dwl_50	M	L	M	M	A						
Koster-Grinder	U-5-002	dwl_51	P	A									
Lone Cabin	U-5-002	dwl_58	P	P	A	A							
Mackin-Buckskin	U-5-002	dwl_61	L	L	X	A							
McLeese Lake	U-5-002	dwl_62	A	L	A	M	A						
Meldrum	U-5-002	dwl_63	X	X	L	X							
Mosley Creek	U-5-002	dwl_1	L	M	X	M	M	L	A				
North Taseko	U-5-002	dwl_67	A	A	M	M	M						
Puntzi Lake	U-5-002	dwl_69	L	X	L								
River Ranch	U-5-002	dwl_71	X	L	L	L							
South Chilcotin	U-5-002	dwl_75	L	X	L	M	A	A					
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
South Gaspard	U-5-002	dwl_76	L	X									
South Taseko	U-5-002	dwl_77	L	A	L	L	L						
Tatlayoko	U-5-002	dwl_78	L	L	L	X							
West Chilcotin	U-5-002	dwl_85	L	L	X	A	L	L					
West Chilko	U-5-002	dwl_86	X	L	M	A							
Williams Lake-Chimney	U-5-002	dwl_82	M	M	A	M	A	M	M				
Williams Lake-Hawks Creek	U-5-002	dwl_81	L	M	M	A	A	A					
111 Mile - Forest Grove	U-5-003	dmh_2	L	A	A	A	A	L	A	A	n/a	A	n/a	A	A
Big Lake South	U-5-003	dmh_13	L	L									
Bonaparte River	U-5-003	dmh_15	A	A	A								
Buffalo Creek	U-5-003	dmh_19	A	A	A	A							
Canoe China Gulch	U-5-003	dmh_22	M	M	A	L							
Canoe Creek North	U-5-003	dmh_23	L	L									
China Gulch Big Bar	U-5-003	dmh_27	A	A	A	A							
Edge Hills	U-5-003	dmh_32	A	A									
Fawn Lake	U-5-003	dmh_35	A										
Horse Lake	U-5-003	dmh_44	A	A	M	M	A						
Jesmond Stable Creek	U-5-003	dmh_48	A	A	P								

Kostering Creek	U-5-003	dmh_52	M M M
Lac La Hache North	U-5-003	dmh_53	L A A X L L A
Lac La Hache South	U-5-003	dmh_54	L X A A
Loon Creek	U-5-003	dmh_59	L L
Porcupine Creek	U-5-003	dmh_68	A M A
Watch Lake North	U-5-003	dmh_83	L L

Legend for timber harvesting opportunities:

P = Park or Protected Area = No timber harvesting is permitted. Note: some zones which are not designated as "P" may contain a small portion of a Park or Protected Area.

X = No timber harvest opportunities are available.

L = Potential harvest opportunity for those areas within the management zone designated as Low on the *Spatial Distribution of Stand Structure Habitat Classes Map.*

M = Potential harvest opportunity for those areas within the management zone designated as Moderate or Low on the *Spatial Distribution of Stand Structure Habitat Classes Map.*

A = Potential harvest opportunity for all areas within the management zone, to be managed toward the High, Moderate or Low objective, as designated on the *Spatial Distribution of Stand Structure Habitat Classes Map.* All Schedule B (crown land) portions of woodlots are in this category.

n/a = not applicable. These zones are the private land portion of a woodlot.

Signed this 28th day of Feb, 2007
Chris Trumpy, Deputy Minister
Ministry of Environment

Appendix 1

Note that the appendix is not part of this legal Order. It is intended to provide guidance for meeting the General Wildlife Measures addressed in the order.

Exemptions from General Wildlife Measures

1. Authority to consider an exemption from the requirement to comply with these General Wildlife Measures (GWM) is provided in Section 92(1) of the Forest Planning and Practices Regulation. For instances where it is not practicable to comply with these GWM, a person proposing to conduct forestry activities may choose to seek an exemption from the requirements to comply with the applicable GWM. The requisite official may grant an exemption, with conditions.

   An exemption application should be submitted to the Minister's delegate for the Region where the Ungulate Winter Range is located (Regional Manager - Ministry of Environment), with a rationale describing the nature of the problem, why it is impracticable to comply with the GWM, and options to integrate winter range conservation with proposed forest practices. This submission of information with the request for exemption will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption. The applicant must not proceed with activities until the exemption is received by the applicant.

   The exemption process is meant to apply in cases where it is found to be impracticable to comply with GWM given the specific situation and circumstances pertaining to compliance with a specific GWM applicable to a specific area of land, in this case, an area located within a specific ungulate winter range. Exemptions are a special administrative process that allows a person the authority to operate in a manner not otherwise allowed under law, due to the special circumstances identified at a specific site, or on a specific area of land. These provisions should not be used broadly to alter the true intent of the law applicable to winter ranges established by order under authority of the Government Actions Regulation. The exemption provision is not applicable for the purposes of broad or blanket exemption from the requirement to comply with GWM across numbers of winter ranges, unless it can be demonstrated to the satisfaction of the requisite official that it is impracticable for practices being carried out at specific locations in each winter range to comply with the GWM.

   Salvage of dead (non-infectious) timber resulting from severe natural disturbance may be proposed as an exemption if the proposal results in a net benefit to the Ungulate Winter Range species being managed for, as opposed to taking no action.

Appendix 2

Note that the appendix is not part of this legal Order. It is intended to provide guidance for meeting the General Wildlife Measures addressed in the order.

Snowpack Zones in the Cariboo-Chilcotin

A map of mule deer winter ranges and snowpack zones in the winter ranges in the Cariboo-Chilcotin can be accessed at the following ftp site:
ftp://wmlftp.env.gov.bc.ca/pub/outgoing/mdwr/all_tsa_region_maps/mdwr_snwpck_cclup.pdf

TABLE A1. Definition of snowpack zones for mule deer winter range management in the Cariboo-Chilcotin, based on biogeoclimatic units.

Snowpack Zone	Biogeoclimatic zones and subzones[a]	Applicable General Wildlife Measure Order	Applicable Management Plan
Shallow	BG-all, IDFxm, IDFxw	Order for Shallow and Moderate Snowpack Zones[c]	*Management Plan for Shallow and Moderate Snowpack Zones* (2002)
Moderate	IDFdk 3 & 4, IDFdw, SBPSxc, MSxk, SBSmh[b]		
Transition	SBSdw1& 2, SBPSmk, SBPSdc, MSxv, SBSmh[b]	Order for Transition and Deep Snowpack Zones	*Management Plan for Transition and Deep Snowpack Zones* (2005)
Deep	IDFmw2, ICH-all, SBSwk, SBSmc, SBSmw		

[a]Biogeoclimatic zones: BG=bunchgrass, IDF=Interior Douglas-fir, SBPS=Sub-Boreal Pine–Spruce, MS=Montane Spruce, SBS=Sub-Boreal Spruce, ICH=Interior Cedar Hemlock
Subzones: x=very dry; m=moist; w=warm; d=dry; k=cool; c=cold; h=hot; v=very cold
[b]Note that the SBSmh is shown in two snowpack zones. The portion of the SBSmh south of Quesnel is in the moderate snowpack zone while the portions of the SBSmh north and east of Quesnel City are in the transition snowpack zone.
[c] Note that there are some exceptions, depending on slope and aspect, for some areas within winter ranges in the moderate snowpack zone, as described in the Order.

Some mule deer winter ranges are located within more than one snowpack zone. When a winter range is situated partially within both the moderate and transition snowpack zones, for example, the General Wildlife Measures Order for Shallow and Moderate Snowpack Zones and the *Management Plan for Shallow and Moderate Snowpack Zones* would apply to the area within the moderate snowpack zone, while the General Wildlife Measures Order for Transition and Deep Snowpack Zones and the *Management Plan for Transition and Deep Snowpack Zones* would apply to the winter range area within the transition snowpack zone.

Appendix 3

Note that the appendix is not part of this legal Order. It is intended to provide guidance for meeting the General Wildlife Measures addressed in the order.

Additional Information

1. The *Management Strategy for Mule Deer Winter Ranges in the Cariboo-Chilcotin Part 1a: Management Plan for Shallow and Moderate Snowpack Zones* (2005) is available at: http://wlapwww.gov.bc.ca/car/env_stewardship/ecosystems/mdwr_strat/mgmtplan.html

2. Maps of the Spatial Distribution of Stand Structure Habitat Classes (Long-term Objectives) for individual mule deer winter ranges are available at: ftp://wmlftp.env.gov.bc.ca/pub/outgoing/mdwr/all_mdwr_hab_classes/

3. For consideration of forest health on mule deer winter ranges, see the *Management Strategy for Mule Deer Winter Ranges in the Cariboo-Chilcotin Part 1a: Management Plan for Shallow and Moderate Snowpack Zones.*

4. The Regional Biodiversity Conservation Strategy Update Note #7 *Integration of the Biodiversity Strategy with a Douglas-fir Beetle Suppression Strategy – Interim Direction* December 2005 outlines the process and conditions to follow when considering sanitation harvest for Douglas-fir bark beetle in Old Growth Management Areas. Biodiversity Strategy Updates are located at: http://ilmbwww.gov.bc.ca/ilmb/lup/lrmp/northern/cclup/biodiv/biodiv7.pdf

5. For the purpose of skid trails in this order, skid trails refer to main trails where typically full drags are taken. For example, if a line skidder backs off the main trail to pull in single trees, these tracks off the main trail are not included in the 10% limit. Similarly, if a feller-buncher carries trees to a main trail then the area travelled off the main trail, while carrying cut trees, is not included in the 10% maximum.

6. For the purposes of determining the post-harvest Douglas-fir composition requirement of GWM 1, here is an example: If the pre-harvest stand composition is determined to be 99% pine, 1% Douglas-fir, the required post harvest stand composition of Douglas-fir would be 21%. Definitions of pre and post-harvest composition are described following GWM 1.

7. Table A2 shows the sequence of management steps that is required to deal with various stand conditions and to move various stand structures towards the desired long-term condition while maintaining adequate habitat quality.

Table A2. Timing and sequence of management actions for various stand types and conditions.

	Progression towards long-term stand structure objectives		
Applicable stand type or situation	**1st pass**	**2nd pass**	**3rd and subsequent passes**
A. Stands with significant current Douglas-fir beetle	Apply Douglas-fir beetle sanitation (Harvest Type 1). Then apply harvest treatments appropriate to the stand type in column 1 of this table.		
B. Harvest of non-Fir stems in mixed species stands	Harvest of mountain pine beetle-infested stems with minimal damage to Douglas-fir (Harvest Type 2 and 3)	Apply first pass of single tree selection when economic harvest can be made while ensuring that basal and tree size targets are not exceeded in the residual stand. (Harvest Type 5)	At 30-year or greater intervals apply subsequent single tree selection passes (Harvest Type 5)
C. Harvest of Douglas-fir in all situations other than A,B,D,E, and F.	Apply "thinning from below" (Harvest Type 4) or Apply first pass of single tree selection when economic harvest can be made while ensuring that basal and tree size targets are not exceeded in the residual stand. (Harvest Type 5)	After 30 years or more, apply 2nd pass of single tree selection (Harvest Type 5)	
D. Subhygric or wetter sites with < 40% Douglas-Fir	Do not need to manage for mule deer winter range stand structure values (Harvest Type 6)		
E. Group selection harvest on cool aspects of transitional winter ranges listed in General Wildlife Measures Order.	Manage using recommendations for the transition snowpack zone from Part 1b: *Management Plan for Transition and Deep Snowpack Zones* (Harvest Type 7)		
F. Old Growth Management Areas	No harvest except very limited bark beetle sanitation or trap tree use as directed by the Ministry of Forests and Range.		

Appendix 4

Note that the appendix is not part of this legal Order. It is intended to provide guidance for meeting the General Wildlife Measures addressed in the order.

Guide to Planning within Mule Deer Winter Range

The following information, along with Table A2, were written to provide guidance when planning forest activities in mule deer winter range.

1. How do I know if I am within the boundaries of a mule deer winter range in the Cariboo-Chilcotin?
Mule deer winter range boundaries were established under the Government Actions Regulation of the Forest and Range Practices Act and can be found at:
http://www.env.gov.bc.ca/wld/uwr/ungulate_app.html

2. There are two General Wildlife Measure orders for mule deer winter range in the Cariboo-Chilcotin. How do I know which order applies?
One of the orders contains General Wildlife Measures for those areas within winter ranges that are in the shallow and moderate snowpack zones, while the other applies to the areas within winter ranges that are in the transition and deep snowpack zones. Appendix 2 defines the snowpack zones by biogeoclimatic zones, and will direct you to the appropriate order. Some winter ranges are located entirely within one of the snowpack zone categories and therefore only one of the GWM orders will apply, while others may be located within multiple snowpack zones and require the use of the appropriate measures from both orders.

The first page of both orders list which winter range the order applies to. For winter ranges in multiple biogeoclimatic zones and multiple snowpack zones, both orders are to be reviewed to determine if one or both orders apply.

In some winter ranges within the moderate snowpack zone, there are exceptions where the Order for the Transition and Deep Snowpack zones will be applied instead of the Order for the Shallow and Moderate Snowpack zones. The specific winter ranges where the exceptions occur are listed in the orders, and will apply on treatment units greater than 10 ha, in which 70% or more of the area is on north-facing aspects (between 315 degrees and 60 degrees) and has slopes greater than 20%.

3. What are the steps for planning a forestry activity within a mule deer winter range?
The Order for the Transition and Deep Snowpack Zones contains one Schedule. Schedule 1 contains the General Wildlife Measures 1 - 16, some of which apply to all forest activities and others that are designed specifically by activity. Maps of individual mule deer winter ranges that are covered by the Order are located at the ftp site noted in the Order. These maps show the spatial distribution of stand structure habitat classes that are (described) in the GWMs of Schedule 1. Locating your area of interest on one of the maps will show which stand structure habitat class you are managing towards, and which targets to apply from the corresponding GWMs in Schedule 1.

The Order for the Shallow and Moderate Snowpack Zones is similar to the Transition and Deep Snowpack Order, but contains 13 General Wildlife Measures.

To help determine which particular GWMs within an Order apply, the map files on the ftp site also show biogeoclimatic zones, topographic buffers and Habitat Management Zones, as well as the stand structure habitat class.

The Order for the Transition and Deep Snowpack Zones, identifies six different stand conditions that require different types of treatment:

1. GWM 4 identifies stand conditions to be managed for group selection or thinning from below using the direction in GWMs 6-11.
2. GWM 14 identifies and specifies management requirements for sites requiring sanitation harvest treatments for Douglas-fir bark beetle.
3. GWM 15 identifies and specifies management requirements for sites requiring salvage treatments for pine mortality due to Mountain pine beetle.
4. GWM 16 identifies and specifies management requirements for sites to suitable for thinning from below.
5. GWM 3 identifies subhygric sites for which no specific silviculture requirements for mule deer management are required.
6. GWM 3 identifies Old Growth Management Areas as no-harvest areas. Additional requirements and exceptions relating to Old Growth Management Areas within the winter range are provided in GWM 13.

The direction in GWM 12, relating to location of roads and landings, applies to harvest of all stand types and treatment types within the winter range.

The Order for the Shallow and Moderate Snowpack Zones identifies the following different types of stands and treatments:

1. Requirements and exceptions relating to forest activities in Old Growth Management Areas within the winter range are provided in GWM 4.
2. GWM 9 identifies and specifies management requirements for sites to suitable for thinning from below.
3. GWM 10 identifies and specifies management requirements for sites suitable for the clumpy single tree selection method of Douglas-fir harvesting. This is to be used in conjunction with Table 3 until the year 2026, after which time Table 3 will no longer apply.
4. GWM 7 identifies and specifies management requirements for sites requiring salvage treatments for pine mortality due to Mountain pine beetle and for the non-fir harvest in mixed species stands.
5. GWM 6 identifies and specifies management requirements for sites requiring sanitation harvest treatments for Douglas-fir bark beetle.

The direction in GWMs 1-5 apply to harvest of all stand types and treatment types within the winter range.