

TFL 44
UNGULATE WINTER RANGE PLAN
U-1-013

Prepared by:

**Ministry of Water, Land and Air Protection
Nanaimo, B.C.**

November 2004

Executive Summary and Endorsement

The intent of this report is to provide the background and biological rationale for 58 ungulate winter ranges (UWRs) confirmed within Tree Farm License (TFL) 44, under Section 10 of the Government Actions Regulation (GAR) of the Forest and Range Practices Act (FRPA). This includes the Clayoquot Land Use Decision area within TFL 44.

Of the 58 ungulate winter ranges within TFL 44, there are 54 ranges confirmed for Columbian black-tailed deer, and 4 for Roosevelt elk. Three of these winter ranges are located within the Clayoquot Land Use Decision area. This report describes the assessment methodology used in the refinement of winter range boundaries and includes specific information on each of the winter ranges.

This report will:

- 1) Outline ungulate winter ranges confirmed under GAR section 10;
- 2) Describe the methodology used to identify, assess and delineate the UWR polygon boundaries;
- 3) Provide the biological rationale for the confirmed UWRs;
- 4) Provide an operational analysis for each winter range and an overall summary;
- 5) Provide General Wildlife Measures for managing the UWR in TFL 44.
- 6) Provide summaries of stakeholder and First Nations comments on the confirmed UWR.

Over the last few years, representatives from the Ministry of Water, Land and Air Protection (MWLAP), Weyerhaeuser Company Ltd. and Ministry of Forests (MOF) worked together to determine which ungulate winter ranges on TFL 44 were proposed and later confirmed.

The intent of the UWR confirmation process is to delineate the best possible winter ranges, taking into account habitat suitability/capability, distribution across the landscape and impacts to timber harvesting operations. Historically, UWRs within TFL 44 were proposed and mapped on an individual basis as areas were encountered during review of forest development. As these winter ranges were not assessed in a strategic manner when they were established, MWLAP determined that a review of all existing historical UWRs was necessary prior to areas being proposed for confirmation.

MWLAP, Weyerhaeuser and MOF partnered together to complete this review and evaluate additional areas of interest (AOIs) within TFL 44. MOF was actively involved at the outset, but eventually withdrew to function more in an advisory role, as the result of staffing/time constraints. The confirmation process began with the gathering and review of historical ungulate winter range information. MWLAP staff then completed a thorough office review and conducted winter range habitat assessments to fill information gaps. Weyerhaeuser conducted several timber supply impact analyses, provided GIS mapping services and participated in field reviews and numerous meetings with MWLAP regarding UWR placement, operational implications and impacts to timber supply.

Refinements to winter ranges included adjusting boundaries, deleting ranges and portions of ranges which were not of high value and replacing deleted ranges with higher value areas of interest.

This process resulted in 58 UWRs being selected for confirmation within TFL 44. All of the confirmed UWRs are thought to be necessary for the survival of local deer populations in critical winters and have high to extremely high value within a landscape context. Every effort has been made to ensure that the biological principles behind establishing winter ranges, as outlined on page 1 of the 2000 UWR Memorandum of Understanding, have been adhered to.

Three types of UWR are recognized by the May 23, 2003 *Memorandum of Understanding on Establishment of UWR and Related Objectives*. All of the confirmed UWR areas within TFL 44 fall into the Type 1 UWR category. As such, they were either previously mapped as wildlife management (Ew) areas in Timber Supply Review 1 (TSR 1) or TSR 2, or are UWRs proposed in place of other areas netted down as Ew in TSR 1 or TSR 2. For TFL 44, the policy direction in determining the amount of Type 1 UWR that is agreed to go forward for confirmation is that the UWRs, once confirmed, should have no greater impact on timber supply today than could be attributable to UWR in TSR 2 (occurred in 1998). Since the TSR 2 data (based on Management and Working Plan No. 3 (MP #3)) was difficult to re-create, TSR 3 data (MP #4) was used as the base for impact calculations. The impact from UWRs in MP #4 was determined to be 2253 ha of the Timber Harvesting Land Base (THLB). This THLB impact is loosely termed the 'budget'. Based on TSR 3 (MP #4), a separate budget of 106 ha of THLB was determined for the Clayoquot Land Use Decision portion of TFL 44.

The 55 confirmed UWRs within TFL 44 (outside of the Clayoquot Land Use Decision Area) have a total THLB impact of 2280 ha. The net difference between the area recommended for confirmation and the area accounted for in MP #4 is 27 THLB ha. This 27 ha variance was agreed to by Weyerhaeuser and MLWAP. The additional three winter ranges located within the Clayoquot Land Use Decision Area of TFL 44 have a total THLB impact of 106 ha. In total, the 58 confirmed UWRs have a THLB impact of 2386 ha.

A joint letter endorsing this UWR plan for TFL 44 follows:



November 29, 2004



File: 36470-01/SIFD

To: Gordon Macatee
Deputy Minister
Ministry of Water, Land and Air Protection

Re: Endorsement of the Ungulate Winter Range report for TFL 44.

On behalf of the district/regional offices of the Ministry of Water, Land and Air Protection and Weyerhaeuser Company Ltd., we are pleased to endorse the report *TFL 44 Ungulate Winter Range Plan U1-013* and submit it for your consideration as Statutory Decision Maker.

This plan provides background and biological rationale, and strategic advice on Ungulate Winter Range (UWR) establishment for 58 UWRs confirmed within Tree Farm License (TFL) 44, under Section 10 of the Government Actions Regulation of the *Forest and Range Practices Act*. Components of the Ungulate Winter Range plan related to forest development were established as General Wildlife Measures (GWMs) under the *Forest and Range Practices Act* to provide direction to agencies governed by this *Act*.

There are 58 ungulate winter ranges confirmed within TFL 44. The confirmed polygons constrain 2386 hectares of timber harvesting land base (THLB). This amount is approximately 27 hectares more and approximately 201,930 m³ more standing timber than the grandparented UWRs (2359 hectares, based on Management Plan No. 4). This volume impact is reduced to approximately 110,000 m³ when recent harvesting within grandparented UWRs is taken into account. THLB and volume increases are reflected primarily within non-conventional logging areas and are acceptable to the licensee as reductions in the amount of winter range within the conventional harvest land base (135 ha) were achieved.

While defining the UWR polygons, Weyerhaeuser and MWLAP were working under the May 2000 MOU, with the joint understanding that UWR revisions were to be made on an area-for-area basis within the timber harvesting land base (THLB). Historic winter range areas were reviewed and revised to capture the highest quality winter range based on

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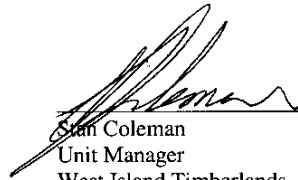
biological suitability, with due regard to maintaining the THLB impact as close to that of the grandparented areas as practical. The field and office review resulted in a revised set of UWR polygons that both Weyerhaeuser and MWLAP agreed were high value biologically, in acceptable locations and within acceptable limits of the THLB budget. Analysis of the volume impact at the end of this process revealed the increased volume present in the confirmed UWRs, though this was not a prime driver for the revision process.

The THLB and volume impact increases are acceptable to Weyerhaeuser Company Ltd., and they are supportive of the UWR plan.

We would like to thank First Nations for their contributions.



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Acknowledgements

This submission is very much a joint effort, spanning work completed over several years. We would like to acknowledge the following people for their roles in the redefinition of winter range and/or in the preparation of this ungulate winter range proposal.

Ministry of Water, Land and Air Protection/ Ministry of Sustainable Resource Management

Bob Cerenzia, Linda Sinclair, Kim Brunt, Ron Diederichs, Sue McDonald, Dori Manley, Vanessa Anderson, Jason Charlwood and Brian Cavanagh.

Weyerhaeuser Company Ltd.

Mike Davis, Ross Pettit (Pacific Spatial Systems Ltd.), Mike Hooper, Glen Dunsworth, Steve Northway and Wayne French (all of Weyerhaeuser).

I would like to personally thank MacMillan Bloedel Ltd. / Weyerhaeuser Company Ltd. for their contributions to the UWR process. Throughout the years they have provided UWR assessments virtually upon request. This information proved invaluable during the UWR confirmation process.

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We would like to thank all of the First Nations for their contributions.

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Table of Contents

Executive Summary and Endorsement	i
Acknowledgements.....	v
Table of Contents	vi
List of Tables	viii
1.0 INTRODUCTION.....	1
1.1 Purpose	1
2.0 BACKGROUND	1
2.1 Legislative Framework.....	1
2.2 Columbian Black-Tailed Deer Winter Range Requirements	3
2.2.1 <i>Winter Forage</i>	3
2.2.2 <i>Winter Cover</i>	4
2.2.3 <i>Seasonal Movements</i>	4
2.3 Roosevelt Elk Winter Range Requirements.....	6
2.3.1 <i>Winter Forage</i>	6
2.3.2 <i>Winter Cover</i>	6
2.3.3 <i>Seasonal Movements</i>	7
2.4 Study Area.....	9
2.5 Summary of Previous Work Completed to Define UWRs	9
3.0 METHODS	10
3.1 Historic UWR Data Compilation.....	10
3.2 Winter Range Assessments (MWLAP Office and Field Review)	11
3.3 Mapping.....	11
3.4 Negotiations Between Weyerhaeuser and MWLAP	11
3.5 Consultation.....	12
4.0 UWR Budget and Impact Analysis.....	12
4.1 UWR Budget and Impact Analysis.....	12
5.0 RESULTS AND DISCUSSION	14
5.1 UWRs for Confirmation.....	14
5.1.1 <i>Habitat Suitability / Capability</i>	14
5.1.2 <i>Ungulate Winter Range Value - Watershed / Landscape Context</i>	14
5.2 THLB Impact Summary	14
5.3 Boundary Description	23
6.0 UWR GENERAL WILDLIFE MEASURES.....	23
7.0 LITERATURE CITED.....	25
8.0 DEFINITIONS	26

9.0	INDIVIDUAL UWR MAPS	27
APPENDIX A		28
Legislation		28
APPENDIX B		47
Grandparenting Letter		47
APPENDIX C		52
Consultation Summary - Stakeholders		52
APPENDIX D		54
First Nations Record of Consultation Summary.....		54
APPENDIX E		59
1:110 000 Overview Map.....		59
APPENDIX F		60
Individual UWR Maps.....		60

List of Tables

Table 1. Vancouver Island Columbian black-tailed deer winter range assessment variables.	5
Table 2. Vancouver Island Roosevelt elk winter range assessment variables.	8
Table 3. Comparison of timber harvesting land base and volume impacts of UWRs from MP #4 and UWRs confirmed in TFL 44 – excluding the Clayoquot Land Use Decision portion (all figures are net land base and volumes from MP #4 data).....	13
Table 4. TFL 44 Ungulate Winter Ranges.....	15
Table 5. Maps of TFL 44 UWRs.....	27
Table 6. Stakeholder consultation summary.	53
Table 7. TFL 44 First Nations record of consultation summary.....	55

1.0 INTRODUCTION

1.1 Purpose

The intent of this report is to provide the background and biological rationale for 58 ungulate winter ranges (UWRs) confirmed within Tree Farm License (TFL) 44, under Section 10 of the Government Actions Regulation (GAR) of the Forest and Range Practices Act (FRPA). This includes the Clayoquot Land Use Decision area within TFL 44.

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This report will:

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- 5) Provide General Wildlife Measures for managing the UWR in TFL 44.
- 6) Provide summaries of stakeholder and First Nations comments on the confirmed UWR.

2.0 BACKGROUND

2.1 Legislative Framework

While there are a number of policies in place relating to ungulate winter ranges in the South Island Forest District (Appendix A), it is the Government Actions Regulation (GAR) which describes a formal legislative basis for establishing UWRs. Section 10 of the GAR states:

- 10 (1) The Minister of Water, Land and Air Protection may establish an area as an ungulate winter range if satisfied that
 - (a) the area contains habitat that is necessary to meet the winter habitat requirements for a category of specified ungulate species, and
 - (b) the habitat referred to in paragraph (a) requires special management that is not otherwise provided for under this regulation or another enactment.
- (2) The Minister of Water, Land and Air Protection may establish an ungulate winter range objective for an ungulate winter range.

In August of 2003, a Memorandum of Understanding (MOU) on the Establishment of Ungulate Winter Ranges and Related Objectives was developed between MWLAP, the Ministry of Forests (MOF) and the Ministry of Sustainable Resource Management (MSRM). The purpose of the MOU is to expedite and facilitate the orderly confirmation and establishment of ungulate winter ranges and related objectives across the province, in order to support the Forest and Range Practices Act (FRPA). Three types of UWR and objectives are recognized by the May 23, 2003 MOU.

All of the confirmed UWR areas within TFL 44 fall into the Type 1 UWR category. As such, they were either previously mapped as wildlife management (Ew) areas in Timber Supply Review 1 (TSR 1) or TSR 2, or are UWRs proposed in place of other areas netted down as Ew in TSR 1 or TSR 2.

The May 23, 2003 Memorandum of Understanding defines Type 1 as:

UWR and objectives that have been identified and incorporated in TSR1 and/or TSR2 and were:
(a) identified in a wildlife management plan or strategy approved before October 15, 1998, or
(b) mapped before April, 1998 but not included in a wildlife management plan or strategy, or
(c) included in TSR1 or TSR2 before April, 1998 but not mapped.

The May 11, 2000 Memorandum of Understanding specifies that in order to be acceptable as an ungulate winter range, the mapped area must meet at least one of the following criteria:

1. a combination of topographic and vegetative features defining high-quality winter range, as appropriate for the species and the locality, as determined by regional wildlife or habitat staff of MWLAP;
2. a documented history of winter use, as determined by regional wildlife or habitat staff of MWLAP; or
3. in localities that are regularly occupied by an ungulate species during the winter but that do not have sufficient high-quality winter range as defined under point 1 above, a combination of topographic and vegetative features that provide the most suitable habitat for winter range. This is the least preferred of these three criteria and should be used relatively infrequently.

Typical topographic and vegetative features to be used in delineating winter ranges are:

- slope
- aspect
- elevation
- topographic shading
- presence of rock outcrops or cliffs
- forest cover type (species composition, height, age, volume or basal area, canopy closure of overstory)
- species composition and abundance of understory vegetation
- species composition and abundance of arboreal and terrestrial lichens
- stand heterogeneity

- size and configuration of area.
- adjacency of other important habitats such as early winter and spring ranges
- proximity to other winter ranges

The legislative background surrounding the confirmation process for UWRs is described in detail within Appendix A.

2.2 Columbian Black-Tailed Deer Winter Range Requirements

A comprehensive review of Columbian black-tailed deer winter habitat requirements can be found in the handbook entitled “*Deer and elk habitats in coastal forests of southern British Columbia*” edited by Nyberg and Janz (1990). This handbook summarizes the findings of extensive deer and elk research carried out as part of the ‘Integrated Wildlife-Intensive Forestry Research’ (IWIFR) program of the 1980’s and includes detailed information on deer ecology, habitat requirements, and forestry interactions.

The following summary for Columbian black-tailed deer has been drawn largely from Bunnell (1990). Winter range assessment variables with associated rankings are also summarized (Table 1).

Winter is the most critical season for black-tailed deer. During mild winters or in the shallow snowpack zone, deer may find forage and cover in a wide variety of forest conditions. While older second growth stands may satisfy winter range requirements in the shallow snowpack zone, old-growth habitats are required to satisfy critical winter habitat requirements in the moderate and deep snowpack zones (Nyberg and Janz 1990).

Critical stand structure features of winter range are: large, well-developed crowns; small openings within a variable overstory canopy that averages 65-90% closure; and, multiple canopy layers with an understory of shade tolerant conifers. These features are particularly important for deer survival during harsh winters because they influence snow depth, availability of forage, and security cover (Bunnell 1990).

Topographic features also influence deer survival by influencing snow depth and distribution. Topographic features important to critical winter range include: southerly aspects; moderate to steep slopes (40-100%); low elevations (< 1000 m); and minimal shading from adjacent mountains. The presence of rock outcrops or bluffs is also beneficial (Bunnell 1990).

2.2.1 Winter Forage

Western red cedar, Douglas-fir, deer fern, red huckleberry, salal and arboreal lichens are all key forage species during the winter. Taller forage species such as salal and huckleberry become important when shorter forage species are covered by snow. Arboreal lichen and conifer litterfall are very important food sources when snow depth restricts the availability of rooted forage species. During severe winters, arboreal lichens and the lower branches of western red cedar and Douglas-fir may be the major sources of food (Bunnell 1990).

2.2.2 Winter Cover

Winter cover requirements to ensure the survival of black-tailed deer focus on the interception and amelioration of snowfall events.

Snow Interception Cover: Snow interception cover is defined as coniferous stands at least 10 m in height with a canopy closure of 60-90% that provide relatively shallower snow depths than occur in openings. Shallower snow depths reduce the amount of energy expended in travelling and provide access to forage that would otherwise be buried in more open habitats. Old-growth coniferous forests, particularly those with a significant component of Douglas-fir, provide the best snow interception. These stands have a branch structure that is superior to second-growth stands at intercepting and holding snow in the canopy (Brunt 1990).

2.2.3 Seasonal Movements

Three distinct groups of deer may occur in a given watershed: resident deer who always stay close to the areas they were raised (termed 'natal' ranges); regular migrators, who spend long periods away from their natal ranges each year; and, irregular migrators, who move away from their natal ranges less regularly and for shorter periods of time. Regular migrators are known to have natal ranges at relatively high elevations. These deer travel an average of 5.5 km to their winter ranges. Irregular migrators have been found to move to winter ranges only after snow accumulates on their natal ranges, traveling an average of 3 km to a winter range (McNay 1995).

Because deer are not strongly territorial and home ranges of different deer overlap, large numbers of deer can become concentrated in areas of favourable habitat. Winter deer densities exceeding 100 deer per square kilometre may be reached on critical old-growth winter ranges (Bunnell 1990).

Table 1. Vancouver Island Columbian black-tailed deer winter range assessment variables.

VARIABLE	VALUE	RANK	COMMENTS
% SLOPE	<40; >100 40-50; 90-100 50-90	LOW MOD HIGH	Moderate to steep slopes preferred
ASPECT	NW-NE; flat NE-ESE; WSW-NW ESE-WSW	LOW MOD HIGH	Generally south aspect slopes preferred; west usually better than east
ELEVATION (m)	<300; >1000 300-600; 800-1000 600-800	LOW MOD HIGH	
OVERSTORY COMPOSITION	LOW <i>HIGH</i> MOD <i>MOD</i> HIGH <i>LOW</i>	LOW MOD HIGH	Non-italicized=Relative amounts of Douglas-fir and hemlock to other areas within watershed <i>Italicized=Relative amounts of cedar (red or yellow) and balsam to other areas within watershed</i>
STAND VOLUME	LOW MOD HIGH	LOW MOD HIGH	Relative to average stand volumes within the watershed
% CANOPY CLOSURE	<50; >90 50-90* 50-90*	LOW MOD* HIGH*	If relatively uniform throughout the stand If relatively variable throughout the stand
LICHEN LOAD	LOW MOD HIGH	LOW MOD HIGH	Relative to amounts within the watershed
UNDERSTORY COMPOSITION	LOW MOD HIGH	LOW MOD HIGH	Relative amounts of <i>Vaccinium</i> , salal, Douglas-fir and western red cedar to other sites within the watershed
UNDERSTORY	LOW MOD HIGH	LOW MOD HIGH	Relative to amounts within the watershed
OTHER FACTORS:	<i>The following factors are not currently quantified during DWR assessments but they can significantly influence the overall ability of an area to satisfy DWR requirements</i>		
TOPOGRAPHIC SHADING	The amount of shading from adjacent hillsides is a critical factor influencing winter range suitability (the more shaded, the less valuable the area).		
HETEROGENEITY	Topographic heterogeneity ("benchiness") is preferable to a uniform slope. *Overstory heterogeneity (variations in canopy closure) provides enhanced forage production and thickets for hiding in open canopy areas, and greater snow interception in areas of more closed canopy.		
ROCK OUTCROPS	Rock outcrops provide topographic security cover (vantage points), favourable thermal conditions on sunny days, and areas that lose snow more readily during snow ablation periods.		
RELATIVE DEER USE	Pellet groups, tracks, trails, sightings, beds, rubs and shed antlers all indicate relative amounts of use. Shed antlers conclusively indicate winter use; rubs indicate late summer or fall use. Current deer population levels in the area need to be known before the relative level of use can be determined (i.e. what is heavy use during a period of low deer population levels may only be considered moderate or low use during high deer density periods).		
LANDSCAPE FACTORS	Important landscape level considerations affecting the relative value of an area as a deer winter range include the following: a) position in the watershed (low, mod, or high snowfall area - DWR more critical in areas of higher snowfall); b) distance to other winter ranges (greater distances between winter ranges increases their individual importance); c) adjacency to high quality spring and summer range; d) the capability of adjacent stands to satisfy deer habitat requirements; and e) factors affecting local climatic conditions such as exposure to dominant winds or marine influences.		

Source: K. Brunt, Ministry of Water, Land and Air Protection, Nanaimo, B.C.

2.3 Roosevelt Elk Winter Range Requirements

A comprehensive review of Roosevelt elk winter habitat requirements can be found in the handbook entitled “*Deer and elk habitats in coastal forests of southern British Columbia*” edited by Nyberg and Janz (1990). This handbook summarizes the findings of extensive deer and elk research carried out as part of the ‘Integrated Wildlife-Intensive Forestry Research’ (IWIFR) program of the 1980’s and includes detailed information on elk ecology, habitat requirements, and forestry interactions.

The following summary for Roosevelt elk has been drawn largely from Brunt (1990). Winter range assessment variables with associated rankings are also summarized (Table 2).

Winter is the most critical season for Roosevelt elk. Winter range for elk on Vancouver Island is generally found in low elevation river valleys and the lower part of watersheds. During mild winters or in the shallow snowpack zone, elk forage extensively in openings (natural openings and recent clear-cuts) and open forests, especially those on rich, moist sites. When snow conditions preclude feeding in more open areas (snow depth >30 cm or snow crusted), elk will shift to densely canopied mature or old-growth forests on floodplains or moderately steep southerly slopes where snowpacks are lower (Brunt 1990). While older second growth stands may satisfy winter range requirements in the shallow snowpack zone, old-growth habitats are required to satisfy critical winter habitat requirements in the moderate and deep snowpack zones (Nyberg and Janz 1990).

Winter Forage

2.3.1 Winter Forage

Elk diets in the winter are usually much less diverse than those of other seasons. Annual plants have died completely back and many short forage plants are buried by snow. In mild winters with little or no snow, elk rely heavily on grasses, sedges, deer fern, and twinflower. Willows, cottonwood, elderberry and devil’s club are commonly eaten throughout winter along with common shrubs such as salal, dull Oregon-grape, and huckleberry. When snow accumulations exceed about 30 cm, much more conifer foliage is eaten. Western red cedar and western hemlock can make up to 40% of the late winter diet (Brunt 1990).

Because Roosevelt elk are large, herding animals, they require habitats with concentrated sources of high quality, preferred forage species. Typically, these are located on moist sites with deep rich soils. Key yearlong feeding habitats include open conifer stands (<70% canopy closure), deciduous-dominated stands (>50% deciduous) and natural openings including wetlands, marshy meadows, seepage sites, and estuaries. Riparian areas adjacent to lakes, streams and floodplains of major river valleys also have very high value. In winter and spring, borders of south aspect (110-250°) rock outcrops are high value due to warming effects and early initiation of spring forage (Brunt 1990).

2.3.2 Winter Cover

Winter cover requirements to ensure the survival of Roosevelt elk focus on the interception and amelioration of snowfall events.

Snow Interception Cover: Snow interception cover is defined as coniferous stands at least 10 m in height with a canopy closure of 60-90% that provide relatively shallower snow depths than occur in openings. Shallower snow depths reduce the amount of energy expended in travelling and provide access to forage that would otherwise be buried in more open habitats. Old-growth coniferous forests, particularly those with a significant component of Douglas-fir, provide the best snow interception. These stands have a branch structure that is superior to second-growth stands at intercepting and holding snow in the canopy (Brunt 1990).

2.3.3 Seasonal Movements

Both migratory and non-migratory (resident) elk occur on Vancouver Island. Migratory elk occupy distinct seasonal ranges during the winter, summer/fall and, sometimes, spring seasons. Migratory elk benefit from shallower snow depths on low-elevation winter ranges and abundant, diverse forage on higher elevation summer/fall ranges. Seasonal ranges of migratory elk are usually within the watershed of a single river, but can be separated by as much as 40 km. Individual seasonal ranges may be up to 30 km² in size. Non-migratory or resident elk also occur in favourable low-elevation habitats on Vancouver Island. Resident elk occupy single annual home ranges of about 5-10 km² at lower elevations that sometimes overlap the winter ranges of migratory elk herds (Brunt 1990).

Table 2. Vancouver Island Roosevelt elk winter range assessment variables.

VARIABLE	VALUE	RANK	COMMENTS
% SLOPE	70+ 50-70 0-50	LOW MOD HIGH	Flat to moderate slopes preferred
ASPECT	NW-NE NE-SSE; WSW-NW Flat; SSE-WSW	LOW MOD HIGH	Generally south aspect slopes preferred; west usually better than east
ELEVATION (m)	>1000 <200; 700-1000 200-700	LOW MOD HIGH	
OVERSTORY COMPOSITION	LOW <i>HIGH</i> MOD <i>MOD</i> HIGH <i>LOW</i>	LOW MOD HIGH	Non-italicized=Relative amounts of Douglas-fir and hemlock to other areas within watershed <i>Italicized=Relative amounts of cedar (red or yellow) and balsam to other areas within watershed</i>
STAND VOLUME	LOW MOD HIGH	LOW MOD HIGH	Relative to average stand volumes within the watershed
% CANOPY CLOSURE	<50; >90 50-60; 80-90 60-80	LOW MOD HIGH	
LICHEN LOAD	LOW MOD HIGH	LOW MOD HIGH	Relative to amounts within the watershed
UNDERSTORY COMPOSITION	LOW MOD HIGH	LOW MOD HIGH	Rank relative amounts of sword fern, skunk cabbage, deer fern and salmonberry to other sites within the watershed. They are associated with rich, moist sites which produce the best forage for elk.
UNDERSTORY	LOW MOD HIGH	LOW MOD HIGH	Relative to amounts within the watershed
OTHER FACTORS:	<i>The following factors are not currently quantified during EWR assessments but they can significantly influence the overall ability of an area to satisfy EWR requirements</i>		
TOPOGRAPHIC SHADING	The amount of shading from adjacent hillsides is a critical factor influencing winter range suitability (the more shaded, the less valuable the area). Preferably shaded for less than 2 hours per day.		
HETEROGENEITY	Topographic heterogeneity ("benchiness") is preferable to a uniform slope. Overstory heterogeneity (variations in canopy closure) provides enhanced forage production and thickets for hiding in open canopy areas, and greater snow interception in areas of more closed canopy. Gullies, wetlands, and hummocky terrain also increase value of elk winter range.		
ROCK OUTCROPS	Rock outcrops provide topographic security cover (vantage points), favourable thermal conditions on sunny days, and areas that lose snow more readily during snow ablation periods.		
RELATIVE ELK USE	Pellet groups, tracks, trails, sightings, beds, rubs and shed antlers all indicate relative amounts of use. Shed antlers conclusively indicate late winter/spring use; rubs indicate late summer or early fall use. Current elk population levels in the area need to be known before the relative level of use can be determined (i.e. what is heavy use during a period of low elk population levels may only be considered moderate or low use during high elk density periods).		
LANDSCAPE FACTORS	Important landscape level considerations affecting the relative value of an area as a elk winter range include the following: a) position in the watershed (low, mod, or high snowfall area - EWR more critical in areas of higher snowfall); b) distance to other winter ranges (greater distances between winter ranges increases their individual importance); c) adjacency to high quality spring and summer range; d) the capability of adjacent areas to satisfy elk habitat requirements; and e) factors affecting local climatic conditions such as exposure to dominant winds or marine influences.		

Source: K. Brunt and R. Dolighan, Ministry of Water, Land and Air Protection, Nanaimo, B.C.

2.4 Study Area

TFL 44 is located within Vancouver Island Region 1 of the Ministry of Water, Land and Air Protection (MWLAP), within the Vancouver Region of the Ministry of Sustainable Resource Management (MSRM) and within the South Island Forest District of the Ministry of Forests (MOF).

TFL 44 is held by Weyerhaeuser Company Ltd. and is located in west central Vancouver Island in the vicinity of the communities of Port Alberni and Bamfield. It extends from Strathcona Park in the north to Walbran Creek in the south, including land from the Pacific Ocean to the Beaufort Range and Mount Arrowsmith. The major tree species on the TFL area include western hemlock, western red cedar, balsam (amabilis fir), Douglas-fir and yellow cedar.

2.5 Summary of Previous Work Completed to Define UWRs

The historic UWRs were proposed and mapped on an individual basis as areas were encountered during review of forest development plans (5 year plans). A large number of UWR field assessments were completed over the past 30 years within TFL 44. These winter range habitat assessments were largely done in direct response to Forest Development Plan (FDP) concerns (proposed cut blocks) or in response to Landscape Unit Planning. The habitat assessment reports were some of the primary information sources used to review existing and potential winter ranges during the ungulate winter range confirmation process (main reports listed in Table 4). The main people assessing winter ranges were Ron McLaughlin and Mike Stini, with lesser amounts done by Brian Clozza and Linda Veach (Sinclair). Bob Cerenzia and Kim Brunt have conducted numerous habitat assessments over the years. Mike Stini has also provided valuable anecdotal information gained by extensive personal investigation of ranges.

Under the Code, mapped winter ranges that were part of a management plan and/or strategy and were mapped as UWR are considered “grandparented” as of October, 1998. All UWRs identified in Tree Farm License 44 Management and Working Plan No. 3 (MP #3) (January 1, 1998 to December 31, 2002) and outside the Clayoquot Land Use Decision Area were grandparented on October 16, 1998. A copy of the grandparenting letter is included in Appendix B.

3.0 METHODS

The intent of the ungulate winter range confirmation process is to delineate the best possible winter ranges within the allocated 'budget', taking into account habitat suitability⁽¹⁾/capability⁽²⁾, distribution across the landscape and impacts to timber harvesting operations. Since the historic winter ranges in TFL 44 were not assessed in a strategic manner when they were established, MWLAP determined that a review of all existing historical UWRs was necessary prior to areas being proposed for confirmation. Existing winter ranges with less value were to be removed and replaced with higher value habitat elsewhere. The 'budget' was calculated based on impacts to timber supply and was determined to be 2253 hectares of the Timber Harvesting Land Base (THLB) for TFL 44 Crown Land outside of the Clayoquot Land Use Decision Area, and 106 ha of THLB within the Clayoquot Land Use Decision portion of TFL 44 (see Section 4.0 for budget details).

Weyerhaeuser, MWLAP and MOF partnered together to rationalize existing grandparented ungulate winter ranges within TFL 44 and look at further potential areas of interest (AOIs). MOF was actively involved at the outset, but eventually withdrew to function more in an advisory role, as the result of staffing/time constraints. The confirmation process began with the gathering and review of historical ungulate winter range information. MWLAP staff then completed a thorough office review and conducted winter range habitat assessments to fill information gaps. Weyerhaeuser conducted several timber supply impact analyses, provided GIS mapping services and participated in field reviews and numerous meetings with MWLAP regarding UWR placement, operational implications and impacts to timber supply.

3.1 Historic UWR Data Compilation

A project was initiated by MWLAP in the late 1990's to collect, organize and document historic data on UWRs for the Vancouver Island Region. This data compilation was completed for TFL 44 in June of 2002. The project involved searching historic records and files for UWR information, reviewing Forest Development Plans (FDPs) and Management Plans (MPs) to identify UWRs, meeting with MWLAP staff to document any areas that had been identified as UWRs, and mapping of all identified winter ranges. The products of this project include both a series of binders organized by individual winter range containing all relevant correspondence including field reviews and boundary changes as well as a spatial layer that is maintained by MSRM. This information was used in evaluating individual winter ranges proposed for confirmation.

⁽¹⁾ Suitability is defined as the ability of the habitat in its current condition to provide the life requisites of a species (RIC 1999).

⁽²⁾ Capability is defined as the ability of the habitat, under the optimal natural (seral) conditions for a species to provide its life requisites, irrespective of the current condition of the habitat (RIC 1999).

3.2 Winter Range Assessments (MWLAP Office and Field Review)

Commencing in 2001, MWLAP ecosystems and wildlife staff (Bob Cerenzia and Kim Brunt) began reviewing all grandparented UWRs and AOIs on an individual basis. The purpose of this office review was to determine if boundary modifications to winter ranges were necessary, and to identify areas that needed to be field reviewed. Historic habitat reports, air photos and forest cover maps were examined. The map review was done at a 1:20,000 map scale using Weyerhaeuser forest cover mapping as well as TRIM features. Cerenzia and Brunt reviewed the grandparented winter ranges, and deleted the ranges and portions of ranges which were not of high value. They also evaluated numerous AOIs for winter range values.

Changes were made to winter range boundaries based on historic field reviews, matching boundaries to current forest cover polygon boundaries or TRIM features (such as streams, elevation/contour lines, terrain breaks, or anthropogenic features). Air photos were often used to confirm vegetative edges (i.e. old growth/second growth and vegetated/non-vegetated), canopy closure and stand characteristics. Boundaries were fine-tuned by examining standard biological criteria, including % slope, aspect, elevation, overstory composition from forest cover data, stand volume, % canopy, lichen loads, understory composition, presence of rock outcrops and topographical shading. Some of these variables were obtained from past field reports, and some from air photos, forest cover maps or past helicopter reconnaissance of areas. Areas with inadequate historic information were highlighted for field review.

Field reviews were carried out jointly by MWLAP staff, MWLAP consultants, Weyerhaeuser staff and Weyerhaeuser consultants. Helicopter reconnaissance of areas was also completed. UWR boundaries were either confirmed by the field/helicopter review or modified to capture the critical ungulate winter range habitat.

3.3 Mapping

UWR confirmation mapping requirements, including digitizing of winter range additions, deletions and modifications to boundaries, were completed by Weyerhaeuser GIS staff and made available to MWLAP. Weyerhaeuser also produced maps of the individual confirmed UWRs on orthophotos (see Section 9.0).

3.4 Negotiations Between Weyerhaeuser and MWLAP

Weyerhaeuser Company Ltd. and MWLAP representatives met on numerous occasions to review the ungulate winter ranges and determine which ones would go forward for confirmation. The goal was to obtain the best quality, most appropriately dispersed winter ranges, using the most constrained areas and causing the least interruption to harvest opportunity. Every effort has been made to ensure that the biological principles behind establishing winter ranges, as outlined on page 1 of the 2000 UWR Memorandum on Understanding, have been adhered to.

During the early stages of negotiations MWLAP's proposed UWR package exceeded the allocated THLB budget. Several additional meetings took place to finalize boundaries and reduce the area proposed for confirmation to better comply with the budget cap. This process resulted in 58 UWRs being selected for confirmation within TFL 44. The final configuration of these 58 UWRs was agreed upon by representatives of MWLAP and Weyerhaeuser.

3.5 Consultation

The stakeholder consultation process is described and stakeholder comments are included in Appendix C. First Nations interests were addressed by formal consultation (Appendix D).

4.0 UWR Budget and Impact Analysis

4.1 UWR Budget and Impact Analysis

The UWR budget calculations and impact analysis were completed by Pacific Spatial Systems Ltd. (Ross Pettit) on contract to Weyerhaeuser Company Ltd.

For TFL 44, the policy direction in determining the amount of UWR that is agreed to go forward for confirmation is that the UWRs, once confirmed, should have no greater impact on timber supply today than could be attributable to UWRs in Timber Supply Review (TSR) 2. TSR 2 therefore sets the maximum allowable impact on timber supply, providing these impacts are biologically justifiable. TSR 2 was completed for TFL 44 in 1998 using MP #3 as the base. Since the impact analysis that was performed in MP #3 was difficult to re-create, Weyerhaeuser, MOF and MWLAP agreed to use MP #4 (TSR 3) data - the most current timber supply data set - as the base for impact calculations. The same assumptions were used to define the timber harvesting land base as in MP #3.

The allowable impact was measured as the number of hectares of timber harvesting land base (THLB) removed from the land base to manage solely for ungulates incremental to that removed for other constraints including, but not limited to, non-forested land, non-productive land and Environmentally Sensitive Areas. For TFL 44 this impact was determined to be 2253 ha of THLB, and 106 ha of THLB within the Clayoquot Land Use Decision portion of TFL 44 (total THLB impact of 2359 ha).

In the confirmation process MWLAP proposed areas to utilise this 2359 ha or what was loosely termed the 'budget'. A similar process as that used to determine the budget was used to see how much was utilised. The data set from MP #4 was used to determine THLB impacts of the UWRs proposed for confirmation. The final confirmed UWRs used 2386 ha, 27 ha over the budget allowance of 2359 ha.

Table 3, provided by Weyerhaeuser, presents a comparison of the timber supply impacts of the UWR in MP #4 to the impacts of the UWR confirmed TFL 44 (excluding the Clayoquot Land Use Decision portion of TFL 44). THLB and volume impacts are broken down by Alberni East and Alberni West and broken down further by conventional versus non-conventional logging practices.

Table 3. Comparison of timber harvesting land base and volume impacts of UWRs from MP #4 and UWRs confirmed in TFL 44 – excluding the Clayoquot Land Use Decision portion (all figures are net land base and volumes from MP #4 data).

Crown and Timber License Land							
THLB (Ha)	Alberni West			Alberni East			TOTAL
	Conventional	Non-conventional	Total	Conventional	Non-conventional	Total	
Old UWR ⁽³⁾	708	531	1239	880	134	1014	2253
UWR	710	630	1340	743	198	941	2280
Difference	(2)	(99)	(101)	137	(64)	73	(27) ⁽⁴⁾

Crown and Timber License Land							
Volume (m ³)	Alberni West			Alberni East			TOTAL
	Conventional	Non-conventional	Total	Conventional	Non-conventional	Total	
Old UWR	400,763	330,579	731,342	699,888	107,857	807,745	1,539,087
UWR	463,429	460,190	923,619	651,883	165,515	817,398	1,741,017
Difference	-62,666	-129,611	-192,277	48,005	-57,658	-9,653	-201,930

⁽³⁾ Old UWR refers to grandparented UWR from MP #4 (TSR 3).

⁽⁴⁾ Value adjusted to reduce rounding errors. Original value was 28 ha.

Notes:

- * Spatially defined net-downs were applied in deriving the "THLB". Area reductions were not made for factor net-downs (variable retention, wildlife tree patches, small unmapped streams and CMTs) as they apply equally to both sets of UWRs.
- * Volumes are estimated water scale (a 5% reduction from AAC utilization has been made for residue).
- * **The volume difference of 201,930 m³ between the old and the new UWRs is overstated operationally. The operational impact is estimated at approximately 111,000 m³.**
- * Harvesting occurred in 149 ha of the old (grandparented) UWRs as changes occurred during the last five years. The intent was to replace these harvested areas with other areas of mature timber. Considering spatial net-downs the 149 ha reduces to 105 ha. This is equivalent to approximately 79,000 m³ of the volume difference (assuming an average volume of 750 m³/ha).
- * Factor netdowns (described in first point) reduce the operable volume by another 10%. Hence 90% of (201,930 - 79,000) = 111,000 m³.

5.0 RESULTS AND DISCUSSION

5.1 UWRs for Confirmation

There are a total of 58 ungulate winter ranges including 54 deer winter ranges and 4 elk winter ranges confirmed within TFL 44. Specific information for each winter range including reference data, netdowns, gross areas, THLB and volume impacts, biological rationales, suitability / capability information and value of the winter ranges within a landscape context is provided in Table 4. A 1:110 000 overview map is also included (Appendix E). Ungulate winter range boundaries are presented on orthophotos in Appendix F.

The gross area of the 58 UWRs confirmed at 100% netdown is approximately 4278 hectares. Of this, approximately 4089 ha is productive forest, which is approximately 2.1% of the total productive forest within TFL 44 (189,600 ha, excluding Clayoquot).

5.1.1 *Habitat Suitability / Capability*

All of the confirmed UWRs within TFL 44 contain old growth with moderate to extremely high suitability⁽¹⁾/ capability⁽²⁾. Since all of the UWRs are in old growth (the optimal seral condition for critical winter range), the present suitability of these sites will be equal to their inherent capability. Suitability / capability values were assigned to individual UWRs based on their ability to meet specific critical winter range requirements as outlined previously in Tables 1 and 2. These variables include % slope, aspect, elevation, overstory and understory composition and abundance, stand volume, % canopy closure, lichen loading, presence of rock outcrops and topographic shading.

5.1.2 *Ungulate Winter Range Value - Watershed / Landscape Context*

The winter range value within a watershed / landscape context refers to the relative importance of the UWR within the drainage, and takes into account geographical positioning within the watershed (low, moderate or high snowfall area – UWR more critical in areas of high snowfall), distance to other UWRs (greater distances between winter ranges increases their individual importance) and the number of UWRs within the watershed. All of the confirmed UWRs are thought to be necessary for the winter survival of local deer populations in critical winters and therefore have high to extremely high value within a landscape / watershed context.

5.2 THLB Impact Summary

The 55 confirmed UWRs within TFL 44 (outside of the Clayoquot Land Use Decision Area) have a total THLB impact of 2280 ha. The net difference between the area recommended for confirmation and the area accounted for in MP #4 is 27 THLB ha. This 27 ha variance was agreed to by Weyerhaeuser and MLWAP. An additional three winter

⁽¹⁾ Suitability is defined as the ability of the habitat in its current condition to provide the life requisites of a species (RIC 1999).

⁽²⁾ Capability is defined as the ability of the habitat, under the optimal natural (seral) conditions for a species to provide its life requisites, irrespective of the current condition of the habitat (RIC 1999).

Table 4. TFL 44 Ungulate Winter Ranges

Insert Table 4 from Excel file, TFL 44 Final Crown Land UWR Summary Table 4.xls.

ranges located within the Clayoquot Land Use Decision Area of TFL 44 have a total THLB impact of 106 ha. In total, the 58 confirmed UWRs have a THLB impact of 2386 ha.

5.3 Boundary Description

Ungulate winter ranges were mapped on the basis of: (i) a combination of topographic and vegetative features defining high quality winter ranges; and/or (ii) documented historic and current use. Mapping was based on the best available digital information.

UWR boundaries are indicated on orthophotos for reference (Section 9.0). Ungulate winter ranges and other features are mapped within the geographic limit of resolution for the map scale. Winter range boundaries are delineated to coincide on the ground with logical terrain, vegetative and anthropogenic features i.e. streams, old-growth/second-growth edge, vegetated/unvegetated edge, terrain breaks. In the event that the mapped UWR boundaries do not coincide with the physical features on the ground the intent is to manage the UWR to the logical physical boundary. This physical boundary will take precedence when determining the operational boundary of the UWR.

6.0 UWR GENERAL WILDLIFE MEASURES

The following General Wildlife Measures (GWMs) are for the 58 ungulate winter ranges confirmed within TFL 44 (UWR Plan U-1-013). Forest management activities should ensure that adjacent ungulate winter ranges are not adversely affected by foreseeable impacts including windthrow and fire.

General Wildlife Measures:

1. Road construction is not to occur within the designated ungulate winter ranges unless there is no other practicable option, the quality of the winter ranges will not be significantly affected and an exemption is approved by the MWLAP Delegated Decision Maker.
2. Harvesting is not to occur within the designated ungulate winter ranges unless an exemption is approved by the MWLAP Delegated Decision Maker. An exemption would only normally be considered for the purposes of enhancing the quality of the winter range.
3. Salvage harvesting is not to occur within the designated ungulate winter ranges unless an exemption is approved by the MWLAP Delegated Decision Maker.
4. Road maintenance, road deactivation, felling of danger trees or brushing and clearing on existing roads within the UWR will be conducted in a manner that does not result in a material adverse impact on the ungulate winter range habitat within the designated ungulate winter range.

5. Where required to address worker safety, felling of danger trees, felling for guy line anchors, felling of tail hold anchor trees within an UWR along adjacent cutblock boundaries will be conducted in a manner that does not result in a material adverse impact on the ungulate winter range habitat within the designated ungulate winter range.
6. Trees that must be felled within an UWR will be left onsite to provide coarse woody debris, unless the felled tree lies outside the UWR.

7.0 LITERATURE CITED

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8.0 DEFINITIONS

Capability Capability is defined as the ability of the habitat, under the optimal natural (seral) conditions for a species to provide its life requisites, irrespective of the current condition of the habitat (RIC 1999).

Suitability Suitability is defined as the ability of the habitat in its current condition to provide the life requisites of a species (RIC 1999).

MWLAP Region 1 Winter Range Definitions:

Grandparented Identified as necessary for winter survival of an ungulate species; previously mapped and operationally agreed to; incorporated into the last TSR.

AOI Areas that are not legally recognized by MOF or the licensee but that MWLAP is interested in for winter range designation.
In TFL 44, Weyerhaeuser and MOF recognized the AOIs at the FDP and operational level.

Netdown The percent withdrawal from the timber harvesting land base assigned to a forest cover polygon to manage for other resource values. It is assumed that confirmed UWRs will be assigned a 100% netdown factor for future timber supply analyses.

9.0 INDIVIDUAL UWR MAPS

This section presents a list of maps for the 58 confirmed UWRs within the TFL 44. UWR boundaries are shown on 1:5000, 1:10 000 or 1:20 000 orthophotos (orthophoto date is July, 2001). Maps are ordered numerically by UWR Identifier (based on mapsheet numbers) (See Table 5 and Appendix F).

Table 5. Maps of TFL 44 UWRs.

UWR Identifier	UWR Unit No.	UWR Identifier	UWR Unit No.
92C.078-01	1	92F.016-04	31
92C.078-02	2	92F.016-05	32
92C.078-03	3	92F.016-06	33
92C.078-04	4	92F.016-08	34
92C.086-03	5	92F.016-09	35
92C.086-06	6	92F.024-01	56
92C.087-01	7	92F.024-02	57
92C.087-02	8	92F.024-03	58
92C.088-04	9	92F.024-04	36
92C.088-05	10	92F.024-05	37
92C.096-01	11	92F.025-01	38
92C.097-01	12	92F.025-05	39
92C.097-02	13	92F.025-06	40
92C.097-04	14	92F.025-07a	41
92C.097-06	15	92F.025-07b	42
92C.097-07	16	92F.025-08	43
92C.097-08	17	92F.025-09	44
92C.097-10	18	92F.033-05	45
92C.098-01	19	92F.034-04	46
92C.005-02	20	92F.034-05	47
92F.007-03	21	92F.034-07	48
92F.007-05	22	92F.034-08	49
92F.007-10	23	92F.034-09	50
92F.007-11	24	92F.034-12	51
92F.007-12	25	92F.035-01	52
92F.015-02	26	92F.035-02	53
92F.015-04	27	92F.035-08	54
92F.016-01	28	92F.045-03	55
92F.016-02	29		
92F.016-03	30		

***Ungulate winter ranges in bold are located in TFL 44, Clayoquot Sound.**

APPENDIX A

Legislation

**MEMORANDUM OF UNDERSTANDING
ON
ESTABLISHMENT OF UNGULATE WINTER RANGES
AND RELATED OBJECTIVES**

A. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to expedite and facilitate the orderly confirmation and establishment of ungulate winter ranges (UWR) and related objectives across the province, in order to support the Forest and Range Practices Act (FRPA). This MOU clarifies general ministry roles and responsibilities and outlines procedures and considerations to facilitate timely delivery of this initiative. It replaces previous agreements concerning coordination, administrative processes, and consultation requirements. The intent is to facilitate, through due process, the cooperative development of objectives to support the FRPA while at the same time maintaining the foundation of stakeholder support, where UWR and objectives have been established through Cabinet-approved strategic land use planning processes.

A Procedures Manual for Establishing Ungulate Winter Ranges and Objectives, MWLAP 2003, will be distributed shortly by MWLAP and will provide guidelines on procedures that will be followed when establishing UWR in British Columbia. This manual will also describe the analysis and consultation requirements for UWR proposals, and guidance for the development of legal objectives.

B. GENERAL MINISTRY ROLES AND RESPONSIBILITIES WITHIN THE CONTEXT OF SERVICE PLANS

The Ministry of Water, Land and Air Protection (MWLAP), the Ministry of Forests (MOF), and the Ministry of Sustainable Resource Management (MSRM) all have agency responsibilities with respect to establishing UWR and objectives. Approved ministry service plans provide guidance & direction to the development and implementation of this MOU.

Ministry of Water, Land and Air Protection (MWLAP)

Currently, objectives for UWR are established under Operational Site Planning Regulation (OSPR) s.69. Pursuant to the OSPR (December 2002) the MWLAP Deputy Minister may establish UWR and objectives, through written orders.

Under the Forest and Range Practices Act (FRPA), objectives for UWR will be required to provide guidance to forest stewardship plans (FSPs), range use plans (RUPs), range stewardship plans (RSPs), and other operational plans; and to provide the foundation for monitoring and adaptive management. Under the FRPA, the authority to establish UWR and objectives within current limits i.e. parameters reflected in TSR1 and 2, and land use plan direction will continue to be granted through regulation to the MWLAP Deputy Minister.

Ministry of Forests (MOF)

Under the FRPA, MOF will hold the authority for approval of FSPs, RUPs, RSPs, and other operational plans. These operational plans will be required to be consistent with objectives set by government, including those for UWR. An FSP, RSP, or other operational plan will be required before timber harvesting, road construction, or livestock grazing can occur on Crown land, unless otherwise prescribed or exempted in legislation.

MOF responsibilities also include assessing timber supply, forage supply for livestock, and operational implications (e.g., costs and access to timber and forage for livestock) of UWR proposals.

Ministry of Sustainable Resource Management (MSRM)

MSRM is responsible for balanced, integrated land use decisions that enhance economic development through timely and certain access to land and resources. Currently MSRM has the sole statutory authority under the Forest Practices Code to establish resource management zone objectives and landscape unit objectives. Under the proposed new forest management regime, the Minister of SRM will have authority under the Land Act to establish land use objectives, including objectives for UWR where appropriate, to support the FRPA. Whereas

other agencies' policies and activities must be constrained within provincial policy resource impact limits, MSRM, through stakeholder processes and economic and ecological analyses, will establish the social balance for land and resource use. In this respect, MSRM may establish or amend objectives, including objectives for wildlife habitat, that are equivalent to, above, or below current policy limits for timber supply impacts.

C. TYPES OF UWR AND OBJECTIVES

Three types of UWR and objectives are recognized and will be established according to the accompanying Procedures Manual for Establishing Ungulate Winter Ranges and Objectives, and according to the process and dispute resolution provisions below.

Type 1: UWR and objectives that have been identified and incorporated in TSR1 and/or TSR2 and were:
(a) identified in a wildlife management plan or strategy approved before October 15, 1998, or
(b) mapped before April, 1998 but not included in a wildlife management plan or strategy, or
(c) included in TSR1 or TSR2 before April, 1998 but not mapped.

In accordance with the May 11, 2000 Memorandum of Understanding on Confirmation and Establishment of Ungulate Winter Ranges Previously Included in Timber Supply Reviews, MWLAP Environmental Stewardship Regional Managers will seek to establish Type 1 UWR and objectives up to the maximum levels of timber supply constraints (land base deductions or forest cover requirements) identified in TSR1, and in TSR2 where UWR allowances have been identified above and beyond the levels in TSR1. Where boundaries and objectives have not previously been refined and made spatially explicit, that will now be done. If further analysis to confirm or vary Type 1 UWR indicates that TSR1 and/or TSR2 allowances are exceeded, then establishment of this UWR will proceed as Type 3. Similarly, UWRs that were considered part of the inoperable or non-contributing land base at the time of TSR1 or TSR2, but now have timber supply impacts or significant operational impacts due to changes in operability, will be addressed as Type 3.

Type 2: UWR and objectives identified in Cabinet-approved strategic land use plans (e.g. LRMPs and regional plans) where:
(a) UWR are specified by spatially explicit units that have been incorporated into TSR1 and/or TSR2, or where:
(b) UWR allowances have not been incorporated into TSR1 and/or TSR2 due to lack of specificity and spatially but are expected to fall within approved land use plan impact levels.

Environmental Stewardship Regional Managers will seek to establish UWR and objectives consistent with UWR and objectives and map boundaries from existing, Cabinet-approved strategic land use plans (SLUPs) or Higher Level Plans. Where necessary, objectives from SLUPs will be refined and made spatially explicit, while continuing to be consistent with the SLUP. New analyses of timber supply implications may be required to demonstrate that spatially explicit objectives remain consistent with the intended impacts of the SLUP. If further analysis to confirm or vary Type 2 UWR indicates that TSR1 and/or TSR2 allowances are exceeded, then establishment of this UWR will proceed as Type 3.

Type 3: New UWR and objectives that are identified by MWLAP, licensees or other parties, as necessary for the winter survival of ungulates.

Where there is a biological need beyond that accommodated by TSR1 and/or TSR2 (Type 1, above), or beyond UWR allowances in Cabinet-approved SLUPs (Type 2, above) new UWR may be proposed by Environmental Stewardship Regional Managers. Proposals will require a detailed rationale describing the biological need, the proposed amount, distribution, and locations of the UWR; and why allowances in TSR1 and/or TSR2 or Cabinet-approved SLUPs are insufficient to adequately address requirements for wintering ungulates. Proposals must incorporate information from MOF and forest licensees on timber and livestock forage supply and operational implications, and where land use objectives have already been approved, information on consistency with those objectives. Wherever possible, Type 3 proposals for all areas and ungulate species within a district will be presented together in order to facilitate timber supply analysis.

If further analysis of Type 1 or Type 2 UWR indicates that TSR1 and/or TSR2 allowances are exceeded, then establishment of these UWR will proceed as Type 3. Similarly, UWRs that were considered part of the inoperable

or non-contributing land base at the time of TSR1, but that now have timber supply impacts or significant operational impacts due to changes in operability, will be addressed as Type 3.

Establishment of UWR: Types of UWR and links to legislation, policy, and ministry roles and responsibilities			
Type of UWR	Origin of UWR	Provincial Policy	Ministry Roles and Responsibilities (abbreviated – see MOU for details)
1(a)	UWR identified by a wildlife management plan or strategy approved before October 15, 1998 (OPR (c))	UWR and objectives have been identified and incorporated into TSR1 and/or TSR2 allowances. Where necessary objectives will be refined and made spatially explicit.	1. MWLAP prepares UWR and objectives 2. MOF provides operational and timber/forage supply implications 3. MWLAP presents UWR information package to IAMC as information for consideration 4. MWLAP establishes UWR and objectives consistent with TSR1 and/or TSR2 allowances for UWR
1(b)	UWR mapped before April, 1998 but not included in a wildlife management plan or strategy (OPR (b))		
1(c)	UWR included in TSR1 or TSR2 before April, 1998 but not mapped (OPR (b))		
2(a)	UWR and objectives identified in Cabinet-approved strategic land use plans (e.g. LRMPs and regional plans) that have spatially explicit units and are incorporated into TSR1 and/or TSR2 allowances.	UWR and objectives have been identified and incorporated into TSR1 and/or TSR2 allowances.	1. MWLAP prepares UWR and objectives consistent with SLUP direction. 2. MOF confirms consistency with SLUP TSR provisions 3. MSRM confirms consistency with SLUP, integration with other objectives 4. MWLAP presents UWR information package to IAMC as information for consideration 5. MWLAP or MSRM establish UWR and objectives (flexibility)
2(b)	UWR and objectives identified in Cabinet-approved strategic land use plans (e.g. LRMPs and regional plans where timber supply impacts have not been incorporated into TSR1 and/or TSR2 due to lack of specificity and spatiality.	UWR and objectives may not have been incorporated into TSR1 and/or TSR2 due to lack of specificity and spatiality. TSR budget will be confirmed and/or negotiated.	1. MWLAP prepares UWR and objectives consistent with SLUP direction. 2. MOF provides operational and timber/forage supply implications 3. MSRM confirms consistency with SLUP, integration with other objectives, and acceptable level of impacts 4. MWLAP presents UWR information package to IAMC as information for consideration 5. MWLAP or MSRM establish UWR and objectives (flexibility)
3	New UWR and objectives that are identified by MWLAP, licensees or other parties, as necessary for the winter survival of ungulates.	Biological need for new UWR may be beyond that accommodated by previous TSRs, so TSR budget will need to be decided.	1. MWLAP prepares proposal with detailed rationale describing biological need, why TSR1 and/or TSR2 allowances are insufficient; etc. 2. MOF provides operational and timber/forage supply implications 3. MWLAP presents UWR information package to IAMC as information for consideration 4. MSRM determines acceptable levels of impacts or determines whether senior government decision is needed 5. MWLAP or MSRM establish UWR and objectives (flexibility)

D. SCOPE AND TIMING

- The ministries agree to work together to establish UWR and objectives within the limits of available resources. Where lack of resources (staff or funds) present barriers to UWR confirmation and establishment, ministries will cooperate to document the shortfall and propose solutions that will allow establishment of UWR and objectives to proceed. This may include the initiation of timber and/or forage supply analysis from any of the three agencies and funding from outside the MOF budget allocation for timber and forage supply analysis.
- Where UWR proposals are easily shown to be consistent with UWR allowances in TSR1 or 2, or with a strategic land use plan and accompanying policy, the three ministries may agree to forego any further analysis of timber supply impacts.

- MSRM commits to developing a work plan for each region to address the establishment of a fully integrated suite of legal objectives to support the FRPA. Eventually, all UWR and objectives will be part of an integrated suite of land use objectives which balance economic, social and environmental values, consistent with approved strategic land use plans.
- MWLAP commits to developing and maintaining a Status Report on all UWR in the Province. This Status Report will assign Type 1, 2, or 3 to each UWR proposal on a preliminary basis which may need to be confirmed by further analysis.
- Type 1 UWR: Currently there is no change to the October 15, 2003 deadline for confirming UWR and objectives approved before October 15, 1998 (see Type 1(a) above). It is expected that this deadline will no longer exist in the FRPA regulations after June 2003. However, orderly establishment of UWR and objectives is expected to continue through the two-year transition period of the FRPA. Along with the work to expedite the establishment of all UWR and objectives, there will be a focus on confirming the highest priority Type 1 UWR and objectives.
- Expiry of Type 1(a) UWR which have not been confirmed by the October 15, 2003 deadline means that they will have no legal effect, however, this does not in any way affect the ability of the statutory decision maker to establish new UWR and objectives in the subject area after the October 15, 2003 expiry date.
- Type 2 UWR: UWR and objectives will be consistent with existing Cabinet-approved strategic land use plans and accompanying policy (e.g., the Cariboo-Chilcotin and Kootenay Boundary Higher Level Plan implementation policies). Where objectives are proposed by MWLAP that differ from the objectives in approved land use plans there shall be a commitment to honour the implementation and monitoring Terms of Reference of the land use plans with respect to amending approved strategic land use plan objectives. In all instances there will be consultation with the respective land use plan Implementation and Monitoring Committee (IMC) prior to the statutory decision maker considering the UWR and objectives for approval.

E. THE ROLE OF THE IAMC AND AGENCIES IN PROCESS, AND DISPUTE RESOLUTION

- A corporate and cooperative approach is desirable for establishing UWR and objectives, and where necessary this will be coordinated across agencies at the Inter-Agency Management Committee (IAMC) level - as directed/influenced by the IAMC Terms of Reference. The IAMC may establish a subcommittee of appropriate agencies, including the MWLAP Environmental Stewardship Regional Manager, to address all considerations and issues related to UWR. All proposals for UWR and objectives will be presented to the IAMC or subcommittee for information and consideration prior to these proposals being presented to the statutory decision maker for approval. Where agreement is not achievable between agencies through discussion at the IAMC or subcommittee, the dispute resolution process (below) will be followed.
- The role of the IAMC initially will be to review proposals for UWR and objectives for consistency with existing agreements (including approved strategic land use plans) and identify any additional options for reconciliation within existing legislative and policy direction. In addition, the IAMC shall highlight the known environmental, social and economic risks associated with the proposals, as identified by the agencies.
- For Type 1 UWR and objectives, associated timber impact allowances will continue to be recognized. In this respect, Type 1 UWR and objectives will be presented to the IAMC as information, but will not be renegotiated unless further analysis to confirm or vary Type 1 UWR indicates that TSR1 and/or TSR2 allowances are exceeded.
- For Types 2 and 3 UWR and objectives, the IAMC will coordinate the review of these UWR for consistency with existing strategic land use plans and to ensure that timber and forage supply and operational implications of these UWR are documented for consideration as part of the integrated planning processes coordinated by MSRM. Prior to proposals for Type 2 and 3 UWR and objectives being submitted to the statutory decision

- maker for approval, the Environmental Stewardship Regional Manager will document comments, information and issues raised by the IAMC.
- The process for resolving disputes concerning the development and establishment of UWR and objectives will depend on the type of UWR and objectives.
 - For UWR and objectives that fall within approved policy limits, and where there is no dispute regarding level of impact, the Environmental Stewardship Regional Manager (ESRM) will collaborate with the IAMC in describing points of departure and options for solution. The ESRM will provide this information to the MWLAP Deputy Minister who will resolve the dispute.
 - For UWR and objectives that fall outside approved policy limits, and where there is no dispute regarding level of impact, the Environmental Stewardship Regional Manager (ESRM) will collaborate with the IAMC in describing points of departure and options for solution. The ESRM will provide this information to the MSRM Regional Director who will resolve the dispute.
 - For UWR and objectives where there is a dispute regarding the level of impacts, the Environmental Stewardship Regional Manager (ESRM) will collaborate with the IAMC in describing points of departure and options for solution. The ESRM will provide this information to the Joint Steering Committee and, if necessary, the Deputies' Committee on Natural Resources and the Economy, who will resolve the dispute.

F. DEVELOPMENT OF LEGAL OBJECTIVES

- The Environmental Stewardship Regional Managers will be responsible for writing legal objectives associated with all three types of UWR. The level of detail of objectives is expected to be consistent with current guidance for writing resource management objectives, and any further guidance being developed by MSRM in consultation with the Forest Stewardship Working Group (FSWG). Generally, resource objectives are statements of desired future condition that apply to specific geographic areas and are measurable. (Note: the FSWG is an advisory group of forest industry and government, set up at the request of the Premier).
- Environmental Stewardship Regional Managers will be accountable for ensuring that existing policy is applied in preparation of UWR proposals. They will be responsible for setting the biological rationale and management goals and objectives for UWR within their regions, consistent with current land use decisions and direction. They will document the proposed amount, distribution, and locations of the proposed UWR and will ensure that timber and forage supply and operational implications of UWR establishment are documented for consideration by the appropriate statutory decision maker. Information demonstrating consistency with policy must accompany each proposal.
- Environmental Stewardship Regional Managers will also be responsible for leading the formal review and comment for all proposed UWR and objectives with agencies (MOF, MSRM, MEM), First Nations, and affected parties, and for ensuring that concerns and issues are documented.
- It is expected that agencies will be flexible in legally establishing UWR and objectives. Type 1 UWR and objectives will generally be established by MWLAP. The intent for Type 2 and 3 UWR and objectives is to ensure balanced objectives for land and resource management, within the context of existing SLUPs and HLPs, or within a sustainable resource planning process coordinated by MSRM, wherever possible. The IAMC will discuss whether it is most appropriate for MWLAP or MSRM to legally establish Type 2 and 3 UWR and objectives.
- Establishment of UWR and objectives will be coordinated and integrated with the establishment of other legal objectives (e.g., old growth management areas, wildlife habitat areas) wherever possible. However, based on a risk assessment, MWLAP may determine that establishment of UWR and objectives is required prior to the establishment of other land use objectives in some areas. In other areas, establishment of UWR and objectives may be deferred. Options for establishment or deferral of objectives will be discussed between agencies and affected parties, and will be based on the level of risk.

- Where UWR and objectives precede other land use objectives it is recognized that UWR and objectives may require amending at a later date. Amendments to UWR and objectives will be carried out within the same formal review and comment process used for establishing UWR, and will include assessment of biological implications by MWLAP and assessment of timber and forage supply implications by MOF. Minor amendments and/or variances to UWR and objectives will be carried out by the statutory decision maker or delegate responsible for initial establishment of the UWR and objectives. Major amendments to UWR and objectives that fall outside approved policy limits will proceed as Type 3 UWR and objectives.

Jon O’Riordan, Deputy Minister, MSRM

Date

Gord Macatee, Deputy Minister, WLAP

Date

Doug Konkin, Deputy Minister, MOF

Date

**Ministry of Forests
Ministry of Environment, Lands and Parks**

MEMORANDUM

Date: May 11, 2000

To: Regional and District staff
Ministry of Forests
Ministry of Environment, Lands and Parks

Re: Confirmation and establishment of Ungulate Winter Ranges previously included in Timber Supply Reviews.

The Operational Planning Regulation of the Forest Practices Code creates a specific definition and regulations to provide the legal basis for management of ungulate winter ranges. In an August 6, 1998 letter to staff a two-step process was approved for the establishment of “existing” ungulate winter ranges under the Regulation; i.e., those plans and strategies that had already been approved prior to the date the Operational Planning Regulation was deposited. Grandparenting of many existing mapped winter ranges that had wildlife management plans and/or strategies, and were managed as ungulate winter range, was completed on October 15, 1998. The remaining candidate winter ranges include:

- those that were previously mapped but not grandparented by October 15, 1998, and
- those that were accounted for in TSR1 but were not mapped.

Attached are three documents that provide the agreed-to framework for establishment and confirmation, under the Forest Practices Code, of ungulate winter ranges previously included in Timber Supply Reviews:

- 1) Memorandum of Understanding on Confirmation and Establishment of Ungulate Winter Ranges previously included in Timber Supply Review, May 5, 2000;
- 2) Administrative Process for Mapping and/or Confirming under the Forest Practices Code those Ungulate Winter Ranges factored in TSR1, May 5, 2000;
- 3) Ungulate Winter Range Criteria, May 5, 2000.

All Forest Practices Code candidate and grandparented ungulate winter ranges are to be finalised as quickly as possible and on a priority basis. Those meeting the conditions of the attached framework are to be forwarded to the Chief Forester and the Deputy Minister of Environment, Lands and Parks for consideration prior to the October 15, 2003 confirmation date established by the Operational Planning Regulation.

Greg Koyl
Assistant Deputy Minister
Operations Division
Ministry of Forests

Jon O’Riordan
Assistant Deputy Minister
Regional Operations
Ministry of Environment, Lands and Parks

Date: _____

Date: _____

MEMORANDUM OF UNDERSTANDING
ON
CONFIRMATION AND ESTABLISHMENT OF UNGULATE WINTER RANGES
PREVIOUSLY INCLUDED IN TIMBER SUPPLY REVIEWS

May 11, 2000

BACKGROUND

Recent amendments to the Operational Planning Regulation (OPR) of the Forest Practices Code have created a specific definition and regulations to provide the legal basis for management of ungulate winter ranges (UWR) on Provincial Forest land. A two-step process was approved (see letter of August 6, 1998 - attached) for the establishment of UWR under the Regulation. Grandparenting of existing mapped winter ranges that had wildlife management plans and/or strategies, and were managed as UWR, was completed on October 15, 1998. The remaining candidate winter ranges include:

- 1) those that were previously mapped but not grandparented by October 15, 1998, and
- 2) those that were accounted for in TSR 1 but were not mapped.

All Forest Practices Code candidate and grandparented ungulate winter ranges are to be finalised as quickly as possible, and those meeting the conditions of this MOU confirmed by October 15, 2003. The intent overall is to: (1) identify the areas that are necessary for the winter survival of ungulates; (2) ensure that these areas are distributed in the most effective way for maintaining ungulates across their natural range; and (3) ensure that timber supply impacts do not exceed those included in Timber Supply Review 1 (TSR1).

The biological principles behind establishment of UWR are that areas so designated:

- should be well distributed across the range of the species, so local populations are not extirpated,
- should provide areas of habitat that will sustain sufficient numbers of the ungulate species through severe winter conditions that local populations will be able to quickly recover, and
- should be located on sites that show evidence of high winter range value for the locality, as determined by evidence of past use or by topographic and vegetative characteristics defined for the locality by experienced biologists.

WITH THE ABOVE BACKGROUND, THE MINISTRY OF FORESTS (MOF) AND THE MINISTRY OF ENVIRONMENT, LANDS AND PARKS (MELP) HAVE AGREED TO THE FOLLOWING, WHICH APPLY TO ALL SUBSEQUENT SECTIONS OF THIS MEMORANDUM OF UNDERSTANDING (MOU):

A. Guiding Principles

1. Winter ranges are a forest resource requiring proper management.
2. Winter range designation and management is needed to provide certainty to ministries and stakeholders.
3. Protocols for winter range designation and management must be clear and specific in order for agency and industry staff to work co-operatively and reduce disputes at all levels.
4. Criteria for determining areas that are necessary for the winter survival of an ungulate species should be based on the biological needs of the species.
5. Consistent with Guiding Principle #4, when determining the location of candidate winter ranges and the ungulate management objectives to be applied within them, due consideration shall be given to economic as well as biological factors. The objective is ensure that cost increases are avoided wherever possible as per the intent of current memoranda of understanding among MOF, MELP, and forest industry associations. Where cost increases are unavoidable, they are to be minimised through local consultation between the agencies and licensees. Because the grandparented UWRs and some candidate UWRs covered by this MOU have been recognized in previous plans, we expect net cost increases will be negligible for most licensees.
6. Candidate winter ranges (grandparented or non-grandparented) should be identified as quickly as possible to ensure that habitat necessary for the winter survival of ungulate species can be identified, approved and protected.
7. Winter ranges may be proposed up to the maximum levels identified in TSR1 for Timber Supply Areas (or as noted in the most recent Management & Working Plans for Tree Farm Licences), providing they meet the definition in the OPR. Since the levels for UWR utilized for TSR1 reflected historical management decisions and were not set using the current UWR definition nor current principles, some grandparented and proposed UWR may not meet current criteria. TSR1 levels for UWR thus should not be regarded as a guaranteed amount of UWR “capital” to be used in this process. If lesser levels of UWR are satisfactory to achieve the conditions of this MOU and satisfy the intent of the OPR, an amount of UWR less than the TSR1 levels is appropriate.

8. The agencies recognize that there are certain situations where TSR1 allowances did not provide for ungulate winter ranges in the locations or to the extent needed to responsibly conserve ungulate values under the Forest Practices Code. Section 69(1) of the Operational Planning Regulation provides the opportunity for the Chief Forester and Deputy Minister of Environment, Lands, and Parks to establish “new”⁴ UWRs where they are needed. The principles and process to be used in establishing these new UWRs will be dealt with separately from this MOU.
9. The process of UWR establishment will consider the availability of habitat suitable as winter range for ungulates that is provided by protected areas and other planning initiatives such as higher level plans, Landscape Unit Planning, and Land and Resource Management Plans.

B. Refinement and Confirmation of Grandparented Winter Ranges

1. Some of the winter ranges that were previously mapped by MELP and MOF at the district, regional, or provincial levels before the winter range regulation was deposited in April 1998, have been grandparented into the regulation as of October 15, 1998.
2. The five-year period from October 15, 1998, to October 15, 2003, has been provided to allow MOF and MELP with input from licensees and the Ministry of Energy and Mines (MEM) to refine, if necessary, the grandparented winter ranges by mutual agreement, so long as the net timber supply impact is not increased. Potential refinements, where agreed to by both MOF and MELP with input from licensees and MEM, may include:
 - adjusting boundaries,
 - deleting winter ranges, and/or
 - replacing deleted ranges with new ones.

Replacement UWR within the TSR1 maximum limits may be made on an area-for-area basis within the operable land base providing the refined UWR meet the biological criteria outlined above, and specifically are necessary for the winter survival of an ungulate species.

3. Grandparented winter ranges that do not need refinement should be taken forward for confirmation and approval as soon as possible. Those grandparented winter ranges that do need refinement should be taken forward for confirmation and approval only after agreement that these refinements are consistent with the definition of UWR in the OPR and the principles outlined above.

⁴ “New” in the context of this MOU means not accounted for in TSR1.

C. Non-grandparented, Previously Mapped Winter Ranges

1. Previously-mapped winter ranges that were not grandparented as of October 15, 1998, will be formally established and confirmed as UWR as quickly as possible, and before October 15, 2003, according to the provisions outlined in the OPR. These areas will be accommodated in the interim according to Section E of this MOU.
2. These candidate UWR should continue to be included in the base case for the next round of Timber Supply Reviews. Such inclusion, however, will not necessarily imply subsequent confirmation by the Chief Forester and the Deputy Minister of the Ministry of Environment, Lands and Parks pursuant to Section 69 of the OPR.
3. Replacement UWRs within the TSR1 maximum limits may be made on an area-for-area basis within the operable land base providing the refined UWR meet the biological criteria outlined above.

D. Non-grandparented, Previously Unmapped Winter Ranges

1. Non-grandparented, previously unmapped winter ranges include winter ranges that were historically included in Timber Supply Reviews as a forest cover constraint or considered as another TSR sensitivity, but which were not specifically mapped or spatially defined. These previously unmapped winter ranges should be identified in accordance with Principles 4 and 5 as quickly as possible, and their approximate locations should be shown on operational-scale maps.
2. These candidate UWRs should continue to be included in the base case for the next round of Timber Supply Reviews. Such inclusion, however, will not necessarily imply subsequent confirmation by the Chief Forester and the Deputy Minister of the Ministry of Environment, Lands and Parks pursuant to Section 69 of the OPR.

E. Management of Non-grandparented, Winter Ranges (Sections C and D above)

1. Consistent with Guiding Principle 6, MELP and MOF will provide licensees and MEM with operational-scale maps that show approximate locations of candidate winter ranges. When these maps are provided to the licensees, licensees should be informed that this information is being made available to them for their consideration when developing operational plans, and if any of these conflict with existing licensee planning, that the licensee should discuss these with both agencies at the earliest possible time.

3. Licensees should be made aware that these areas are being actively reviewed for formal UWR designation, and that statutory decision-makers will consider this when reviewing and approving forest development plans.

Approved by:

Greg Koyl
Assistant Deputy Minister
Operations Division
Ministry of Forests

Jon O’Riordan
Assistant Deputy Minister
Regional Operations
Ministry of Environment, Lands and Parks

Date: _____

Date: _____

Attachments: Letter (August 6, 1998)
Sections from the OPR pertaining to Ungulate Winter Range
Administrative process for mapping and/or confirming under the Forest
Practices Code those Ungulate Winter Ranges factored into TSR1
Ungulate winter range criteria

**ADMINISTRATIVE PROCESS FOR MAPPING AND/OR CONFIRMING
UNDER THE FOREST PRACTICES CODE THOSE UNGULATE
WINTER RANGES FACTORED INTO TSR1**

1. MELP Regional Habitat Protection Section Head⁵(or designate) describes the winter needs for ungulate species in question in the region, based on biological criteria⁶. The Habitat Protection Section Head (or designate) may consult with other biologists in and outside of government as part of this process. The resulting criteria for winter ranges will be provided to district staff in both ministries, who will provide copies to local forest companies.
2. From information provided by district MELP and Forest Service staff, from forest companies, or from past field surveys or winter range plans, MELP Regional Habitat Protection Section Head (or designate) provides a map of the candidate or grandparented ungulate winter range(s).
 3. MELP will provide copies of maps and/or written materials that verify that this UWR and recommended objectives (including acceptable forest practices) are either the same as or equivalent to a UWR that had been identified (e.g., on ESA maps or in reviews of development plans) at the time of the timber supply review in period 1992-1996 (TSR1)⁷. Winter range boundaries or locations may be adjusted for biological reasons within the area covered by the specific TSR provided the overriding timber supply impacts recognized in TSR1 are not exceeded.
 4. The Forest Practices Code ungulate winter range proposal is vetted through District MoF and MELP staff and Regional Ministry of Energy and Mines (MEM) staff with respect to operational implications. If the proposed winter range poses significant operational constraints the Regional Habitat Protection Section Head (or designate) and District MoF and District MELP staff may agree to refine boundaries as long as biological values are maintained. Whether or not agreement is reached on refining boundaries to better meet operational needs, proceed to Step 5.
 5. The proposed ungulate winter range together with both a biological justification (provided by MELP) and operational analysis (provided by MoF, and in some

⁵ While the specific reference herein is to the MELP Habitat Protection Section Head, it is understood that the intent is that conclusions reached regarding the winter needs for ungulate species and spatial delineation of winter ranges will be based on a process of open communication between the Ministry of Environment, Lands and Parks, the Ministry of Forests and the forest industry throughout.

⁶ General criteria for ungulate winter ranges throughout BC are attached.

⁷ With respect to confirming and establishing ungulate winter ranges factored into TSR1, the cumulative effect of all designated and proposed winter ranges within a management unit (TFL or TSA) must not exceed the netdown amount from TSR1 (i.e., previously mapped winter ranges referred to in sections B and C of the May 11, 2000 Memorandum of Understanding, or the cover constraint or other TSR sensitivity referred to in section D of the Memorandum of Understanding). The timber supply information bases of TSR1 were not developed for tracking the impact of Ungulate Winter Ranges after the determination of the AAC. Information from TSR1 is complicated by shifting data bases and changes in forest management practices (e.g., operability). Where there is uncertainty about the TSR1 impact of UWRs in a specific management unit or Timber Supply Branch is not able to confirm the impact allowance, a local agreement between the agencies (MOF and MELP) will be reached. In cases where local agreement cannot be reached on the impact allowance for UWRs, the MELP/MoF Dispute Resolution Process shall be used to provide advice to the appropriate statutory decision maker.

cases by MEM; and with any input by MELP) is forwarded to Victoria. The operational analysis should state whether industry concurs with the proposal or not. Furthermore, if industry wishes to document objections, other professional biologist opinions, other proposed boundaries, or details of operational implications, that information should be included as part of this package.

6. Victoria staff ensure that package is complete and that adequate briefing materials have been completed for the statutory decision makers. The package is then forwarded to the Deputy Minister of MELP and the Chief Forester of MoF for confirmation as per Section 69 of the Operational Planning Regulation.

Approved by:

_____ Date: _____
Greg Koyl
Assistant Deputy Minister
Operations Division
Ministry of Forests

_____ Date: _____
Jon O’Riordan
Assistant Deputy Minister
Regional Operations
Ministry of Environment, Lands and Parks

UNGULATE WINTER RANGE CRITERIA

To be acceptable as an ungulate winter range, the mapped area must meet at least one of the following criteria:

4. a combination of topographic and vegetative features defining high-quality winter range, as appropriate for the species and the locality, as determined by regional wildlife or habitat staff of MELP¹;
5. a documented history of winter use, as determined by regional wildlife or habitat staff of MELP; or
6. in localities that are regularly occupied by an ungulate species during the winter but that do not have sufficient high-quality winter range as defined under point 1 above, a combination of topographic and vegetative features that provide the most suitable habitat for winter range. This is the least preferred of these three criteria and should be used relatively infrequently.

Typical topographic and vegetative features to be used in delineating winter ranges are:

- slope
- aspect
- elevation
- topographic shading
- presence of rock outcrops or cliffs
- forest cover type (species composition, height, age, volume or basal area, canopy closure of overstorey)
- species composition and abundance of understory vegetation
- species composition and abundance of arboreal and terrestrial lichens
- stand heterogeneity
- size and configuration of area.
- adjacency of other important habitats such as early winter and spring ranges
- proximity to other winter ranges

¹ The topographic and vegetative criteria appropriate for each ungulate species and region will be distributed to district staff of MoF and MELP. These criteria will be compiled from a variety of sources including published research reports and other research data, field inventories, and information from experienced biologists.

Memorandum of Understanding – Clarifications (listed by document)

Letter August 17, 2000

Page 2, last sentence. It is suggested that proposed UWRs and all the accompanying information for them be submitted prior to October 15, 2003. It is recommended (not required) that these be submitted by April 2003 to allow time for the packages to be reviewed for completeness and have sufficient time to complete the confirmation process.

Memorandum of Understanding May 11, 2000

Page 2, A.6. Candidate UWRs may be packaged into meaningful groups before submission such as by Timber Supply Area or by Forest District. However, if immediate protection is deemed necessary to preserve the habitat in a proposed UWR, then these candidate winter ranges should be submitted as soon as they are completed.

Page 2, A.7, Last sentence. Only biologists can determine if lesser levels of UWR are satisfactory to achieve the conditions of the MoU and satisfy the intent of the OPR. If lesser levels are not deemed adequate, it is the budget given in TSR1 that is to be used. Note that input into this decision may come from biologists representing various groups such as MELP, industry, etc.

Page 3, A.8. Another process will be established to deal with “new” UWRs where they are needed. This may be in the form of another MoU.

Page 3, A.9. MELP and MoF staff agrees that a UWR established by a Higher Level Plan (HLP) should have the same effect as those established under section 69 of the OPR (if they are properly documented and spatially defined). However, UWRs are only "enforceable" on the ground to the extent that they have been incorporated into operational plans. UWR boundaries identified in a HLP should be as accurate as reasonably possible. An operational plan can be approved as long as it doesn't "materially conflict" with a HLP. This already provides licensees a certain amount of flexibility with respect to overlaying a cutblock over part of a UWR identified in a HLP. If the UWR boundaries in the HLP are themselves just a guesstimate, it would seem to make them less credible and less compelling when deciding what a "material conflict" is. Biologists should consider the availability of habitat suitable for UWR through these initiatives; however, the biologist may still want to have these UWRs confirmed under the process laid out by the MoU to ensure they receive the same legal designation under the FPC.

Page 3, B.1. Those UWRs that have been Grandparented fall under the regulation and thus its management plan must be followed (it is legally binding). This continues to be true unless the Grandparented UWR fails to be confirmed by Oct 15/03.

Page 3, B2, last sentence. For criteria of what constitutes the “winter survival of ungulates” see bullets at the bottom of page 1 of the MoU (i.e. this statement refers to the survival of local populations, not just the survival of a species somewhere in BC).

Page 4, C2 & D2. Even if non-grandparented UWRs are not included in the base case for the next TSR, the maximum amount provided for candidate UWRs is set by TSR1. This is true even if less budget is provided for UWR in the next TSR.

Administrative Process May 11, 2000

Page 1, #3, footnote 3. The people at MoF's Forest District offices are likely the best people to contact for information regarding the “budget” given in TSR1. This may be complicated when conversions need to be done (e.g. volume or area needs to be determined from Ews included in TSR1). If MELP and MoF staff can not agree on the calculated budget set out in TSR1 then the MELP/MoF Dispute Resolution Process shall be used.

Page 1, #3, footnote 3. Although operability lines may have changed to include more area since TSR1, the TSR1 budget will remain the same (there will not be a proportionate increase in the budget). This may mean that allowances in TSR1 no longer provides for ungulate winter ranges in the location or to the extent needed to responsibly conserve ungulate values under the FPC. In these instances “new” UWRs may need to be established under Section 69(1) of the Operational Planning Regulation following section A8 of the MoU.

Page 1, #4. If all parties can not come to an agreement on the proposed ungulate winter range proposal, then the MELP/MoF Dispute Resolution Process shall be used. Excess time should not be spent trying to obtain agreement at the district level. These issues can be settled with the MELP/MoF Dispute Resolution Process.

Page 2, #5. Proposed UWRs packages should contain both the biological justification by MELP and the operational analysis by MoF (sometimes MEM) before it is sent to Victoria. It is expected that once MoF (and MEM) have received the UWR proposal they will complete the operational analysis in a reasonable time frame as not to delay the process set out in the MoU.

Note: If a party feels any step of this process is taking an excess amount of time, the situation should be brought to the attention of [Greg McKinnon](#) to bring it forward to the executive.

Page 2, #5 & 6. Proposed UWRs packages should be sent to [Brian Nyberg](#) (MoF Timber Management Branch) and [Greg McKinnon](#) (MELP Habitat Branch). These staff will ensure that the packages are complete and will then forward them to the Deputy Minister of MELP and the Chief Forester of MoF for confirmation.

Page 2, #6. It is not required that mapped UWRs be in digital format (although this is ideal).

Letter August 6, 1998

Section 2. Clarification – both steps 1 and 2 must be completed by October 2003.

Section 2, 3rd bullet, last sentence; and Step 1, last sentence. Clarification – it is TSR1 that is being referred to in these instances.

Section 2, Step 2. MELP and MoF staff agrees that a UWR established by a Higher Level Plan (HLP) should have the same effect as those established under section 69 of the OPR (if they are properly documented and spatially defined). However, UWRs are only "enforceable" on the ground to the extent that they have been incorporated into operational plans. UWR boundaries identified in a HLP should be as accurate as reasonably possible. An operational plan can be approved as long as it doesn't "materially conflict" with a HLP. This already provides licensees a certain amount of flexibility with respect to overlaying a cutblock over part of a UWR identified in a HLP. If the UWR boundaries in the HLP are themselves just a guesstimate, it would seem to make them less credible and less compelling when deciding what a "material conflict" is. Biologists should consider the availability of habitat suitable for UWR through these initiatives; however, the biologist may still want to have these UWRs confirmed under the process laid out by the MoU to ensure they receive the same legal designation under the FPC.

APPENDIX B

Grandparenting Letter



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CONTACT: Madeline L. Maley, SIFD
Date typed: 98/10/09 Date revised: 98/10/13 01:00 pm

File: 12190-00/UWR

October 13, 1998

To: Ken Collingwood, Regional Manager
Vancouver Forest Region

Re: **Recommendation for Grandparenting Ungulate Winter Ranges for Tree Farm Licenses in South Island Forest District**

The *Forest Practices Code of British Columbia Act (FPC) Operational Planning Regulation Part 1-Interpretation Section 1(1)* defines "ungulate winter range" to mean an area that is identified as being necessary for the winter survival of an ungulate species by any of the following:



- (1)(a) a higher level plan;
 - (b) the chief forester and Deputy Minister of Environment Lands and Parks under Section 69;
 - (c) a wildlife management plan or strategy approved before October 15, 1998
 - (i) by
 - (A) the district manager or regional manager, and
 - (B) the designated environmental official,
 - (ii) by the chief forester, or
 - (iii) by the ministers,
- but a wildlife management plan or strategy approved under this paragraph expires on October 15, 2003, unless
- (iv) modified under paragraphs (a) or (b), or
 - (v) confirmed before that date under Section 69.

We, Cindy Stern, District Manager, Ministry of Forests (MoF), South Island Forest District, and Judy Teskey, Forest Ecosystem Specialist, Ministry of Environment, Lands and Parks, Vancouver Island Region, have reviewed existing ungulate winter ranges in the South Island Forest District as per the August 6, 1998 memorandum from Larry Pedersen, Chief Forester, MoF, and Jon O'Riordan, Assistant Deputy Minister, MELP, and in consideration of the criteria agreed to by MoF and MELP as provided on September 8, 1998 by Greg Jones, Chief of Wildlife, MELP. We have attached a list of existing ungulate winter ranges in Tree Farm Licenses in South Island Forest District and have identified those which we recommend for grandparenting as per the *FPC Operational Planning Regulation Section 1(1)(c)*.

We have considered the following Tree Farm Licenses within the South Island Forest District in making my recommendations: Tree Farm License 25 (Block 1, Jordan River); Tree Farm License 44, excluding any area within the Clayoquot Sound Land Use Decision Area; Tree Farm License 46; Tree Farm License 47 (Nanaimo Lakes); and Tree Farm License 54, excluding any area within the Clayoquot Sound Land Use Decision Area.

We recognise that there are existing ungulate winter ranges within the Clayoquot Sound Land Use Decision Area and acknowledge that they will be considered within the context of forest management planning under the Scientific Panel Recommendations by the Central Region Board. We recommend that existing ungulate winter ranges within the Clayoquot Sound Land Use Decision Area not be considered for confirmation as per the *FPC Operational Planning Regulation* Section 1(1)(c).

We have determined that there are no existing ungulate winter ranges identified in Tree Farm License 25 Management and Working Plan No. 9 (January 1, 1997 to December 31, 2001) and, as such, we recommend that none be grandparented as per the *FPC Operational Planning Regulation* Section 1(1)(c).

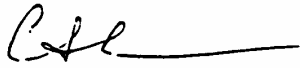
We have determined that all ungulate winter ranges identified in Tree Farm License 44 Management and Working Plan No. 3 (January 1, 1998 to December 31, 2002) outside the Clayoquot Sound Land use Decision Area, meet the criteria agreed to by MoF and MELP. Therefore, we recommend that all ungulate winter ranges identified in Tree Farm License 44 Management and Working Plan No. 3 (January 1, 1998 to December 31, 2002) be grandparented as per the *FPC Operational Planning Regulation* Section 1(1)(c).

We have determined that all existing ungulate winter ranges identified in Tree Farm License 46 Management and Working Plan No.3 (December 1, 1996 - November 30, 2001) meet the criteria agreed to by MoF and MELP. Therefore, we recommend that all ungulate winter ranges identified in Tree Farm License 46 Management and Working Plan No.3 (December 1, 1996 - November 30, 2001) be grandparented as per the *FPC Operational Planning Regulation* Section 1(1)(c).

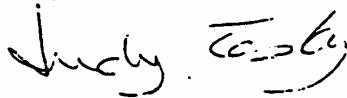
We have determined that all ungulate winter ranges identified in Tree Farm License 47 Management and Working Plan No.2 (December 1, 1996 - November 30, 2001) meet the criteria agreed to by MoF and MELP. Therefore, we recommend that all ungulate winter ranges identified in Tree Farm License 47 Management and Working Plan No.2 (December 1, 1996 - November 30, 2001) be grandparented as per the *FPC Operational Planning Regulation* Section 1(1)(c).

We have determined that there are no existing ungulate winter ranges identified in Tree Farm License 54 Management and Working Plan No. 2 (January 1, 1996 to December 31, 2000) outside the Clayoquot Sound Land Use Decision Area and, as such, we recommend that none be grandparented as ungulate winter ranges as per the *FPC Operational Planning Regulation* Section 1(1)(c).

We recommend that prior to confirmation of ungulate winter ranges by 2003, the district manager and designated environment official may agree to minor boundary revisions as part of the Forest Development Plan approval process.



Cindy Stern
District Manager
South Island Forest District
Ministry of Forests



Judy Teskey
Forest Ecosystem Specialist
Ministry of Environment, Lands and Parks
Vancouver Island Region

pc: Earl Warnock, Regional Director
Ministry of Environment, Lands and Parks
Vancouver Island Regional Headquarters

Attach.

I have reviewed the information as submitted and confirm on behalf of the Chief Forester that the areas as recommended, meet the definition of ungulate winter range as outlined in Section 1, subsection 1 (c)(ii), of the Operational Planning Regulation.

Ken Collingwood
Regional Manager, Vancouver Forest Region

Community Accounts for Identified Wildlife"; and *Procedures for Establishing Wildlife Habitat Areas*". Also included is the document entitled "General Wildlife Measures for Identified Wildlife" which will outline the requirements for practices within wildlife habitat areas. Approximately 20 species associated with forest habitat on the Identified Wildlife Candidate lists (volumes one and two) are present in TFL 44.

Many wildlife issues have been accounted for in the timber supply analysis through the protection of habitat for large mammals and endangered or threatened birds, and through implementation of biodiversity strategies. Wildlife inventories were accepted by MELP for use in the timber supply analysis on February 13, 1996.

Included in the inventory are deer and elk winter ranges, deer and elk zones (broad areas classified as having high wildlife habitat potential but needing ground inspections to delineate definitive boundaries) and marbled murrelet nesting habitat. The licensee has raised a particular concern that some areas set aside for marbled murrelet nesting may not be used, while other areas that are used are not identified in the current inventory.

In the base case, marbled murrelet areas and critical elk and deer winter ranges were netted down at 100 percent, low elevation deer winter ranges at 50 percent, and deer and elk zones at an average of 73 percent. As a result, 9409 hectares (including overlapping areas) were removed from the land base.

from
TFL 44
AAC
determin-
Jan. 1, 1998

I am satisfied the licensee used the best wildlife habitat inventory data available at the time the information package was prepared for the timber supply analysis. However, some further wildlife areas have since been identified. Specifically, three nest sites for Queen Charlotte goshawks, which are dependent on old growth, have been identified in Alberni East and West, and according to MELP it is likely that more nesting sites will be found. MELP has also requested the deferral of harvesting in some areas proposed for deer winter range. While it is expected that additional area will be required as inventories continue to be updated and the location and habitat requirements of "species at risk" are determined, it is also anticipated that mitigation strategies will be developed to minimize the timber supply impacts. For example, while the recent identification of the three Queen Charlotte goshawk nesting sites had a small immediate impact on the land base of TFL 44, strategies which overlap Queen Charlotte goshawk forage areas with deer winter ranges, where appropriate, will help to decrease the impact of this species. MELP has indicated that when a regional strategy to protect these red- and blue-listed and regionally dependent species is in place, this will help to prioritize and limit the number of wildlife habitat areas to be set aside for each species.

The Huu-ay-aht First Nation expressed concern that wildlife species within TFL 44 are not well catalogued and also advised me that wildlife habitat studies and the cataloguing of species were currently being undertaken within their traditional territory. Improved wildlife habitat inventories and related studies will allow more explicit consideration of wildlife values in future determinations.

The licensee has attempted in the timber supply analysis to provide a realistic accounting for mapped sites of known significant important wildlife habitat on TFL 44. The size of the reduction applied in the analysis reflects this attempt. However, in the base case the

APPENDIX C

Consultation Summary - Stakeholders

Summary of Consultation - Stakeholders

MWLAP, Weyerhaeuser and MOF representatives worked together to determine the 58 UWRs in TFL 44 that were proposed for confirmation. A joint letter endorsing the proposal of the UWRs, signed by Weyerhaeuser and MWLAP, is included in the Executive Summary and Endorsement section of this report.

Table 6. Stakeholder consultation summary.

Stakeholder	Comments (MWLAP response in italics)
Weyerhaeuser Company Ltd.	<ul style="list-style-type: none"> • Endorsed this report and the 58 proposed UWRs, including final UWR configurations, netdowns, THLB and volume impacts (endorsement letter is included in the Executive Summary and Endorsement section of this report). • Reviewed the December 1, 2003 draft report. Requested the THLB impact numbers be changed to eliminate rounding errors. Also provided further information regarding volume impacts of the proposed UWRs to be included in the report. <p><i>UWR THLB impact numbers were subsequently changed from 28 ha to 27 ha. Volume impact information was included in the report.</i></p>
Ministry of Forests, South Island Forest District (SIFD)	<ul style="list-style-type: none"> • Dan Biggs, Planning Forester, SIFD provided comments pertaining to maintaining a uniform and consistent approach to MOF/MWLAP policy. • Reviewed the December 1, 2003 draft report. Expressed concern that the proposed UWRs did not follow policy, as their volume impacts exceeded the TSR 1 timber supply impacts by 201,930 m³ of standing timber inventory. Requested a rationale explaining why the MOUs were not being followed. <p><i>Rationale provided within the endorsement letter. Further analysis by Weyerhaeuser showed the volume impacts were reduced to 110,000 m³ when recent harvesting within the grandparented UWRs was taken into account.</i></p>
Ministry of Sustainable Resource Management	MRSM was notified of the proposed UWR locations for use in their Landscape Unit Planning.
Land and Water BC	MWLAP reviewed potential conflicts between Lands tenures (as shown by reference maps in the LWBC office) and proposed ungulate winter range areas. No conflicts were found.

APPENDIX D

First Nations Record of Consultation Summary

First Nations Record of Consultation Summary

First Nations with asserted traditional territories within TFL 44 were consulted to address First Nation interests regarding the proposed ungulate winter ranges. Consultation was done through a combination of mail-outs, phone calls, faxes, emails, and meetings. Formal letters that were received from First Nations are included.

Table 7. TFL 44 First Nations record of consultation summary.

First Nation	Response	Consultation Record
Campbell River Indian Band	Verbal response – the deer and elk winter ranges are outside of the Campbell River Indian Band’s traditional territory.	File: 36470-40/FN-TFL 44 File: 20540-20/CAMP
Cape Mudge Indian Band	Verbal response and written confirmation - Excerpt from emailed letter: <i>We at Cape Mudge do not have a problem with the winter habitat areas for tree farm license 39, block 2, except for the reduced in size paragraph. Usually when the area is reduced by forest companies, it means a considerable smaller sized winter range. Aside from that, the areas seem to be okay at this time. Also, we have no objections for the other maps that were sent early on. T.F.L. 25. There are also no objections to lot 44 Arrowsmith divisions. (refers to TFL 44 and Arrowsmith TSA).</i>	File: 36470-40/FN-TFL 44 File: 20540-20/CMUDGE
Comox Indian Band	Written response – Excerpt from letter: <i>the Hamatla Treaty Society responds to referrals on behalf of the Comox Indian Band.</i>	File: 36470-40/FN-TFL 44 File: 20540-20/COMOX
Cowichan Tribes	No comments specific to TFL 44 were received. Cowichan Tribes provided a letter responding to the TFL 46 and Arrowsmith TSA UWR referrals – an excerpt from this letter follows: <i>We view the proposed UWRs as an initial step in protecting ungulate habitat. However, we feel that the “budget” for UWRs on the landbase falls severely short of the habitat necessary to restore and support the elk populations within the territory. The proposed UWRs will not protect enough habitat to allow Cowichan to pursue their aboriginal rights.</i>	File: 36470-40/FN-TFL 44 File: 20540-20/COWICHAN

Table 6 (Continued). TFL 44 First Nations record of consultation summary.

First Nation	Response	Consultation Record
Ditidaht Indian Band	Response not received. MWLAP is expecting a written response, however Ditidaht representative is having problems getting the letter signed. The letter will be included in the consultation file when it is received.	File: 36470-40/FN-TFL 44 File: 20540-20/DITID
Hupacasath First Nation	Written response – Excerpts from letter: <i>We do use the areas shown on your map for numerous traditional uses and activities. However the uses practiced would have very little impact on wildlife (except hunting).</i> <i>We support your effort for the UWR and would like the confluence enlarged.</i> The confluence mentioned in the letter refers to UWR 92F.015-04 in TFL 44. MWLAP and Weyerhaeuser staff modified the boundaries of the UWR to capture some additional high value elk habitat.	File: 36470-40/FN-TFL 44 File: 20540-20/HUPAC
Huu-ay-aht First Nations	Response not received.	File: 36470-40/FN-TFL 44 File: 20540-20/HUU-AY
Lake Cowichan First Nation	Verbal response and written confirmation (email) – Unable to respond for capacity reasons.	File: 36470-40/FN-TFL 44 File: 20540-20/LAKE-COW
Nanoose First Nations	Response not received.	File: 36470-40/FN-TFL 44 File: 20540-20/NANO
Pacheedaht First Nation	Written response – Excerpt from letter: <i>Pacheedaht supports the Ungulate Winter Range initiatives in principle, however; until Pacheedaht concerns regarding our constitutional aboriginal rights within the Ungulate Winter Ranges are clarified and economic interests are formally addressed we regret Pacheedaht is unable to formally endorse the Ungulate Winter Ranges.</i>	File: 36470-40/FN-TFL 44 File: 20540-20/PACH
Qualicum Indian Band	Formal response was not received. Expressed concern that the entire consultation process was flawed because the First Nations do not have the money or staff to comment in a relevant manner.	File: 36470-40/FN-TFL 44 File: 20540-20/QUAL

Table 6 (Continued). TFL 44 First Nations record of consultation summary.

First Nation	Response	Consultation Record
Snuneymuxw First Nation	Formal response was not received. Indicated would be sending written response. The letter will be included in the consultation file when it is received.	File: 36470-40/FN-TFL 44 File: 20540-20/SFN
Tsashaht Band	Formal response was not received. Indicated would be sending letter. The letter will be included in the consultation file when it is received.	File: 36470-40/FN-TFL 44 File: 20540-20/TSESH
Uchucklesaht Band	Formal response was not received.	File: 36470-40/FN-TFL 44 File: 20540-20/UCHUCK
Ucluelet First Nation	Formal response was not received.	File: 36470-40/FN-TFL 44 File: 20540-20/UCLUE
Treaty Groups		
Hul'qumi'num Treaty Group	<p>Written response – Excerpt from letter: <i>As I am sure you are aware, elk and deer are extremely important to the Hul'qumi'num people. We are keenly interested in restoring habitat and managing these species to ensure the long term health and survival of their populations. We would like to see the protection and restoration of large areas of habitat, in order to assist these populations to rebuild. The creation of these UWRs is a small but important step in protecting habitat for deer and elk.</i></p> <p><i>As most of the Crown lands in our territory are potential treaty lands, the creation of UWRs may impact our economic opportunities post treaty. We would expect that the “costs” of protecting ungulate habitat should fall equally on the holders of the land, including private landowners. We would like to work with you to determine methods of protecting habitat on private lands. We would also expect that the costs of restoring habitat should fall on the shoulders of those responsible for its destruction.</i></p>	File: 36470-40/FN-TFL 44 File: 20525-20/HULQ

Table 6 (Continued). TFL 44 First Nations record of consultation summary.

First Nation	Response	Consultation Record
Hamatla Treaty Society	<p>Verbal and written response. Excerpt from letter:</p> <p><i>We support protection of winter habitat areas for these species and agree that such protection is critical to their survival. Consequently, at this time we have no objection to the designation of the proposed areas as ungulate winter ranges.</i></p>	<p>File: 36470-40/FN-TFL 44 File: 20525-20/HAMATLA</p>

APPENDIX E

1:110 000 Overview Map

TFL 44 Ungulate Winter Ranges (U-1-013)

APPENDIX F

Individual UWR Maps

TFL 44 Ungulate Winter Ranges (U-1-013)