

ORDER – Ungulate Winter Range
#U-6-018

Moose – Nass TSA

This order is given under the authority of sections 9(1), 9 (2) and 12 (1) of the *Government Actions Regulation* (B.C. Reg. 582/04).

The Regional Executive Director of Forests, Lands and Natural Resource Operations orders that:

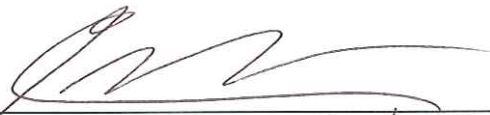
1. the ungulate winter ranges (UWR) shown in the maps set out in the attached Schedule A (UWR U-6-018) are established for moose (*Alces alces*);
2. the general wildlife measures (GWMs) outlined in Schedule 1 are established for UWR U-6-018 and boundaries contained in the GIS file *tuwr_bc*;
3. the specified areas outlined in general wildlife measure 8 are established;
4. where there is a discrepancy between the UWR boundaries as shown in the attached Schedule A and the GIS file *tuwr_bc*, the boundaries as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the UWR is what establishes the boundary;

Schedule 1 – General Wildlife Measures

In this schedule:

- a) Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act* (FRPA) and the regulations made there under, unless otherwise defined in the order.
- b) “regeneration delay” is defined as in Ministry of Forests and Range Glossary of Forestry Terms in British Columbia (March 2008) as “*the period of time between harvesting and the date at which an area is occupied by a specified minimum number of acceptable well-spaced trees*”.
- c) Moisture Regime –refer to *Field Manual for Describing Terrestrial Ecosystems* (BC Ministry of Forests and Range and BC Ministry of Environment, Research Branch) for definitions of subhygric to subhydric.
- d) The minimum size for a silvicultural treatable unit is:
 - One hectare for pure subhygric to subhydric sites;
 - Two hectares of noncontiguous subhygric to subhydric sites within ecosystem complexes where the individual sites are greater than 0.25 ha and such sites comprise 20% or more of the ecosystem complex area.

- e) Thermal Cover is defined as canopy cover that moderates air temperature which results in cooling during the summer and a reduction of wind chill in the winter.
 - f) Security Cover is defined as sufficient vegetation cover and/or terrain features that prevent displacement or disturbance behaviour in moose, despite adjacent activities or predator movement that might otherwise elicit these behaviours.
 - g) The designation, identification and definition of mainline roads must be considered in context of the applicable circumstances in consultation among qualified resource professionals, inclusive of a government biologist responsible for habitat protection.
 - h) Deactivated refers to either partial or complete treatment of roads and trails with the intent to prevent motor vehicle access, while taking into account site specific operating constraints.
1. No timber harvesting is permitted within moderate, high and very high value mapped forage areas as depicted on the maps set out in the attached Schedule A.
 2. Less than 20% of the area of any given cutblock shall be more than 100 m away from adjacent mature forest cover (for the purposes of security cover).
 3. Maintain, enhance or restore moose forage production, post timber harvest, on 100% of subhygric to subhydric sites large enough to be considered a silvicultural treatable unit.
 4. Retain 10% of mature forest as thermal cover within 100m of mapped forage areas as depicted in colour outline or colour shading shown on the maps set out in the attached Schedule A.
 5. Security cover within or adjacent to cut blocks must be provided and at least 80% of the security cover shall be separated from other areas of security cover by no greater than 200 meters.
 6. All security cover shall be retained directly adjacent to moderate, high and very high value mapped forage areas as depicted on the maps set out in the attached Schedule A.
 7. Retain >30% mature + old forest canopy for snow interception in each winter range polygon outside of mapped forage areas.
 8. All roads, excluding mainline roads, within 500 m of moose winter range must be deactivated following achievement of regeneration delay or within 1 year of cessation of industrial activities.
 9. All roads within moose winter range must be deactivated following achievement of regeneration delay or within 1 year of cessation of industrial activities.



Signed this 17 day of Sept, 2014

Eamon O'Donoghue, Regional Executive Director

Ministry of Forests, Lands and Natural Resource Operations, Skeena Region

Appendix 1 – General Information

The following information is intended to provide background information and support to the legal order establishing UWR U-6-018. This appendix is not part of the legal order.

1. As per section 2(2) of the *Government Actions Regulation*, the order entitled “ORDER – Ungulate Winter Range # U-6-018” does not apply in respect of:
 - a. any of the following entered into before the order takes effect:
 - i. a cutting permit;
 - ii. a road permit;
 - iii. a timber sale licence that does not provide for cutting permits;
 - iv. a forestry licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
 - v. subject to subsection (3), a minor tenure.
 - b. a declared area;
 - c. areas described in section 196(1) of the FRPA; and
 - d. areas referred to in section 110 of the FPPR.

In these instances the requirement to comply with the order and the general wildlife measures does not apply.

2. Authority to consider an exemption from these general wildlife measures is provided in section 92(1) of the FPPR, section 79(1) of the *Woodlot Licenses Planning and Practices Regulation* and section 36(3) of the *Range Planning and Practices Regulation*. An exemption may be provided if the Minister’s delegate is satisfied that the intent of the general wildlife measure will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister’s delegate (Regional Executive Director – MFLNRO, for the Region that the UWR is located) with a rationale describing the nature of the problem and options to integrate UWR conservation with proposed forest and/or range practices. A spatially explicit strategy for conservation of moose winter range habitat will assist in timely consideration of the matter when submitted to the Minister’s delegate, and will inform the conditions, if any, of the exemption that may be granted. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

3. Improvements in scientific and biological information, including field assessments completed by qualified professionals, may lead to amendment(s) consistent with the *Government Actions Regulation* of moose UWR measures including:
 - a. the addition of new, or deletion of existing moose winter range polygon units,
 - b. the adjustment of moose winter range unit boundaries, and
 - c. modification of a specific measure.

4. For cut blocks that fall under section 196 (1) of FRPA or S. 14(4) of FPPR (declared area), a meeting and or site visit should take place to discuss the overlap and develop suitable mitigation measures where practicable.
5. Within identified moose winter range, harvest using silviculture systems, block configurations, patch sizing and patch distribution that will provide forage, visual screening, thermal and security cover, and snow interception while integrating timber and silvicultural management objectives.
6. Emphasis for thermal cover, snow interception and security cover management is adjacent to mapped forage areas. A forested buffer of 50 to 100 m wide is recommended, depending on topography. It is also recommended that forest types be retained adjacent to moderate, high and very high value mapped forage areas.
7. Moose forage production can be facilitated post timber harvest by promoting gap openings through reduced stocking standards, cluster planting, spacing and pruning at the silvicultural treatment unit level.
8. Moose winter range management plans should be prepared for winter ranges that are subject to forest development, where funding is available. These plans should include a monitoring component to ensure adaptive management can correct any errors, should they be found, in moose winter range placement or the management regime.
9. An exemption from GWM 8 or 9 may be granted if the intent of road deactivation can be achieved through access restrictions. Access restrictions include attempt to prevent access by 4WD and off-road vehicles, and legislative authorities for vehicle closure.
10. A mainline, for purposes of this Order, includes main roads and major branch roads, and may be defined/described as a road that is the primary valley bottom or lowest practicable elevation road that provides access through order 4 and larger watersheds, or large landscapes where the terrain is rolling plateau and not defined valleys; is defined and constructed (grade, alignment, width, surfacing and drainage) primarily for long-term efficient transportation of logs and equipment, not as a road intended for yarding, skidding, or loading of logs; is used continuously or frequently throughout the full rotation of the forest (through time) and inactivity for primary forest operations is generally weeks or months, not years; is subject to regular maintenance so that road deactivation is not required to protect and maintain the integrity of the road prism, drainage structures, and the adjacent ecological resources; may have extended periods (several years) of inactivity, planned for operational or wildlife conservation purposes, requiring temporary deactivation or access control.
11. Within a moose winter range, primary forest activities to focus within a short time frame, followed by a long phase of inactivity to reduce access related impacts to wintering moose.
12. Moose winter range management plans should address both the risk of disturbance and methods for limiting access to moose winter ranges during their wintering period (November 1 to May 1).

Appendix 2: Moose Habitat Attributes

Compiled by Len Vanderstar, R.P. Bio, R.P.F., MFLNRO: Skeena Region, from surveys and published species accounts.

Life Requisite	Habitat Attribute and Description
<p>Forage Habitat</p>	<p>Structural Stage</p> <ul style="list-style-type: none"> • Early seral stages (3 and 4: herb-shrub and pole-sapling) usually provide ideal foraging conditions, supporting abundant deciduous browse year-round within secondary winter range. • Valley bottom fluvial complexes that define primary winter range are noted for providing abundant forage, by virtue of containing many pocketed or larger seasonally wet open areas, regardless of structural stage. • Aquatic habitats provide moose with aquatic forage during spring and summer which is important for lactating females. Buckbean (<i>Menyanthes trifoliata</i>), pondweed (<i>Potamogeton spp.</i>), and sedges are the predominant aquatic/wetland forage species noted in the Nass watershed. <p>Shrub Cover</p> <ul style="list-style-type: none"> • Shrub-dominated habitats that occupy 15 to 30% of a defined area (e.g. moose winter range) generally provide sufficient forage in both growing and winter seasons, provided that height requirements (below) are met. <p>Shrub Height</p> <ul style="list-style-type: none"> • 1 to 5 m for growing season (also assists in providing visual screening); >2.5 m for winter forage. <p>Shrub Species Composition</p> <ul style="list-style-type: none"> • Important woody browse includes willow, red-osier dogwood, high-bush cranberry and young subalpine fir within the Nass South SRMP area; black twinberry, elderberry, mountain ash, aspen and cottonwood are also utilized depending on availability. <p>Aspect</p> <ul style="list-style-type: none"> • Site aspect is generally not important. However, south- and west-facing slopes have reduced snow depths and are first to be snow-free in spring. This provides moose access to shrub cover, early spring herbaceous emergents and green-up forage. <p>Landscape Position</p> <ul style="list-style-type: none"> • Valley bottom floodplains and other fertile drainages/areas have high forage productivity and diversity, particularly for early spring green-up forage.

Life Requisite	Habitat Attribute and Description
Thermal Cover	<p>Basal Area</p> <ul style="list-style-type: none"> • 10% measured by pre-harvest mature & old forest cover. <p>Species Composition</p> <ul style="list-style-type: none"> • Thermal cover species should be composed of large canopy, somewhat open grown conifer species, notably very mature and old-growth spruce and subalpine fir.
Snow Interception	<p>Canopy Cover</p> <ul style="list-style-type: none"> • In areas of high snowfall, moose movement is facilitated by forests with crown closure exceeding 50%, preferably >65% (Moose Wildlife Habitat Decision Aid, JEM-Vol. 11, No.3). Snow interception cover is three dimensional and is optimized through both horizontal and vertical (canopy depth) structural development. <p>Area Coverage</p> <ul style="list-style-type: none"> • Recommend more than 50% of winter range to have favourable snow interception canopy cover in high snow depth, wetter biogeoclimatic zones.
Security Cover	<p>Visual Screening</p> <ul style="list-style-type: none"> • Stem density that obscures 90% of the moose at 60 m provides optimum visual screening, thus enhancing the animals' sense of security. A measureable criteria would be when a 2 meter x 2 meter dark surface area has only 0.4 m² visible, keeping in mind broadleaf leafless winter conditions. • A diverse understory that obscures a moose at close range also provides effective security cover. • Gullied terrain may offer security opportunities, and could be considered good security habitat. <p>Structural Stage</p> <ul style="list-style-type: none"> • Suitable security cover could occur in structural stages 3, 4, 5, 6 and 7; however, the best security cover will likely occur in structural stages 3, 4 and 5 (5 being young forests).
Calving	<p>Landscape Position</p> <ul style="list-style-type: none"> • Forested patches with good security cover, surrounded by extensive wetland complexes, forested peninsulas (water or wetland), and islands, are primary calving sites.

Life Requisite	Habitat Attribute and Description
	<p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of calving sites is critical.
Rutting Areas	<p>Landscape Position</p> <ul style="list-style-type: none"> • Optimum rutting areas include subalpine meadow complexes, wetland complexes, extensive floodplains, early to mid-seral natural wildfire burned areas, and deciduous stands adjacent to high forage areas. <p>Adjacency</p> <ul style="list-style-type: none"> • Isolation or seclusion of rutting areas ensures minimal disturbance to moose activity, and thus more successful mating behaviour.

