

Ministry of Agriculture and Lands
Coast Region

Draft White Landscape Unit Plan

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Figure 1: White Landscape Unit, North Central Vancouver Island

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1.0 Introduction

This report describes the biodiversity conservation plan for the White Landscape Unit (LU) and includes the associated legal objectives for old growth retention and wildlife tree retention. A description of the planning unit, discussion on significant resource values, and an Old Growth Management Area (OGMA) summary are provided.

Biological diversity is defined as: *'the diversity of plants, animals and other living organisms in all their forms and levels of organisation, and includes the diversity of genes, species and ecosystems as well as the evolutionary and functional processes that link them'*¹. British Columbia is the most biologically diverse province in Canada. In British Columbia, 115 species or subspecies of known vertebrates and 364 vascular plants are listed for legal designation as threatened or endangered². The continuing loss of biological diversity will have a major impact on the health and functions of ecosystems and the quality of life in the province (Resources Inventory Committee, 1998).

Planning to maintain biodiversity occurs at a variety of levels, all of which are linked hierarchically. The provincial level includes parks and the Protected Area Strategy, while at the regional level, the Vancouver Island Land Use Plan gives guidance and legal direction to finer levels of strategic planning, in this case, landscape and stand level conservation of old growth forests.

Planning for OGMA and wildlife tree patch (WTP) biodiversity values is recognized as a high priority for the province. LU planning is supported by the *Forest Practices Code of BC Act (FPC)* and provides for the legal establishment of objectives to address landscape level biodiversity values.

Implementation of this strategic planning initiative is intended to help sustain certain biodiversity values. Managing for biodiversity through retention of old growth forests is not only important for wildlife, but can also provide important benefits to ecosystem management, protection of water quality and preservation of other natural forest resources. Although not all elements of biodiversity can be, or need to be, maintained on every hectare, a broad geographic distribution of old growth ecosystems is intended to help sustain the genetic and functional diversity of native species across their historic ranges.

The Campbell River Forest District has completed LU boundaries for Vancouver Island and established Biodiversity Emphasis Options (BEOs) in accordance with the direction provided by government. Current government direction requires that priority biodiversity provisions, including the delineation of OGMAs and specification of Wildlife Tree Patch

¹ FPC Biodiversity Guidebook, September 1995

² BC Species and Ecosystems Explorer. 2003. Victoria, British Columbia, Canada. Available: <http://srmapps.gov.bc.ca/apps/eswp/> (September 15, 2003).

(WTP) requirements be undertaken immediately. This work was initiated by the former Ministry of Sustainable Resource Management (now incorporated into the Ministry of Agriculture and Lands) in conjunction with Weyerhaeuser Company Limited (now Cascadia Forest Products).

Supporting documentation regarding government policy, planning processes and biodiversity concepts are provided in the following documents:

- **1995 Biodiversity Guidebook**,
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/biodiv/biotoc.htm>,
- **1999 Landscape Unit Planning Guide (LUPG)**,
http://srmwww.gov.bc.ca/rmd/srmp/background/lup_landscape.htm,
- **Vancouver Forest Region Landscape Unit Planning Strategy (1999), Vancouver Forest Region Planning Document, Nanaimo, B.C.**
- **Vancouver Island Summary Land Use Plan (Feb. 2000)**
<http://srmwww.gov.bc.ca/rmd/lrmp/vanisle/docs/vislup.pdf>
- **VILUP Higher Level Plan Order (Dec. 2000)**,
<http://srmwww.gov.bc.ca/rmd/lrmp/vanisle/vihlp.htm>
- **Sustainable Resource Management Planning Framework: A Landscape-level Strategy for Resource Development.**
<http://srmwww.gov.bc.ca/rmd/srmp/doc/SRMPI-May1-Final-Web1.pdf>

2.0 White LU Description

2.1 White LU Biophysical Description

The White LU is situated within the Northern Island Mountains Ecosection on north-central Vancouver Island. The total landscape unit area is approximately 42800 ha, of which 92% is forested. The LU is composed of one main riparian system, the White river, which feeds into the Salmon River. The most productive forests occur at lower elevations associated with riparian habitats. This is a very rugged, mountainous LU that has large areas of subalpine and alpine forest and includes, at its southern end, Victoria Peak which is 2163 m above sea level. Dominant tree species in the LU are Douglas-fir, western hemlock, amabilis fir and western red cedar, with smaller amounts of yellow cedar at higher elevations. The local climate is dominated by maritime influence, with cool to warm summers and wet winters. Although most precipitation occurs as rain, large snow accumulations may occur at higher elevations. Average annual precipitation at Duncan Bay, the nearest climate recording center, is 162 centimetres. Based on biogeoclimatic classification it is expected that average annual precipitation within the LU would be greater than that reported for Duncan Bay.

The location of the White LU on Vancouver Island is shown in figure 1



Figure 1 White Landscape Unit, North Central Vancouver Island

The Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) Biogeoclimatic Ecosystem Classification (BEC) zones cover the White landscape unit. The CWH is subdivided into the CWHmm1 (submontane moist maritime), CWHmm2 (montane moist maritime), CWHvm1 (submontane very wet maritime), CWHvm2 (montane very wet maritime), and the CWHxm2 (very dry maritime). The only biogeoclimatic variant recognized in the higher elevation MH is the MHmm1 (windward moist maritime variant). One natural disturbance type (NDT 1)³ is most common, and is associated with the CWHvm1, CWHvm2, and MHmm1. Historically, these forest ecosystems were usually uneven-aged or multi-aged, with regeneration occurring in gaps created by the death of individual trees or small patches of trees. Where wind, fire, or landslides occurred, they were generally small and resulted in irregular edge configurations and landscape patterns.

³ FPC Biodiversity Guidebook, September 1995

The less common NDT type (NDT 2), is found in the CWHmm1, CWHmm2, and CWHxm2 ecosystems, found only in the north-easterly portion of the LU. Historically, these forest ecosystems were usually even-aged, but extended post-fire regeneration periods produced stands with uneven-aged components. Wildfires were often of moderate size (> 20 ha), with unburned areas resulting from sheltering terrain features, higher site moisture, or chance. Some unclassified NDT3 may be present in this LU. On the coast, these NDT3 ecosystems are characterized by periodic catastrophic wind disturbances. These disturbances tend to produce a landscape mosaic of even-aged stands ranging in size and usually containing mature forest remnants.

2.2 Summary of Land Status

Land status within the White LU is summarized in Table 1.

Table 1 Land Status of the White Landscape Unit

Ownership	Hectares	Percent
TFL 39 TSA	42561	99.8
Protected Area	73	0.2
Total	42634	100

3.0 Key Resource Tenure Holders

Tenure holdings may include forest tenures administered by the Ministry of Forests (MoF), mineral tenures administered by the Ministry of Energy, Mines and Petroleum Resources and their resource tenures are administered by the Ministry of Agriculture and Lands. With tenure holders, other than forestry, the planning strategy generally aims to avoid placement of OGMA's within existing tenures, while with forest tenures the management intent is to avoid placement of OGMA's over cutblocks and roads that have received approval status.

3.1 Forest Tenure Holders

The LU plan area, apart from protected areas and a small amount of the Strathcona TSA, is covered entirely by Weyerhaeuser's TFL 39, Block 2. Extensive iterative review and discussion with Weyerhaeuser staff has taken place to ensure that the intent of this LUP has been conveyed and that impacts on future planned development are minimized.

3.2 Mining Tenure Holders

Mineral tenures and occurrences listed in table 2 overlap with OGMA's within the White LU. XXX OGMA's were mapped in the area based on their availability as non-contributing, or constrained forest such as riparian areas or gully complexes.

Table 2. Mineral Tenure overlap with OGMA's

OGMA Polygon Number	Mineral tenure	General location
7	389167, 389168	Lower White River
8	231489, 389167	Lower White River
115	370307; 346861	Upper White River
79	395206	Upper White River

Appendix 4 shows the overlap of the OGMA's and the mineral tenures

Exploration and development activities are permitted in OGMA's. The preference is to proceed with exploration and development in a way that would be sensitive to the old growth values of the OGMA. If exploration and development proceed to the point of significantly impacting old growth values, then the OGMA status would be moved and re-designated elsewhere.

4.0 Significant Resource Values

4.1 Fish, Wildlife and Biodiversity

Anadromous fisheries values are considered high in the White River. Riparian reserve zones established as per the *FPC* adjacent to fish streams will help maintain a significant amount of riparian fish and wildlife habitat. These riparian areas provide additional opportunities to conserve old growth values.

Wildlife resources of primary management concern in the White LU include: black tailed deer, Roosevelt elk, eagles, black bear, northern goshawk, *Accipiter gentiles laingi* (nogo), and marbled murrelet, *Brachyramphus marmoratus* (mamu). The northern goshawk and the marbled murrelet are the primary species at risk that are recognized as "Identified Wildlife"⁴ in this landscape unit. There are, currently, two areas being

⁴ Volume 1 of the *Identified Wildlife Management Strategy* includes a list of 36 wildlife species and 4 plant communities that are considered to be at risk. These species or plant communities require special management of critical habitat to maintain or restore populations or distributions. Critical habitat is protected within Wildlife Habitat Areas. See the *Identified Wildlife Management Strategy Volume 1 February 1999* for more information.

proposed for inclusion as wildlife habitat areas (WHAs) that will provide habitat suitable for northern goshawk. Additional WHA areas may be proposed in the future for both nogo and/or mamu. Many other species occur in the area including numerous forest birds, other raptors, small mammals, amphibians and furbearers, but their habitat requirements are generally managed within a mixture of forested seral stages distributed across the landscape.

4.2 Timber Resources

The timber harvesting land base (THLB) in the White LU is currently estimated to be over 26,329 ha, while the amount of forest in Protected Area and uneconomic/inoperable status is just over 16,555 ha. The high operability factor establishes the importance of the localized timber resource values. Whereas **XX%** of the THLB has already been harvested, continued access to commercially valuable timber, including future second growth, is a significant economic and social interest. Relatively low-impact, first pass harvesting of accessible old growth timber will continue for the foreseeable future.

Commercially valuable tree species in the White LU are western red cedar, western hemlock, Douglas-fir, amabilis fir, and yellow cedar. Based on forest cover information, Table 2 shows the age class distribution of old forest within productive landbase of the White LU. There are currently over **XXXXXX** ha of old growth forest remaining in the White LU.

**Table 3 Distribution of Productive Forest Land
Within the White LU**

Age Class	Hectares	%
Total		

4.3 Private Land

There is no private land found within the White LU.

5.0 Existing Higher level Plans

5.1 Legally Binding Direction

Legally binding Higher Level Plan (HLP) objectives are one provision that enable specific forest resource management objectives to direct operational planning. Hierarchically, landscape unit objectives must be consistent with established Higher Level Plan Resource Management Zone (RMZ) objectives.

There are no HLP objectives that apply to the White General Management Zone (RMZ 29). The HLP objectives which apply to the Schoen-Strathcona Special Management Zone (SMZ 11) are summarized below and details provided in Appendix 1:

For SMZ 11:

- The target for mature seral forest should range between one quarter to one third of the forested area of each SMZ;
- Retain, within cutblocks, structural forest attributes and elements with important biodiversity functions;
- Maintain late-successional habitat elements and attributes of biodiversity in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems by retaining old seral forest at the site series/surrogate level of representation;
- Retain late-successional habitat elements and attributes of biodiversity in patches of variable size; and
- Maintain the visual quality of known scenic areas in accordance with the recommended visual quality classes in the visual landscape inventory, until the district manager establishes visual quality objectives for the areas.

5.1.1 SMZ 11 Location and Values

The Schoen Strathcona SMZ occurs in central Vancouver Island and contains the headwaters of river systems that drain north to Johnstone Strait (White River) and south to Muchalat Inlet (Gold River). The SMZ extends across district boundaries (Campbell River and North Island – Central Coast) and includes areas of three Tree Farm Licences and a portion of the Strathcona TSA. The area covered by SMZ 11 is approximately 23,500 ha.

Primary values are recognized as old growth biodiversity and connectivity functions, maintenance of wildlife and fish habitats and populations, and visual qualities associated with Victoria and Warden Peaks. Further details regarding primary and secondary management objectives are provided in the Vancouver Island Summary Land Use Plan.

5.2 Non-binding HLP Direction

The Vancouver Island Summary Land Use Plan (VISLUP) includes additional direction for the White LU. Recommended objectives are provided which recognize both timber and non-timber resource values.

5.2.1 SMZ 11

Primary management objectives are listed which are considered as policy guidance to address the following values in the Schoen-Strathcona SMZ: wildlife, fish, biodiversity, watershed management, and visual resources. Secondary objectives are for recreation, timber, tourism, and cultural heritage resources.

5.2.3 GMZ 29

The remainder of the White LU, excluding the small protected area along the White River and the large SMZ, is designated as Resource Management Zone 29 under the VILUP HLP Order. The size of this RMZ is approximately 27,700 ha with the overall management direction recognizing the need to maintain wildlife, fish, and biodiversity values, while integrating management for timber and other resources. Further details regarding objectives and strategies are provided in the Vancouver Island Summary Land Use Plan.

5.3 SMZ 11 Mature Seral Target

The target HLP objective for mature seral forest requires retention of, at minimum, one quarter to one third of the forested area of each SMZ being greater than 80 years of age. The structure of mature seral forest is expected to be more complex than younger, mid-seral forests, and exhibit tree canopy complexity that varies vertically, or horizontally, or both. Although mature forests are precursors to becoming old growth forests, the specific age at which a mature seral forest stand changes to old, cannot truly be tied to one specific age, and is recognized as being dependent on local site features influenced by climate, soils and terrain. Consequently, the mature seral target may include a contribution of old seral forest, particularly from those stands captured in OGMA, or from other constrained areas. In Special Management Zones with a low supply of old seral forest, the requirements will be greater to retain more mature seral forest.

The mature plus old component of SMZ 11 is currently **XX%** (2003 data?).

5.4 OGMA Patch Size Distribution in SMZ 11

The patch size distribution for all OGMA in the White LU is presented in Appendix 3 and demonstrates that a variety of OGMA sizes have been designated. Visual analysis of the size and distribution of OGMA in SMZ 11 indicates a satisfactory range in patch sizes, pattern and distribution.

5.5 SMZ 11 Site Series mapping

Retaining old seral forest at the site series or surrogate level of representation is required in the Schoen-Strathcona SMZ. Until the adjacent Gold Landscape and Upper Nimpkish LU plans are complete, the White LU plan can not definitively address the full SMZ requirement since the SMZ occurs across these three landscape units. However, at a generalized view, the combination of a variety of topographically different OGMA and retention areas across the SMZ should serve as a surrogate indicator of site series representation. Specifically, large patches of riparian old growth conservation, the **four??** large ungulate winter ranges, plus other forested areas from the non-contributing landbase retained in OGMA and the commitment to Variable Retention that will ensure spatially diverse representation of ecosystems throughout the SMZ, seems to indicate that retention of all site series in OGMA will be met.

Recent provision of site series information for TFL 39 allows a more specific review of representation in OGMA within SMZ 11.

6.0 First Nations

The White LU is located within the traditional territory of the Campbell River, Cape Mudge, and Comox First Nations. A map depicting the location of their asserted traditional territories may be viewed at the following Web address:

http://maps.bcgov/apps/cbd/html/Ministry/min_main.jsp

7.0 OGMA Methodology

7.1 Integrating other values in OGMA selection

The White LU contains a broad distribution of old seral forest habitat from which to build on for old growth representation. This includes a variety of forest types such as ecologically suitable old growth forest habitats within the SMZ subject to harvest constraints which accommodate other resource values, ungulate winter ranges, riparian reserve zones and gully complexes, and numerous areas of inoperable, uneconomic and inaccessible forest.

There are 15 Ungulate Winter Ranges (UWRs) found within the White LU. In addition, two WHAs have been proposed for northern goshawk within the LU area. In general, the selection of OGMA has captured a good variety of the different habitat types beneficial to each species, while also securing increased coarse filter ecological representation.

An important part of the OGMA planning exercise was to ensure that these separate components complemented each other. For example, the proposed OGMA have been placed throughout

different sections of the White LU, and while OGMA's are not restricted to one area, they have been concentrated in high productivity riparian ecosystems within the Schoen-Strathcona SMZ. Both large and small OGMA's have been located throughout the LU area, with some OGMA's located on drier south facing slopes (deer winter ranges) while others are located in more productive riparian ecosystems. Larger patches have been selected to provide interior forest conditions favoured by non-edge adapted species. Using this approach with stand level biodiversity measures will increase the likelihood of sustaining ecosystems and viable wildlife populations well distributed across their natural range.

7.2 Assessment and Review

In general, OGMA's were selected on the basis of providing ecological representation while reviewing harvest constraints in an effort to maximize their value for habitat diversity while minimizing timber supply impacts. Further efforts were made to minimize the impact on the timber supply by considering the ecological contribution of old growth areas in the more heavily constrained SMZ.

7.3 Boundary Mapping

OGMA boundaries used natural features wherever possible to ensure they could be located on the ground. OGMA's were also delineated to include complete forest stands (forest cover polygons) wherever possible to reduce operational uncertainty and increase ease of OGMA mapping. OGMA's were mapped using a 1:20,000 scale TRIM base that forms the legal standard for measurement. Procedures for operating within OGMA's are discussed in the OGMA objectives and amendment policy.

7.4 Amendment Policy

The MSRM Coast Region amendment policy gives direction to proponents (forest tenure holders) when modifications to OGMA objectives are required. This Regional policy describes procedures for amending legally established Old Growth Management Areas (OGMA); and serves to guide operations when working in or adjacent to OGMA's. The amendment portion is consistent with Section 4 of the *Forest Practices Code of British Columbia Act*, which allows for the Delegated Decision Maker (DDM) to vary a Landscape Unit objective (i.e. amending the location of an OGMA). This policy applies to the Coast Region, MSRM and may be updated from time to time.

Amendment procedures cover such things as minor or major amendments for resource development (e.g. roads, bridges, boundary issues, rock quarries & gravel pits) or relocation of OGMA's. The policy also discusses acceptable management activities and review procedures. Where specified under a legal landscape unit objective, some commonly occurring forestry operations can be exempted from referral to MSRM. Major

amendment requests, however, cannot be exempted. The MSRM web site for both the amendment policy and the objectives template are located through the link below:

<http://srmwww.gov.bc.ca/cr/resourcegmt/srmp/amendments.htm>

7.5 Mitigation of Timber Supply Impacts

During delineation of OGMA for priority biodiversity provisions, an attempt was made to mitigate the short and long-term impacts on timber supply. OGMA were considered first in the non-contributing forest land base and, where this proved insufficient to meet the old growth target, additional forested areas were selected from the THLB. The impact to the THLB by Biogeoclimatic Unit is described in Table 3 and Appendix 3.

Consideration was also given to credit Weyerhaeuser's commitment to Variable Retention (VR). Weyerhaeuser was given the opportunity to include VR patches that are old growth and greater than two hectares in area as potential OGMA. The incorporation of VR into OGMA reflects a desire to capture the full spatial diversity, both size and ecosystem, across the LU, while also minimizing timber supply impacts. **Should the commitment to 100% of harvesting to VR cease, the licensee will be required to meet the full OGMA target within 6 months of the change in operational direction.** *Check to ensure this is reflected in the objectives* The amount of VR by BEC is described in Table 3.

In addition to the forested area selected as OGMA, it was recognized that there may be additional areas that would be included as OGMA in the future. Weyerhaeuser has committed to including these areas after determining, via field inspection and assessment, that these areas would not be harvested. These areas will become contributory to the OGMA population which will be revised once every five years, or when the licensee's Forest Stewardship Plan is amended or re-submitted.

OGMA were chosen in the oldest available age class first, however, old forest stands that were approved or proposed for harvesting on Forest Development Plans (FDPs) were excluded from candidate OGMA. Weyerhaeuser and MSRM staff reviewed the draft OGMA maps, determining that concentrating all OGMA into just the Special Management Zones was not a viable option.

8.0 OGMA and Wildlife Tree Patch Requirements

8.1 OGMA Targets

The White LU was ranked with an “High” Biodiversity Emphasis Option (BEO) through the biodiversity value ranking process completed earlier (see the *Vancouver Forest Region Landscape Unit Planning Strategy*, 1999). This BEO designation along with the BEC variant determines the percentage of the Crown forest land base that should be designated as OGMA. Table 3 outlines the total amount of OGMA required and tallies the available types of Crown forest (i.e. Non Contributing-NC forest versus Timber Harvesting Land Base)⁵. The old growth target figures in Table 3 are derived from Appendix 2 in the *Landscape Unit Planning Guide*.

Table 4a Old Growth Retention Report for the White LU

White Landscape Unit Summary

Total Landscape Unit Area:	ha
Productive Forest:	ha
Timber Harvesting Landbase Area:	ha
% of LU Available for Harvest:	
% of THLB Harvested:	

BEC	Total Forest	OLD - Non THLB	OLD - THLB	OG Target	NC Balance	THLB Contribution
CWH xm2						
CWH vm 1						
CWH vm 2						
MH mm 1						

BEC	SERAL	Forested	Non-Contributing	THLB Area
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⁵ Non Contributing (NC) forest land does not contribute to the Allowable Annual Cut. The Timber Harvesting Land Base (THLB) is made up of Contributing (C) forests and a portion of the Partially Contributing (PC) forests. Partially Contributing forests are “constrained” due to one of several factors such as unstable soils or wildlife habitat, but are still partially available for harvest. Contributing forest is unconstrained and available for timber harvest.

		Area	Area	%	Area	%
CWH xm2	Early					
	Mid					
	Mature					
	Old					
Total Area						
CWH vm 1	Early					
	Mid					
	Mature					
	Old					
Total Area						
CWH vm 2	Early					
	Mid					
	Mature					
	Old					
Total Area						
CWH mm1	Early					
	Mid					
	Mature					
	Old					
Total Area						
CWH mm2	Early					

Mid
Mature
Old

Total Areas

MH mm 1 Early
Mid
Mature
Old

Total Area

Based on revised operability in TFL 39
Forest Cover updated to XXXXX
Includes all Parks outside of Weyerhaeuser's Tenures

Table 4b Old Seral Contribution for the White LU

Old seral contribution from OGMA, Protected Area and Variable Retention										
BEC Variant	Productive Area	Target %	Target Ha	Total OG Component	Total Mapped OGMA (gross)	Old seral contribution within Protected Areas	OGMA within Productive Forest (net)	Potential VR ha	Surplus /Deficit	OGMA from THLB
CWH xm2										
CWH mm 1										
CWH mm 2										
CWH vm1										
CWH vm 2										
MH mm1										
Total										

8.2 Wildlife Tree Retention Targets

In addition to the initial focus on retention of old growth forests at the landscape level, this plan also proposes to maintain stand structure through retention of wildlife tree patches (WTPs) according to the target defined in Table 4 below. Upon designation of the White LU biodiversity objectives by legal order, the WTP targets specified below will apply, consistent with policy direction and technical application of the Wildlife Tree Tables in Appendix 3 of the Landscape Unit Planning Guide.

Table 5 Wildlife Tree Retention Report for the White LU

Landscape Unit (Total Area)	BEC Subzone	Crown Forested (NC+TH LB)	THLB	% Subzone Available for Harvest	% THLB Harvested	% WTP Retention when LU Objectives Established
White	CWH mm					
	CWH vm					
	CWH xm					
	MH mm 1					
Total						

The VILUP HLP objectives for the SMZ portions of the White LU require that within harvest cutblocks, structural forest attributes and elements with important biodiversity functions should be retained. The pattern and distribution of these attributes can best be determined on site by the prescribing foresters and engineers. Flexibility exists across the two Resource Management Zones to address windthrow issues, maximize wildlife tree conservation opportunities and meet landscape level WTP targets.

8.3 Draft Legal Objectives for the White Landscape Unit

Preamble

The goal of these objectives is to sustain biological diversity at the landscape level; permissible activities are described to streamline administrative procedures and address operational safety concerns.

First Nations traditional use of forest resources, treaty negotiations or settlements will not be limited by the following objectives.

Legal Objectives – White Landscape Unit

Pursuant to Section 4 of the *Forest Practices Code of British Columbia Act*, the following are the landscape unit objectives for the White Landscape Unit.

Objective 1 – Old Growth Management Areas

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached White Landscape Unit map dated XXXXX, 2004. Timber harvesting, including salvage, single tree selection, topping for cone harvesting, and commercial gathering of forest products will not be permitted within OGMAs except as allowed under section 3 below.
2. Recruit additional old growth forest within 20 years to meet the full OGMA target by selecting and maintaining, at minimum, the combined area (hectares) of variable retention⁶ patches greater than 2 hectares in individual size for each biogeoclimatic unit described in the following table.

Biogeoclimatic Unit	Hectares of Variable Retention Required
CWH mm 1	
CWH mm 2	
CWH vm 1	
CWH vm 2	

⁶ This objective is in force only where the licensee has committed to 100% of forest harvesting occurring by Variable Retention (Beese et al. 2003. Maintaining attributes of old-growth forests in coastal B.C. through variable retention. *Forestry Chronicle*, 570-578). Where this commitment is no longer in effect, the number of hectares required to meet the full spatial OGMA target will be identified within six months and located within mapped OGMAs.

CWH xm 2	
MH mm 1	

3. Permissible activities within OGMA's

(a) Minor OGMA boundary adjustments for operational reasons:

To accommodate operational requirements for timber harvesting and road or bridge construction, boundaries of OGMA's that are 10 ha or greater in size may be adjusted, provided that

- i) the boundary adjustment does not affect more than 10 per cent of the area of the OGMA,
- ii) road or bridge construction is required to access resource values beyond or adjacent to the OGMA and no other practicable option for road or bridge location exists,
- iii) suitable OGMA replacement forest of at least equivalent quantity is identified either (in order of priority) directly adjacent to, or in the same variant and landscape unit as the adjusted OGMA, and
- iv) boundary adjustments and OGMA replacements areas are documented, mapped and submitted to the delegated decision maker at the end of each calendar year.

In the case of ii) above, as an alternative to finding replacement area the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.

(b) Other permissible activities:

- i) Timber harvesting to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA's. Salvage within OGMA's will be done in a manner that retains as many old growth forest attributes as possible.
- ii) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- iii) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.
- iv) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by less than 0.5 ha in total.
- v) Intrusions, other than those specified that affect an OGMA by less than 0.5 hectare in total.

OGMA replacement forest is required as a result of activities under i), ii) and iii) above, provided the area affected exceeds 0.5 ha in size.

Replacement forest must be suitable, of at least equivalent quantity and situated (in order of priority), either immediately adjacent to the existing

OGMA, or in the same variant and landscape unit as the existing OGMA. Boundary adjustments and OGMA replacement areas must be documented, mapped and submitted to the delegated decision maker at the end of each calendar year.

Objective 2 – Wildlife Tree Retention

Maintain stand-level structural diversity within harvested cutblocks by retaining wildlife tree patches (WTPs). With the exception of minor salvage cutblocks⁷, each licensee by tenure will ensure that over any five year period, commencing on the date the objectives are established, the target percentages as noted in the following table will be achieved.

Biogeoclimatic Subzone	WTP requirement
CWH mm	
CWH vm	
CWH xm	
MH mm 1	

In addition:

- (1) WTPs must be well distributed across the BEC subzone and should be located within or immediately adjacent to a cutblock.
- (2) No timber harvesting, including single tree selection is to occur within WTPs, except as noted in (3) below
- (3) Salvage of windthrown timber is permitted within WTPs where windthrow impacts 25% to 50% of the dominant or co-dominant stems. Salvage of windthrown timber and harvesting of remaining standing stems is permitted within WTPs where windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, suitable replacement WTP of at least equivalent quantity must be identified immediately to achieve the retention target.
- (4) WTPs must include, if present, remnant old-growth patches and live or dead veteran trees (excluding danger trees).
- (5) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).
- (6) BEC subzones will be determined by site plan information.

⁷ A minor salvage cutblock is defined as less than 2.0 ha of harvesting and/or less than a total volume of 2000 m³ excluding volume harvested from any road clearing width, if the road is required to facilitate the removal of the timber within the minor salvage cutblock.

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Appendix 1. VILUP HLP Order

Order Establishing Resource Management Zones and Resource Management Zone Objectives within the area covered by the Vancouver Island Land Use Plan, pursuant to sections 3(1) and 3(2), as well as section 9.1 of the Forest Practices Code of British Columbia Act (the Act)

- I. ***Pursuant to section 3(1) of the Act, the following zones, as presented on Map 1 (attached), are Resource Management Zones (RMZ):***
 - A. Special Management Zones (SMZ) 1 through 14 and 17 through 22;
 - B. Resource Management Zones 4, 5, 6, 8, 10, 11, 15, 18, 19, 21, 23, 24, 27, 28, 30, 36, 38, 40, 42, 43, 44, and 47; these RMZ are also referred to as Enhanced Forestry Zones (EFZ);
 - C. Resource Management Zones 7 and 14; these two RMZ are also referred to as General Management Zones (GMZ).

- II. **Pursuant to section 3(2) of the Act, the following provisions are Resource Management Zone objectives:**
 - A. ***for Special Management Zones 1 through 14 and 17 through 22:***
 1. Sustain forest ecosystem structure and function in SMZs, by:
 - (a) creating or maintaining stand structures and forest attributes associated with mature⁸ and old⁹ forests, subject to the following:
 - i. the target for mature seral forest should range between one quarter to one third of the forested area of each SMZ¹⁰; and
 - ii. in SMZs where the area of mature forest is currently less than the mature target range referred to in (i) above, the target amount of mature forest must be in place within 50 years;
 - (b) retaining, within cutblocks¹¹, structural forest attributes and elements with important biodiversity functions¹²; and

⁸ The mature seral forest is defined as generally 80 to 120 years old or older, depending on species and site conditions. The structure of mature seral forests generally includes canopies that vary vertically or horizontally, or both. The age and structure of the mature seral stage will vary significantly by forest type and from one biogeoclimatic zone to another.

⁹ The old seral forest is defined as generally greater than 250 years old, containing live and dead (downed and standing) trees of various sizes, including large diameter trees, and of various tree species, including broad-leaved trees. The structure of old seral forest varies significantly by forest type and from one biogeoclimatic zone to another.

¹⁰ Mature seral targets will be established through landscape unit planning. See transition provisions under III.

- (c) applying a variety of silvicultural systems, patch sizes and patch shapes across the zone, subject to a maximum cutblock size of 5 ha if clearcut, clearcut with reserves or seed tree silvicultural systems are applied, and 40 ha if shelterwood, selection or retention silvicultural systems are applied¹³.
2. Despite subsection 1(c) above, cutblocks larger than 5 or 40 ha, as the case may be, may be approved if harvesting is being carried out to recover timber that was damaged by fire, insects, wind or other similar events and wherever possible, the cutblock incorporates structural characteristics of natural disturbances.
 3. Pursuant to section 2(1) of the Operational Planning Regulation (OPR)¹⁴, the approval of both the district manager, Ministry of Forests and the designated environment official, Ministry of Environment, Lands and Parks is required for all forest development plans, or parts of forest development plans that relate to areas within the following SMZs: 1, 3, 4, 6, 8, 9, 10, 11, 13, 17, 19, 20 and 21.

B. *for Special Management Zones 8, and 13, and parts of Special Management Zones 1, 3 and 11, which are located within landscape units with higher biodiversity emphasis, as shown on Map 2:*

Maintain late-successional habitat elements and attributes of biodiversity¹⁵ in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems, by retaining old seral forest at the site series/surrogate level of representation¹⁶.

Retain late-successional habitat elements and attributes of biodiversity in patches of variable size.

C. *or the following Special Management Zones with primary visual resource values: 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, 18, 19 and 22, as shown on Map 3:*

6. Maintain the visual quality of known scenic areas in accordance with the recommended visual quality classes in the visual landscape inventory, until the district manager establishes visual quality objectives for the areas.

D. *for all Enhanced Forestry Zones, as shown on Map 1, save and except the parts of those zones which are designated as community watersheds as defined in section 41(8) of the Act:*

7. To increase the short-term availability of timber,

¹¹ Within cutblocks: generally means non-contiguous with cutblock boundaries.

¹² This includes, but is not limited to snags, wildlife trees, downed logs.

¹³ Maximum cutblock sizes refer to net area to be reforested.

¹⁴ BC Reg. 107/98 O.C. 426/98 - Effective: June 15, 1998.

¹⁵ This includes, but is not limited to: large diameter (> 60 cm) live, decaying and dead standing trees (providing nest and cavity sites); downed wood, including large diameter pieces (50 to 150 cm); deciduous broad-leaved trees, both in riparian and upland areas.

¹⁶ The level of representation of old seral forest will be applied through landscape unit planning.

(a) a cutblock may be larger than 40 ha pursuant to section 11(2)(a) of the OPR; and

(b) pursuant to section 68(4) of the OPR, a cutblock is greened-up if it is adequately stocked and the average height of those trees that are

(i) the tallest tree in each 0.01 ha plot included in a representative sample, and

(ii) a commercially valuable species or other species acceptable to the district manager

is at least 1.3 meters;

unless the district manager determines that a cutblock referred to under (a) or (b) would significantly impact specific hydrological, wildlife, biodiversity, scenic or recreation values.

8. Avoid or mitigate adverse hydrological impacts, which may result from the practices referred to in objective 7, in watersheds with significant watershed sensitivity and significant fisheries values, as determined by the district manager and designated environment official.
9. When proposing the species composition for the purposes of OPR section 39 (3) (o), a person may, pursuant to OPR section 41, select a single species that is ecologically suited to the area, if a mix of species was present on the area before the timber was harvested.
- 9.1 The area that may be subject to selection of a single species pursuant to objective 9 is limited to no more than 20 per cent of the forested area of any variant within a given EFZ.

E. for Resource Management Zones 7 and 11:

10. To avoid severe social and economic consequences, as determined by the district manager and the designated environment official, the full target of 13 per cent for old growth retention in CWHvm1 may be reduced by up to one third provided that ecologically suitable second growth forest is identified to recruit the shortfall¹⁷.

F. for Resource Management Zone 42:

11. Retain old seral forest in CWHvm1 in accordance with the full old seral target of 13 per cent for the variant.
- 11.1 Despite objective 11, up to one third of the old seral target may be recruited from second growth provided that
 - (a) such recruitment is necessary to avoid severe social and economic consequences;
 - (b) such recruitment will not impact the ability to conserve suitable habitat of identified wildlife in accordance with the Identified Wildlife Management Strategy¹⁸; and

¹⁷The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

¹⁸ See “Managing Identified Wildlife: Procedures and Measures”, Volume 1, February 1999.

- (c) ecologically suitable second growth forest is identified to recruit the shortfall.¹⁹

G. for Special Management Zone 10:

- 12. Retain or recruit old growth forest in CWHxm2 in accordance with the full old seral target of 9 per cent for the variant.

H. for Resource Management Zone 10

- 13. Retain old seral forest in CWHxm2 in accordance with the full old seral target of 9 per cent for the variant.
- 13.1 Despite objective 13, up to one third of the old seral target may be recruited from second growth provided that
 - (a) such recruitment is necessary to avoid severe social and economic consequences;
 - (b) such recruitment will not impact the ability to conserve suitable habitat of identified wildlife in accordance with the Identified Wildlife Management Strategy²⁰; and
 - (c) ecologically suitable second growth forest is identified to recruit the shortfall.²¹

I. for Resource Management Zone 30:

- 14. Retain all remaining old growth forest in CWHxm2 until landscape unit objectives for old growth retention or recruitment have been established in accordance with the full old seral target of 9 per cent for the variant.

J. for Resource Management Zones 8, 14, 28 and 43:

- 15. Retain old growth forests to meet old seral targets²² and marbled murrelet habitat requirements²³ in the non-contributing²⁴ land base to the fullest extent possible.
- 16. Beyond retention in the non-contributing land base, retain old forests in the timber harvesting land base, up to the full target amount, if the district manager and the designated environment official determine that such retention is required to maintain critical marbled murrelet habitat²⁵.

III. Transition

¹⁹The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

²⁰ See “Managing Identified Wildlife: Procedures and Measures”, Volume 1, February 1999.

²¹The targets for retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

²² See “Landscape Unit Planning Guide”, March 1999.

²³ See “Managing Identified Wildlife: Procedures and Measures”, Volume 1, February 1999.

²⁴ Non-contributing: the crown forested land base that does not contribute to the annual allowable cut, but does contribute to biodiversity objectives and targets.

²⁵ Retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

17. Pursuant to section 9.1 of the Act, the following objectives will not be implemented in an area until landscape units and objectives have been established for the area, in accordance with section 4 of the Act:

Objectives 1(a); 4; 5; 10; 11; 11.1; 12; 13; 13.1; 15; and 16.

18. In the event that landscape units and objectives are not established in an area within 2 years of the date that this order takes effect, the objectives referred to in paragraph 17 will be implemented in the area.

IV. Filing the Order

This order will be filed with the regional manager of the Vancouver Forest Region and will take effect on December 1, 2000.

Appendix 2. Proposed Legal OGMA Map for the Tsitika Landscape Unit

Appendix 3. Distribution and Attributes of OGMA's within the White Landscape Unit

VILUP Special Management Zone	
Old Growth Management Areas (OGMA's)	Attributes
108, 110, 111, 119, 124, 125, 126, 127-133, 135, 136, 140, 141, 143, 154, 159, 172, 174, 182-185, 190, 193	Riparian values
115, 138, 142	Established Ungulate Winter Range (UWR) with old growth characteristics
172, 173	Established Wildlife Habitat Area (WHA-Goshawk) with old growth characteristics
82-85, 105, 106, 110-113, 120, 150-153, 155-158, 160-164, 169-171, 176-180, 189-191, 193, 195	Allows for effective distribution of OGMA's across the landscape planning unit
123, 124, 126-132, 135-137, 140, 141, 143, 154, 174, 182-185	Provides for target establishment and representation within the CWH vm1 BEC
105-107, 109, 112, 116, 118, 120-122, 125, 157, 158, 160, 165, 169, 171, 176, 179-181, 190-192, 195	Provides for target establishment and representation within the CWH vm2 BEC
81-85, 108-111, 114, 134, 139, 150-153, 155, 156, 158, 161-168, 170, 177-179, 189, 193, 194	Provides for target establishment and representation within the MHmm1 BEC
85, 105, 109, 114, 116, 119, 121, 124-126, 133, 140, 143, 158, 163-165, 169, 170, 176-178, 181, 194	Possible culturally significant values-old growth cedar and cypress
107, 109, 119, 123-125, 133, 135, 136, 138, 141, 143, 150-154, 166-168, 172, 174, 183, 185, 192	Maintains connectivity between OGMAS within the LSU
121, 159	OGMA is part of or adjacent to existing WTP (Wildlife Tree Patch)

VILUP-General Management Zone	
Old Growth Management Areas (OGMA's)	Attributes
3, 13, 17, 21, 23, 24, 28, 29, 35-39, 46, 48, 55, 56, 60, 61, 68, 80, 89, 91,95, 96, 97, 98, 144	Riparian Values
2, 6, 8, 12, 22, 30, 34, 47, 62, 65, 94, 95, 96, 145	Established Ungulate Winter Range (UWR) with old growth characteristics
69	Established Wildlife Habitat Area (WHA-Goshawk) with old growth characteristics
1, 14, 15, 16, 18-20, 25-27, 31, 40-44, 46, 50-53, 58, 73, 76-80, 93, 100, 101, 146-149, 175	Allows for effective distribution of OGMA's across the landscape planning unit
1, 4, 5, 7, 25, 26, 29, 33, 35-39, 48-50, 54-56, 64, 72-74, 90, 91, 97, 98, 102	Provides for target establishment and representation within the CWH vm1 BEC
27, 32, 57, 59, 63, 71, 75, 76, 78, 88, 99, 100, 175, 188, 187, 197	Provides for target establishment and representation within the CWH vm2 BEC
9-11, 13-18, 21, 23, 24, 66, 67	Provides for target establishment and representation within the CWH xm2 BEC
19, 20, 31	Provides for target establishment and representation within the CWH mm1 BEC
40-44	Provides for target establishment and representation within the CWH mm2 BEC
45, 46, 51-53, 58, 70, 76, 77, 79-81, 86, 87, 92, 100, 101, 103, 104, 144, 146-149, 186, 187, 196	Provides for target establishment and representation within the MHmm1 BEC
1, 3, 7, 11, 14, 15, 18, 25-27, 35-37, 42, 45, 81, 93, 103, 104, 147	Possible culturally significant values-old growth cedar and cypress
42, 80, 81, 86, 88-91, 93	Maintains connectivity between OGMAS within the LSU

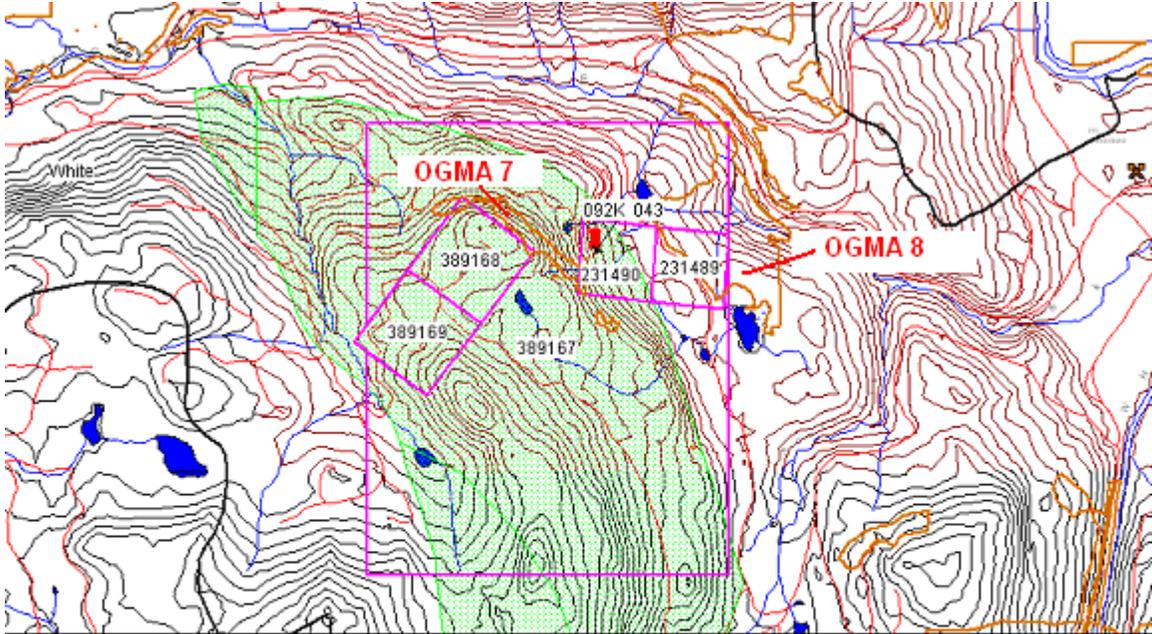
65, 72	OGMA is adjacent and contiguous with existing protected area (PARK)
1, 21, 28, 49, 56, 60, 63, 64, 75, 99, 104	OGMA is part of, or adjacent to existing WTP (Wildlife Tree Patch)

VILUP-Agricultural Zone	
Old Growth Management Areas (OGMA's)	Attributes
10a	Allows for effective distribution of OGMA's across the landscape planning unit
10a	Provides for target establishment and representation within the CWH xm2 BEC

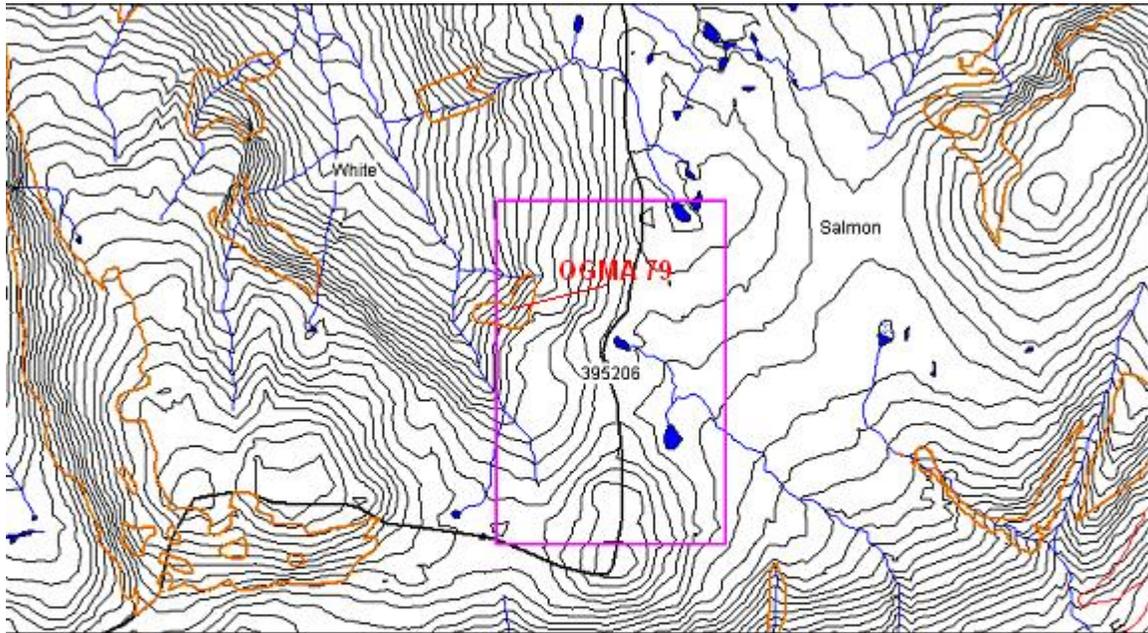
Note* Polygons 138, 142, 143, 183, 184, 195 exist across two zones

Appendix 4 Overlap of OGMA's and Mineral Tenures

OGMA Numbers 7 & 8:



OGMA Number79:



OGMA Number 115:

