

**Richmond Plywood Limited**  
**Sustainable Resource Management Plan**  
**Draft Biodiversity Chapter For The**  
**Tsulquate Landscape Unit**



photo by E. Ralph

**March 31, 2006**

Prepared by:

**Thomas Cole R.P.F.**  
Richmond Plywood Ltd  
Vancouver, BC

**Eric Ralph**  
Abies Forestry Consulting  
Port Hardy, BC

**Tony Pipejohn**  
Coast Spatial Mapping  
Sechelt, BC

# Table of Contents

<b>1.0</b>	<b>Introduction</b> .....	1
<b>2.0</b>	<b>Tsulquate Landscape Unit Description</b> .....	3
2.1	Biophysical Description.....	3
2.2	Summary of land status.....	5
<b>3.0</b>	<b>Key Resource Tenure Holders</b> .....	6
3.1	Forest Tenure Holders.....	6
3.2	Mineral Tenure Holders.....	6
<b>4.0</b>	<b>Significant Resource Values</b> .....	7
4.1	Wildlife, Fish and Biodiversity.....	7
4.2	Timber Resources.....	7
4.3	Private Land.....	9
4.4	Water.....	9
4.5	Recreation.....	9
4.6	Mineral Resources.....	10
<b>5.0</b>	<b>Existing Higher Level Plans</b> .....	12
<b>6.0</b>	<b>First Nations</b> .....	14
<b>7.0</b>	<b>OGMA Selection Methodology</b> .....	13
7.1	Considerations for OGMA Selection.....	13
7.2	Criteria for OGMA Selection.....	14
7.2.1	Supplementary Retained Forest.....	15
7.3	Boundary Mapping.....	16
7.4	Amendment Policy.....	16
7.5	Mitigation of Timber Supply Impacts.....	16
<b>8.0</b>	<b>OGMA Analysis</b> .....	17
<b>9.0</b>	<b>Landscape Unit Plan Objectives</b> .....	19
9.1	Draft Legal Objectives for the Tsulquate Landscape Unit.....	22
9.1.1	Objective 1 - Old Growth Management Areas.....	22
9.1.2	Objective 2 - Wildlife Tree Retention.....	24

## List of Tables

Table 1. Land Status of the Tsulquate Landscape Unit .....	5
Table 2. Crown Forested Land Base Classification in the Tsulquate Landscape Unit.....	5
Table 3. Forest Age Class Distribution within the Tsulquate Landscape Unit.....	8
Table 4 Classification of the Crown Forested Land Base into THLB, OGMAs and IRF.	15
Table 5. Old Growth Management Area Requirements, Tsulquate Landscape Unit. ....	18
Table 6. Wildlife Tree Retention by BEC Subzone in the Tsulquate Landscape Unit.....	20

## List of Figures

Figure 1. Tsulquate Landscape Unit, North Vancouver Island, British Columbia.....	3
Figure 2. Biogeoclimatic Ecosystem Classification of the Tsulquate and Shushartie Watersheds, North Vancouver Island, British Columbia.....	4
Figure 3. Forest Age Class Distribution in the Tsulquate Landscape Unit.....	8
Figure 4. Provincial Parks and Landscape Units, North Vancouver Island, B.C.....	10

## List of Appendix

APPENDIX 1 Proposed Legal OGMA Map .....	23
APPENDIX 2 OGMA Summary and Rationale – Tsulquate LU .....	24
APPENDIX 3 List of Acronyms.....	24
APPENDIX 4. Landscape Unit Planning: Amendments and Operational Procedures for Old Growth Management Areas.....	32
APPENDIX 5. Definitions.....	36
APPENDIX 6. Public Consultation Summary.....	37

# 1.0 Introduction

This report provides background information for the Tsulquate Landscape Unit biodiversity plan and its associated proposed legal objectives. A description of the landscape unit (LU), discussion on significant resource values, and an Old Growth Management Area (OGMA) summary and rationale are provided.

Biological diversity or biodiversity 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’<sup>1</sup>*. British Columbia is the most biologically diverse province in Canada.

Planning for OGMA and Wildlife Tree Patch (WTP) biodiversity values is recognized as a high priority for the province of British Columbia. Landscape unit planning is an important component of the Forest Practices Code of BC Act (FPC) and the Forest and Range Practices Act (FRPA). The authority of the Land Amendment Act enables legal establishment of objectives to address landscape level biodiversity values.

Implementation of this strategic planning initiative is intended to help maintain certain biodiversity values. Managing for biodiversity through retention of old growth forests is considered important not only for wildlife, but can also provide important benefits to ecosystem management, protection of water quality and preservation of other natural resources. Although not all elements of biodiversity can be, or need be, maintained on every hectare, a broad geographic distribution of old growth ecosystems is intended to serve as coarse filter biodiversity management strategy which will help sustain the genetic and functional diversity of native species across their historic ranges. In situations where old growth habitats are conserved for the needs of specifically identified species, the landscape level approach to old growth conservation also serves as a fine filter approach to species management.

In accordance with the direction of government, the North Island Central Coast Forest District has established biodiversity emphasis options (BEOs) for the landscape units in its district. Through a district wide ranking process, the Tsulquate LU was rated as “Intermediate” BEO. This process evaluated end ranked biogeoclimatic and terrain complexity, wildlife, fisheries, timber, recreation and other resource values. The intermediate BEO requires that priority biodiversity provisions be addressed by meeting the minimum specified target levels for old seral forest conservation through the delineation of Old Growth Management Areas and Wildlife Tree Retention (WTR).

---

<sup>1</sup> from BC Ministry of Forests and BC Environment. 1995. Biodiversity Guidebook.

This work was completed by Abies Forestry Consulting (AFC), Richmond Plywood Limited (Richply), and Coast Spatial Geographic Information Technologies. The Forest Investment Account (FIA) provided funding.

It is important to note that there are two primary sources of data used in the preparation of this report. First is the Ministry of Forests Landscape Unit Data Base (LUDB), which was used to obtain the target amount of hectares for OGMA's by BEC. Second is the Timber Supply Review 2 (TSR2) file, which is linked to the old Forest Cover data and was used in all the calculation for the amount of area regarding the Timber Harvesting Land Base (THLB), the age class distribution of the LU, and the OGMA calculations. There is a third data source, the Vegetation Resources Inventory (VRI), which is an update to the Forest Cover inventory, was used as a guide in cleaning up the polygon boundaries of the proposed OGMA's. There are only minor inconsistencies between these three data sources so it was decided that only the TSR2 files would be used for GIS analysis to avoid confusion. The source of the numbers and Tables used in this report will be identified using the appropriate abbreviation. There are also blanks in some of the Tables, these are polygons within the different data sets that do not have all required attributes to classify them into appropriate group, but have some of the forested labels. As a non government entity, we do not have the authority to change the inventory data, so they have been left as is. These blanks do not make up a significant number, but have been included to eliminate any gaps in the Tables.

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](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>

**the associated 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.**

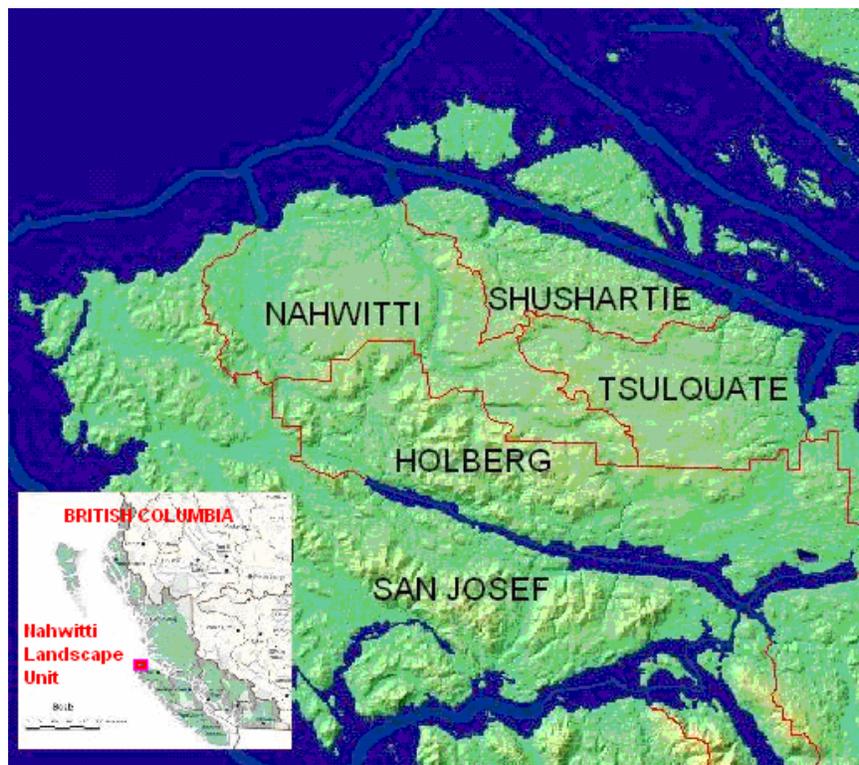
<http://srmwww.gov.bc.ca/rmd/srmp/doc/SRMPI-May1-Final-Web1.pdf>

## 2.0 Tsulquate Landscape Unit Description

### 2.1 Biophysical Description

The Tsulquate LU is situated on the northeast central tip of Vancouver Island (Figure 1).

The landscape unit covers a total area of 20,958 ha (source LUDB). It includes the District of Port Hardy and the Tsulquate River, which is a Community Watershed. There are three other main drainages, the Glen Lyon River, Dick Booth Creek and Songhees Creek. The majority of harvesting has occurred within the District boundary and adjacent to the westerly boundary of the District. This harvested area includes the front end of the Tsulquate, Glen Lyon and Dick Booth drainages. The Landscape also included a portion of the Quatse River estuary and of first three kilometres of the drainage. Of the total landscape unit area, 19,032 (91%) is classified as productive Crown forested land base. The remaining 1,926 ha (9%) are predominantly non productive cedar-pine bogs forests and other features (water bodies, private lands etc.) and have been excluded from any OGMA contributions and calculations. Approximately 3,969 ha, or one fifth of the forested area is considered to be Timber Harvesting Land Base (THLB prior to OGMA delineation<sup>2</sup>). The extensive pine-cedar-cypress bog forests and wetlands are a very distinctive landscape feature and cover the majority of the western and central portion of the Landscape Unit.

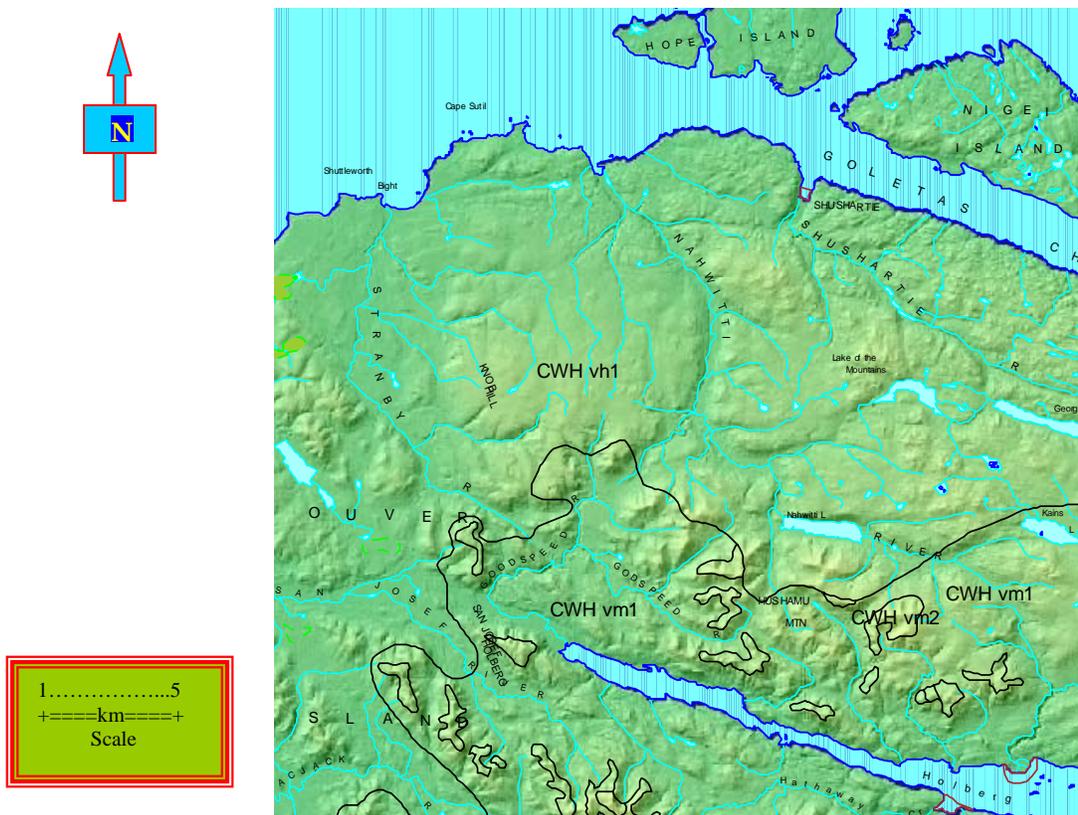


**Figure 1. Tsulquate Landscape Unit, North Vancouver Island, British Columbia**

<sup>2</sup> THLB prior to OGMA delineation is defined as P+C (see Appendix 8)

The Tsulquate Landscape Unit lies in the Western Vancouver Island Ecoregion and the Nahwitti Lowlands Ecosession. Based on Biogeoclimatic Ecosystem Classification (BEC), the biogeoclimatic classification for the Tsulquate Landscape Unit is the Coastal Western Hemlock Zone (CWH).

There are two BEC subzone variants in the Tsulquate LU (Figure 2) consisting of the submontane very wet maritime variant (CWH vm1) and the hypermaritime very wet maritime variant (CWH vh1). Montane forest ecosystems are not present in the Tsulquate LU. One natural disturbance type (NDT1)<sup>3</sup> is dominant, representing mixed conifer, old growth forest ecosystems with uneven-aged stands. Natural regeneration typically occurs after the death of individual trees, or small patches of trees. Some unclassified NDT3 may be present where periodic catastrophic wind disturbances affect larger stands of trees.



**Figure 2. Biogeoclimatic Ecosystem Classification of the Stranby, Tsulquate and Shushartie Watersheds, North Vancouver Island, British Columbia**

<sup>3</sup> NDT1 encompasses those ecosystems with rare stand-initiating events. NDT2 includes ecosystems with infrequent stand initiating events such as fire. For a more complete description of NDTs see the *Biodiversity Guidebook* (1995).

## 2.2 Summary of Land Status

**Table 1. Land Status of the Tsulquate Landscape Unit (source TSR2)**

<b>Code and Ownership Class</b>	<b>Total Area (ha)</b>	<b>Total of LU (%)</b>
40-N Private Crown Grant	1,158.7	5.5
52-N Indian Reserve	63.3	0.3
62-C Kingcome TSA	14,414.8	68.7
69-C Government Reserve: Contributory	5,267.4	25.1
69-N Government Reserve: Non-Contributory	61.6	0.3
76-N Crown and Private TFL	13.3	0.1
Blank	6.5	0.0
<b>Total</b>	<b>20,985.6</b>	<b>100 %</b>

**Table 2. Crown Forested Land Base Classification in the Tsulquate Landscape Unit (source TSR2)**

<b>BEC Unit</b>	<b>Total Area (ha)</b>	<b>Crown Forested Land Base (ha)</b>	<b>Crown Forested Land Base<sup>1</sup></b>			<b>Excluded Land Base<sup>2</sup></b>
			<b>C</b>	<b>P</b>	<b>N</b>	
CWH vh1	8,826	8,272	1,247	34	6,991	554
CWH vm1	12,019	10,704	3,214	69	7,420	1,316
Blank	140	34	24		10	7
<b>Total</b>	<b>20,985</b>	<b>19,009</b>	<b>4,485</b>	<b>103</b>	<b>14,421</b>	<b>1,877</b>

<sup>1</sup> The Crown forested land base is comprised of Contributing (C), Partially Contributing (P), and Non-Contributing (N) forests. C and P forests make up the Timber Harvesting Land Base (THLB prior to OGMA delineation). N forest lands do not contribute to the Allowable Annual Cut (AAC).

<sup>2</sup> Excluded land base (X) is area excluded from contributing to old forest and wildlife tree targets, such as non-Crown, non-forest, and non-productive forest.

## **3.0 Key Resource Tenure Holders**

Resource tenures were identified in the planning process. This assessment included identification of tenures that are administered by agencies such as the Ministry of Forests (MoF), Ministry of Energy and Mines and the Ministry of Agriculture and Lands. In the case of tenure holders, other than those administered by the MoF, the general management intent is to avoid placement of OGMA's within existing tenures. As for tenures administered by the MoF, the management intent is to avoid placement of OGMA's over cutblocks and road locations that have received approval status; and to minimize OGMA placement in areas that are identified as future harvest opportunities by licensees.

### **3.1 Forest Tenure Holders**

Within the plan area there are only volume-based tenures. Volume based tenure includes Richmond Plywood's Forest Licence (A19243) and British Columbia Timber Sales (BCTS).

The OGMA's selected do not impact any known approved category "A" cutblocks or roads as approved under an FDP. Furthermore, BC Timber Sales and Richply staffs were consulted to ensure that the intent of the LUP was conveyed and that impacts on future planned development would be minimized.

### **3.2 Mineral Tenure Holders**

There are nine active mineral tenures are located in the LU.

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 Wildlife, Fish and Biodiversity

Wildlife resources of primary management concern in the Tsulquate LU include black tailed deer, black bear and wolves. Marbled murrelets (mamu) *Branchyramphus marmoratus* and northern goshawks (nogo) *Accipiter gentilis laingi* are the primary species at risk that are considered “Identified Wildlife”<sup>4</sup>. Many other species occur including forest birds, raptors, small mammals, amphibians and furbearers, but their habitat requirements are generally managed within habitat provisions for primary species.

There are significant salmon and steelhead runs in the Quatse Rivers. Since there are no suitable OGMA areas within the portion of the Quatse drainage contained in the Landscape Unit, none were proposed. There are minor runs of salmon in the other drainages within the LU, but due to natural obstacles, only the front portions of these drainages are utilized by salmon. Riparian reserve zones established (as per the Forest Practices Code) and management practises implemented under the Forest and Range Practices Act adjacent to these fish streams and within the Community Watershed will also help maintain fish and wildlife habitat.

There are no proposed Wildlife Habitat Areas (WHAs) in the Tsulquate Landscape Unit.

There are no Ungulate Winter Ranges proposed for the Tsulquate Landscape Unit.

### 4.2 Timber Resources

The Tsulquate LU contains an estimated 3,969 ha (source LUDB) of timber harvesting land base (THLB) representing only 21% of the landscape unit. Past harvesting has generally occurred along the lower Quatse, Tsulquate, Glen Lyon and Dick Booth drainages. Future harvesting is proposed along all of these drainages as well as portions of the Landscape Unit that drain directly into the ocean. Some of the current harvest proposals are within stands not included in the THLB. Given the current market value for western red cedar and the relatively low operating cost in these relatively accessible areas, this trend may increase over time. Consideration was given to not proposing OGMAs in many of the marginally productive areas that may be operable in the future.

The primary tree species in the Tsulquate LU include Western Red Cedar (*Thuja plicata*), Western Hemlock (*Tsuga heterophylla*), Shore Pine (*Pinus contorta*), Amabilis Fir (*Abies amabilis*), Sitka Spruce (*Picea sitchensis*), Yellow Cedar (*Chamaecyparis nootkatensis*), and Red Alder (*Alnus rubra*). Based on forest cover information, Table 3 and Figure 3 show the age

---

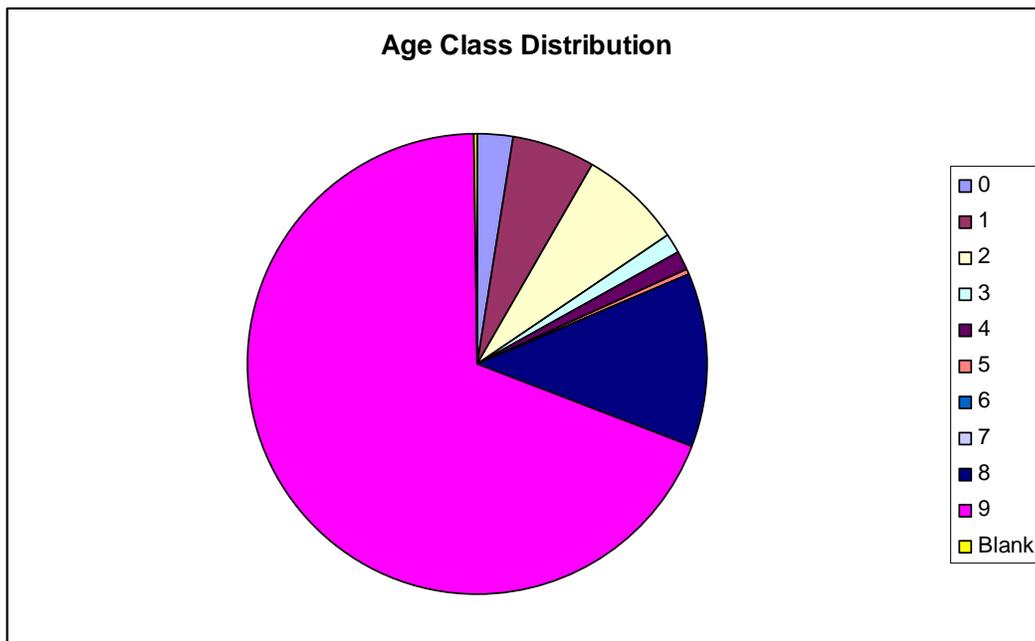
<sup>4</sup> *Identified Wildlife Management Strategy (2004)* includes a list of 34 wildlife species and subspecies and 2 plant species that are considered to be at risk. These species require special management of critical habitat to maintain or restore populations or distributions. Critical habitat is protected within Wildlife Habitat Areas. See the *Identified Wildlife Management Strategy Version 2004* for more information.

composition of all forests in the Tsulquate. Old growth forest (72.1%) and mature forest (11.8%) constitute nearly 84% of the forested area. Approximately 41% (source LUDB) of the forested area has been harvested to date.

Forest management activities occur throughout all phases of forest development. Operational work includes pre-harvest planning, harvesting and stand regeneration. Post harvest activities include planting, brushing, juvenile spacing, pruning and thinning.

**Table 3. Forest Age Class distribution within the Tsulquate Landscape Unit**

AGE CLASS (yrs)	Total Area (ha)	%
0	501.5	2.4%
1 1-20	1,221.3	5.8%
2 21-40	1,570.7	7.5%
3 41-60	285.8	1.4%
4 61-80	290.4	1.4%
5 81-100	19.0	0.1%
6 101-120	2.1	0.0%
7 121-140	19.6	0.1%
8 141-250	2,574.5	12.3%
9 250+	14,454.2	68.9%
Blank	46.7	0.2%
<b>Total</b>	<b>20,985.6</b>	<b>100.0%</b>



**Figure 3. Forest Age Class Distribution within the Tsulquate Landscape Unit**

### **4.3 Private Land**

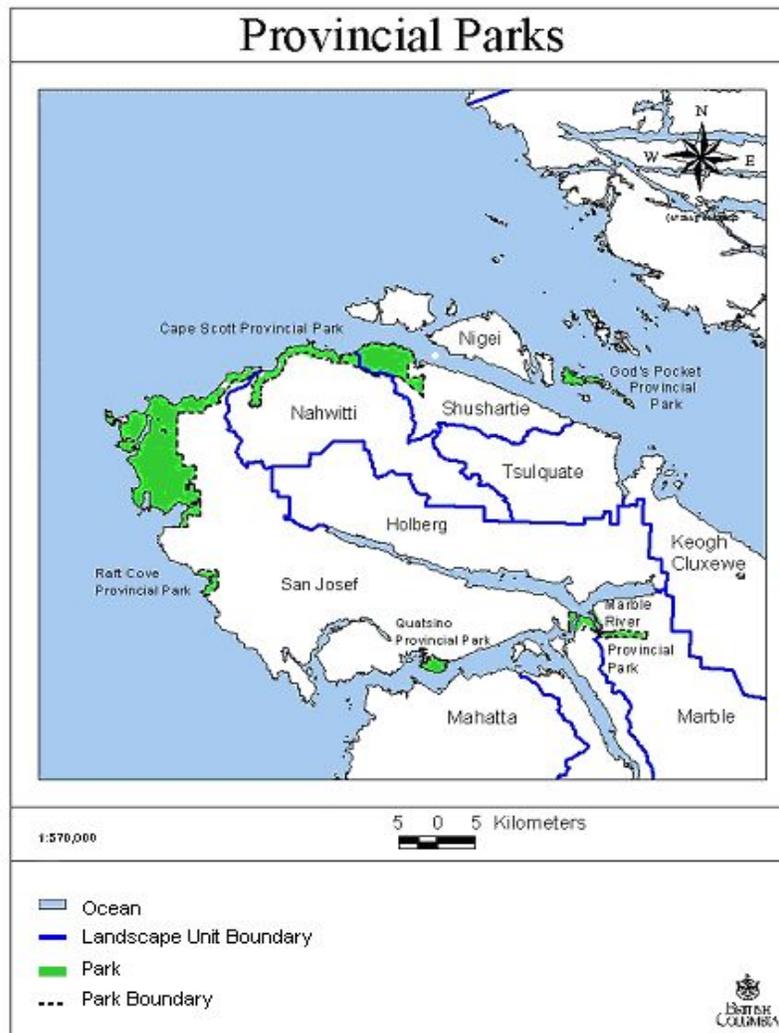
There are several small parcels of private land and the District of Port Hardy within the Tsulquate LU, comprising just over 1,200 ha. (See Table 1). No OGMAs are proposed within these areas.

### **4.4 Water**

The Tsulquate River drainage is the Port Hardy Community Watersheds. There are several OGMAs proposed within this area and any future development will be conducted under the requirements of the legislation governing Community Watersheds. There are also Water Licences issued for Georgie Lake, the Quatse River and Dick Booth Creek. The establishment of OGMAs should not interfere with these Licences.

### **4.5 Recreation**

The primary recreational uses of the Tsulquate LU are fishing, hunting and hiking accessed by existing logging roads and the ocean. Kayaking along Hardy Bay and westward to past Duval Point is also becoming increasingly popular. The Hardy Bay, Duval Point area is used extensively by recreational fishermen in the summer months. Duval Point Fishing Lodge is also located within the Landscape Unit. There is a North Coast Trail currently under construction through the Landscape Unit that will connect the existing San Jose park trails to Port Hardy. This LUP does not conflict with this proposal. The large lakes within the LU are also used for recreation, particularly Geogrie Lake, Kairns Lake and Lake of the Mountains. These lakes have several small recreation reserves on them and some of the reserves have been included in OGMAs.



**Figure 4 Provincial Parks and Landscape Units, North Vancouver Island, B.C.**

#### **4.6 Mineral Resources**

Currently, there are **?????** documented mineral occurrences in the Tsulquate landscape unit consisting of **????** showings and **?????** prospects. For the **?????** Assessment Reports submitted, the expenditures represent **???????** dollars.

## 5.0 Existing Higher level Plans

The Tsulquate Landscape Unit is within the Nahwitti -Tsulquate Resource Management Zone 3 as defined in the Vancouver Island Land Use Plan. The Management Objectives and Strategies for RMZ 3 are as follows:

### **RMZ-3: Nahwitti -Tsulquate**

**Location:** Lowland area, often poorly drained; comprising Stranby, Nahwitti, Tsulquate and lower Quatse watersheds with tributaries

**Total Area:** approximately 52,300 ha

**Zone Category and Overall Management Direction:** *General Management Zone*, with an emphasis on maintaining the fish/wildlife and recreational/tourism values associated with the major riparian systems; maintenance of community watershed integrity

### **Forest Objectives and Strategies**

#### **Access:**

**Objective:** *General Access Management*

#### **Biodiversity**

**Description:** this zone is comprised by two landscape units: the Nahwitti and Tsulquate. CWH vh1 is the main variant; the eastern portion of the area is part of the CWHvm1 variant within the Nahwitti Lowlands ecosection which is underrepresented in protected areas; high fish, elk, marbled murrelet values

**Objective:** *General Biodiversity Conservation Management*

#### **Community Water:**

**Description:** large area extending from Kains Lake along Tsulquate River is designated as a community watershed (Port Hardy)

**Objectives:** *Community Watershed Management*

#### **Cultural Heritage Resources:**

**Description:** known archaeological sites in Fort Rupert area

**Objective:** *General Cultural Heritage Resource Management*

#### **Cave/Karst:**

**Description:** karst features south of Kains Lake

**Objective:** *General Cave/Karst Management*

#### **Fish**

**Description:** high fish values, particularly associated with Tsulquate and lower Stranby riparian systems (steelhead, salmon)

**Objective:** *General Fish Management*

**Recreation Resources:**

Description: significant recreational values associated with Stranby, Nahwitti and Quatse Rivers, as well as Lake of the Mountains, Nahwitti, Georgie and Kains Lakes; proposed North Coast Trail; extensive unroaded area between Nahwitti and Stranby Rivers

Objective: *General Recreation Resource Management*

**Timber:**

Description: uplands of generally poor productivity; only a small fraction of the forested area is classified as operable, mainly along Stranby, Nahwitti Rivers and around lakes

Objective: *General Timber Resource Management*

**Tourism Resources:**

Description: areas in vicinity of lakes and rivers exhibit high capability for tourism (backcountry, as well as facility oriented)

Objective: *General Tourism Management*

**Visual Resources**

Description: visually sensitive areas mainly associated with lakes (Nahwitti, Georgie, Kains Lake)

Objective: *General Visual Resource Management*

**Water:**

Description: due to mostly gentle terrain and limited development history, there is generally high hydrological integrity; large area extending from Kains Lake along Tsulquate River is designated as the Port Hardy community watershed; known risk of flooding in lower Quatse (vicinity of Port Hardy).

Objectives: *General Watershed Management*

**Wildlife:**

Description: intermediate to high wildlife values, particularly Roosevelt elk ungulate winter range and marbled murrelet nesting habitat associated with river and lake systems; complex wetland ecosystems and old red cedar in Fort Rupert area; (unselected Protected Area Strategy Goal 2 Area)

Objective: *General Wildlife Management*

Strategies: maintain elk winter ranges and marbled murrelet wildlife habitat areas in association with riparian management areas along rivers and lakes

**Non-Forest Resource Descriptions****Aquaculture:**

Description: significant values for freshwater finfish culture

**Mineral Resources:**

Description: generally moderately high metallic mineral potential and high industrial mineral potential with mineral tenures present.

## **6.0 First Nations**

The Tsulquate LU is located within the traditional territories of the Kwakiutl First Nations. Cultural heritage resource information is not readily available for the Tsulquate LU. Consultation with the First Nations will continue to identify and locate important spiritual and cultural areas in forestry operations. An Archaeological Resource Overview was prepared for the North Island Central Coast Forest District that identified a moderate potential rating for the presence of archaeological sites.

### **6.1 Kwakiutl**

The Kwakiutl territory includes the Shushartie, Tsulquate, Keogh and Cluxewe as well as part of Nigei Island and Malcolm Island.

## **7.0 OGMA Selection Methodology**

### **7.1 Considerations for OGMA Selection**

Although the Tsulquate Landscape Unit contains a large distribution of old seral forest habitat, much of the area is over-represented by cedar-pine-bog forests and other forest sites with low site productivity and economic value. This distribution draws attention to the remaining forest on which to select from for ecosystem management. This includes existing forested areas and features such riparian reserve zones required under the Forest Practices Code, plus numerous areas of inoperable, marginally economic and inaccessible forest. .

An important part of the OGMA planning exercise was to ensure that these separate components complemented each other. For example, the proposed OGMAs have been placed throughout different sections of the Tsulquate LU and not concentrated in one area. In addition, some OGMAs were placed within or adjacent to areas that are highly constrained from harvesting to increase patch size. Some OGMAs are located along drainages and provide suitable habitat potential for marbled murrelet nesting. Many OGMAs are of sufficient size to provide undisturbed interior forest conditions. Using this approach in addition to stand level biodiversity measures will increase the likelihood of sustaining ecosystems and viable wildlife populations well distributed across their natural range. In addition, Wildlife Habitat Areas that are established in the future may also improve upon ecosystem integrity. Other features, such as riparian reserve zones, will maintain connectivity.

Stand level biodiversity measures together with landscape level OGMA and Incidentally Retained Forest (see Section 7.2.1) is a precautionary approach to management of biodiversity and ecological values.

## 7.2 Criteria for OGMA selection

OGMAs were selected on the basis of providing for the conservation of biodiversity as well as to mitigate short and long-term LU planning impacts on timber supply. Specifically, OGMAs were selected based on a review of stand attributes in an effort to maximize their biodiversity value while minimizing timber supply impacts. A mapping approach guided strictly by age class selection or Allowable Annual Cut (AAC) contribution could result in the inclusion of stands of significant timber supply impact yet unexceptional biodiversity value. Individual forested stands were assessed according to their specific attributes during the OGMA delineation process. Specific rationale for the selection of each OGMA is shown in Appendix 1.

Potential marbled murrelet habitat was ranked by a qualified habitat surveyor such that key marbled murrelet habitat features could be selected for inclusion within OGMAs. Scoring was based on the frequency and abundance of key habitat features, such as tall trees, large canopy gaps, and the presence of moss covered limbs. Given the low amount of suitable marbled murrelet habitat in the Tsulquatie LU, all habitat (100%) that was ranked 3 or better has been included in the proposed OGMAs.

In addition to including areas with specific habitat requirements, other factors, such as patch size, distribution and connectivity were considered during OGMA delineation. Specific efforts were made to ensure OGMAs were distributed throughout the LU and not concentrated in a particular drainage.

Although ecosystem connectivity is not a priority objective in current biodiversity planning (see *Landscape Unit Planning Guide*), it was, however, considered as one of several ecological attributes during the OGMA delineation process.

To mitigate impacts on the timber supply, Richply and BCTS engineers identified areas with harvest opportunity, for present and future conditions. The area beyond what was identified as physically harvestable was often combined with the non-contributing landbase and used to satisfy old growth targets.

Detailed air photo and satellite imagery was used to aid in the selection of stands with appropriate forest cover attributes. All stands have been field checked, via low-level helicopter survey, to verify the presence of desirable old seral characteristics.

## 7.2.1 Supplementary Retained Forest

An understated fact of the landscape unit planning process is the recognition that there is often a very significant amount of additionally retained forest that is also conserved from harvest beyond the scope of the landscape unit OGMA designation process. Much of the Supplementary Retained Forest (SRF) is recognized in timber supply reviews as not contributing to the timber supply, but also includes areas not yet spatially accounted for as “non-contributing”. The term SRF refers to the total area of forest retained, or conserved, outside of the to the budgeted landscape unit planning process.

SRF can be identified as part of the forest cover database (i.e. sensitive terrain, riparian management areas, forested wetlands, pine bog forests, inaccessible forest, etc) and has biological, ecological and hydrological values that contribute to the overall maintenance of biodiversity and habitat. It provides a diversity of ecosystems that provides ecosystem connectivity, increased patch size around OGMAs, reduces edge effect and contributes to providing forest interior conditions. SRF areas may be of low-to-no economic merchantability or may be merchantable forest constrained in some manner whereby it is highly unlikely that it will be impacted by future harvesting activities. Although the SRF has no legal protection under the objectives of this landscape unit plan, SRF does contribute to the conservation of old growth and biodiversity.

Future harvesting may occur within portions of the SRF if economic conditions improve or harvesting technology allows previously inaccessible areas to become available for inclusion in the timber harvesting land base. The following land base determination in Table 4 is included to demonstrate how the land base is accounted for and how conceptually the total forest in landscape unit is delineated as one of three classifications: 1) OGMA, 2) SRF and 3) 100% Contributing Timber Harvesting Land Base (100%C-THLB<sup>5</sup>).

**Table 4. Classification of the Crown forested land base into THLB, OGMAs and SRF**

<b>BEC Unit</b>	<b>CFLB (ha)</b>	<b>100%C- THLB (ha)</b>	<b>OGMA (ha)</b>	<b>Old seral from park (ha)</b>	<b>SRF (ha) outside park</b>	<b>SRF + OGMA</b>
CWH vh1	8,271	1,247	1,337	0	6,141	7,478
CWH vm1	10,704	3,214	1,555	0	5,720	7,275
Blank	34	24			6	6
Total	19,009	5,321	2,892	0	11,867	14,759

<sup>5</sup> 100%C-THLB accounts for land base that is 100% available for timber harvesting and is spatially identifiable.

## **7.3 Boundary Mapping**

OGMA boundaries were delineated using aerial photos, satellite images and TRIM-based mapping to ensure they could be located on the ground. Potential OGMA's were initially delineated onto airphotos with Omnichrome pencil and then transferred manually to GIS-based mapping using the satellite images and TRIM-based maps. This produces a map with OGMA boundaries that can be accurately located with GPS in the field and can be referred to on airphotos in the future to avoid boundary conflicts.

Satellite images, aerial photography and reconnaissance flights (February 2005) were chiefly used as aids in the OGMA designation process. Structural attributes of forest stands were assessed to determine their adequacy for OGMA delineation, rather than simply relying on forest cover information alone.

## **7.4 Amendment Policy**

A former Ministry of Sustainable Resource Management's Coast Region LU amendment policy has been developed and approved to give direction to proponents (forest tenure holders) when applying for amendments to OGMA legal objectives. Amendment procedures will 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 and forms an integral part of this LU plan. The following URL provides a link to the MSRM/MAL amendment policy.

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

## **7.5 Mitigation of Timber Supply Impacts**

During delineation of OGMA's a major strategy involved avoiding short and long-term impacts on timber supply. Throughout the Landscape Unit, OGMA's were located to avoid THLB while ensuring suitable old growth representation was achieved. Careful consideration was made to ensure that timber access was not cut off by OGMA delineation. In general, roads were left out of OGMA's and OGMA boundaries were delineated to simplify adjacent management. In some situations, it was realized that future road access through a few OGMA's may be required, but the exact locations are not yet known.

OGMA's were delineated in the non-contributing forest landbase, according to photo interpretation as opposed to forest cover polygon definitions. Specifically, where compatible with biodiversity objectives, management zones, riparian reserve zones, lower productivity sites, areas of difficult access, marginal economics and stands with specific wildlife habitat values were included as OGMA's.

Although OGMA's were delineated within the oldest available age class, old forest stands that were approved or proposed for harvesting on Forest Development Plans (FDP) were excluded from candidate OGMA's following the direction outlined in the *Landscape Unit Planning Guide*.

## 8.0 OGMA Analysis

The Tsulquate LU was ranked as an Intermediate Biodiversity Emphasis Option through the biodiversity value ranking process completed earlier<sup>6</sup>. This Intermediate designation along with the BEC variant determines the percentage of the Crown forested land base that will be designated as OGMA. Table 5 outlines the total amount of OGMA required in each variant and from which Crown forest category (i.e. Non Contributing-NC or Timber Harvesting Land Base)<sup>7</sup>. The old growth target figures in Table 5 are derived from Appendix 2 in the *Landscape Unit Planning Guide*. The location of proposed OGMAs is shown in Appendix 1. A rationale for OGMA designation for the Tsulquate LU is provided within Appendix 2.

To address the marbled murrelet habitat management concerns, the forested area of the Landscape Unit was scored according to the frequency of key habitat potential nesting features and quality. Initial analysis indicates that over two thirds (100%) of the existing ranked marbled murrelet habitat that scored a value equal to 3 (rated as likelihood of nesting being moderate) was captured in OGMA.

Due to the fact that Riparian Reserve Zones (RRZs) are not spatially represented in the Timber Supply Review 2 (TSR2) and Vegetation Resource Inventory (VRI) data files, the amount of THLB within the proposed OGMAs is overstated. Calculations for impacts due to RRZs for the Kingcome Timber Supply Area Review were calculated non-spatially. This may be accurate over a TSA, but misrepresents quantifiable impacts at the landscape level. To accurately portray the amount of THLB would require spatial designations for reductions in the inventory data. At present there are no plans to complete this process and it is therefore conceivable that a substantial amount of the THLB area presently within the proposed OGMAs could be constrained by RRZs, thus reducing THLB impacts.

---

<sup>6</sup> See the *Vancouver Forest Region Landscape Unit Planning Strategy 1999*

<sup>7</sup> 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 (P) 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.

**Table 5. Old Growth Management Area Requirements, Tsulquate Landscape Unit.**

(Source LUDB & TSR2)

BEC Variant <sup>1</sup> & Natural Disturbance Type 1	Old Growth Target <sup>2</sup>		Established OGMAs <sup>3</sup>	Old Seral Contribution from Park <sup>4</sup> (NC)	OGMAs in Contributing forest (C)	Surplus or Deficit
	%	ha				
<b>CWHvh1</b>	>13	1,075	1,182	0	112	+107
<b>CWHvm1</b>	>13	1,399	1,460	0	186	+ 61
<b>Total</b>	-	2,474	2,642	0	298	+168

Note: Differences in totals are due to rounding and inaccurate forest cover (see Section 7.3)

<sup>1</sup> **BEC Variant** CWHvh1: Coastal Western Hemlock biogeoclimatic zone, hypermaritime very wet maritime variant; CWHvm1: Coastal Western Hemlock biogeoclimatic zone, submontane very wet maritime variant; **NDT** = Natural Disturbance Type. Refer to LUPG, Appendix 2.

<sup>2</sup> **Old Growth Target:** % of total productive forest area within BEC unit, as per LUPG.

<sup>3</sup> **Established OGMA:** Achievement of portion of LUPG Old Seral Target in present plan as mapped OGMA.

<sup>4</sup> Park contribution towards meeting old seral target.

**Table 6. Wildlife Tree Retention Report for the Tsulquate LU**

(source LUDB and TSR2)

Landscape Unit Area (ha)	BEC Subzone (ha)	Crown Forest (ha)	THLB	% Subzone Available. For Harvest	% THLB Harvested	% Wildlife Tree Retention
		NC+THLB				
8,826	CWH vh1	8,270	1,104	12.5	40.9	2
12,020	CWH vm1	10,762	2,866	26.6	40.9	4
<b>Total</b> 20,846		19,032	3,970			

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 targets defined in Table 6 above. Upon designation of the Tsulquate LU by legal order, the required WTP target for the CHW vh1 is 2% and 4% for the CHW vm1, respectively. The retention of structural forest attributes and elements with important biodiversity functions can best be determined on site by the prescribing foresters and engineers.

## **9.0 Landscape Unit Plan Objectives**

The updated Tsulquate Landscape Unit boundary and the landscape unit objectives will be legally established under the authority of the Land Act and as such will become Higher Level Plan objectives. Other operational plans must be consistent with these objectives. Establishment of landscape units and objectives will not limit First Nations treaty negotiations, settlements or traditional use of forest resources. The legal objectives for each landscape unit are attached to the *Order to Establish a Landscape Unit and Objectives*.

As outlined in the Landscape Unit Planning Guide, ‘priority’ biodiversity planning consists of retention of stand structure through Wildlife Tree Retention (WTR) and representative old growth forest through the establishment of Old Growth Management Areas (OGMAs).

OGMA and WTR Landscape Unit objectives apply only to Provincial forest lands. While park and Crown forest lands outside of Provincial may contribute to old seral representation, LU Objectives do not apply to these areas.

This landscape unit plan does not supersede the regulatory authority of statutes of other regulatory agencies, nor the legislated rights of valid existing crown tenure or private land that is not part of any tenure agreement with the Crown.

### **9.1 Draft Legal Objectives for the Tsulquate 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 –Tsulquate Landscape Unit***

Pursuant to Section 93.4 of the *Land Act*, the following are the landscape unit objectives for the Tsulquate Landscape Unit.

### 9.1.1 Objective 1 – Old Growth Management Areas

1. Maintenance or recruitment of old growth forests

Maintain or recruit old growth forests in established Old Growth Management Areas (OGMAs), as shown on the attached Tsulquate Landscape Unit map, dated **January 18, 2006**, subject to section 2 below and subject to meeting the total old seral requirements specified in Table A.

2. Permissible activities within OGMAs

(a) Minor OGMA boundary adjustments for operational reasons:

To accommodate operational requirements for timber harvesting and road or bridge construction, OGMAs that are 10 ha or greater in size may have boundaries adjusted, provided that

- i) the boundary adjustment does not affect more than 10 per cent of the area of the OGMA, or
- 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, and
- iii) suitable OGMA replacement forest of equivalent age, structure and area is identified either (in order of priority) directly adjacent to or in the same variant and landscape unit as the adjusted OGMA. 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.

Table A: Tsulquate LU Old Seral Minimum Requirements.

<b>BEC Unit</b>	<b>Old Seral Target (ha)</b>
CWHvh1	1,075.2
CWHvm1	1,399.0
<b>Total</b>	<b>2,474.2</b>

(b) Other permissible activities

- i) Topping or pruning of trees along the boundary to improve wind firmness.

- ii) Timber harvesting to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA. Salvage within OGMA will be done in a manner that retains as many old growth forest attributes as possible.
- iii) Road maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- iv) Felling of guyline clearance, tailhold anchor trees, or danger trees along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.
- v) 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.
- vi) Small boundary adjustments for operational reasons, or intrusions, other than those specified above, that result in a net loss to the OGMA of less than or equal to 0.5 ha.

OGMA replacement forest is required as a result of the activities in 2 (b) above if the total net change to the OGMA exceeds 0.5 ha in size and the total area of mature and old seral forest maintained in OGMA plus the contributing old seral forest area in protected areas is reduced below the minimum target area outlined in Table A. Replacement forest must be biologically suitable, of equivalent age, structure and area, 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.

### 9.2.2 Objective 2 – Wildlife Tree Retention

Maintain stand-level structural diversity, by retaining wildlife tree patches (WTPs). The holder of an agreement under the Forest Act, except a woodlot licence agreement, who completes harvesting in one or more cutblocks, except minor salvage cutblocks<sup>8</sup>, located within the LU during any 60 month period beginning on January 1 of any calendar year following the establishment of this objective, must ensure that, at the end of that 60 month period, the total area covered by wildlife tree retention areas that relate to the cutblocks, meets or exceeds the percent of the total harvest area (Net Area to be Reforested + permanent road area) of the cutblocks by subzone presented in Table B.

---

<sup>8</sup> A minor salvage cutblock is defined as less than 2.0 ha of harvesting and/or less than total volume of 2,000m<sup>3</sup> excluding volume from any road clearing width, if the road is required to facilitate the removal of the timber within the minor salvage cutblock.

**Table B. Wildlife tree retention (WTR) by BEC unit in the Tsulquate Landscape Unit.**

<b>Biogeoclimatic Unit</b>	<b>% WTR requirement of the harvest area</b>
CWHvh1	2
CWHvm1	4

In addition:

- (1) WTPs must be well distributed across the BEC subzone.
- (2) When designated at the site plan level, WTPs must be located within or immediately adjacent to a cutblock.
- (3) No timber harvesting, including single tree selection is to occur within WTPs, except as noted below:
  - (a) Falling of danger trees;
  - (b) 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 such salvage/harvesting is planned and authorized, suitable replacement WTP of at least equivalent area must be identified to achieve the retention target.
- (4) WTPs should include, if present, remnant old-growth patches and live or dead veteran trees (excluding danger trees).
- (5) WTPs should include representative larger trees (dbh  $\geq$  average operational cruise) for the stand and suitable wildlife trees, if available, as well as identified wildlife habitat features, if present (excluding danger trees).
- (6) BEC subzones and variants will be determined by site plan information.
- (7) In WTPs with a high likelihood of windthrow, pruning and/or topping may be carried out to maintain the integrity of the WTP.

## APPENDIX 1 Proposed Legal OGMA Map

## APPENDIX 2      OGMA Summary and Rationale – Tsulquate LU

OGMA	All Age Classes	Age Class 9	C	P C	N C	Total Ha	Comments
1	398.4	384.0	5.5		392.9	398.4	Interior Forest. Connectivity, Poor Timber
2	564.1	559.3	57.5		506.6	564.1	RRZ, Interior Forest. Connectivity, Poor Timber
3	24.7	22.8	10.8	12.7	1.1	24.7	RRZ, MAMU Habitat, Creek Gully
4	23.8	16.9	2.1		21.7	23.8	RRZ, MAMU Habitat, Creek Gully
5	46.7	45.6	30.8		15.9	46.7	RRZ, MAMU Habitat, Creek Gully
6	46.8	46.0	34.5	5.0	7.3	46.8	RRZ, MAMU Habitat, Creek Gully
7	24.2	21.4	19.9		4.4	24.2	RRZ, MAMU Habitat, Creek Gully
8	58.1	56.2	37.8		20.3	58.1	RRZ, MAMU Habitat, River Gully, Community Watershed
9	19.8	19.2	19.7		0.1	19.8	MAMU Habitat
10	51.8	48.8	37.0	0.6	14.1	51.8	RRZ, MAMU Habitat, Creek Gully
12	107.4	107.4	0		107.3	107.4	Steep slopes, Poor Timber, Adjacent to lake
14	8.3	8.3	8.2		0	8.3	RRZ, MAMU Habitat
15	63.5	48.3	23.4		40.1	63.5	RRZ, MAMU Habitat, Community Watershed
16	859.6	717.2	0		859.6	859.6	Interior Forest. Connectivity, Poor Timber
20	43.0	37.5	1.2		41.8	43.0	MAMU Habitat, connectivity between lakes
22	384.1	331.9	8.9		375.3	384.1	Interior Forest. Connectivity, Poor Timber
23	174.8	171.1	0		174.8	174.8	Interior Forest. Connectivity, Poor Timber
Totals	2,899	2,642				2,899	

**2,642 Ha.** – Total area of Age Class 9 (Old Seral Stage Forest) within OGMA's

**2,899 Ha.** – Total Forested Area within OGMA's

### **APPENDIX 3 List of Acronyms**

AAC	Allowable Annual Cut
BCTS	BC Timber Sales
BEC	Biogeoclimatic Ecosystem Classification
BEO	Biodiversity Emphasis Option
C	Contributing
CMT	Culturally Modified Tree
CWS	Community Watershed
FPC	Forest Practices Code of British Columbia Act
FRPA	Forest and Range Practices Act
IWMS	Identified Wildlife Management Strategy
LU	Landscape Unit
LUDB	Landscape Unit Data Base as obtained from the Ministry of Forests
LUPG	Landscape Unit Planning Guide
MELP	Ministry of Environment, Lands and Parks, now Ministry of Environment
MEM	Ministry of Energy and Mines
MOF	Ministry of Forests
MSRM	Ministry of Sustainable Resource Management, now Ministry of Agriculture and Lands
MWLAP	Ministry of Water, Land and Air Protection, now Ministry of Environment
NC	Non-contributing
NDT	Natural Disturbance Type, see Biodiversity Guidebook
OGMA	Old Growth Management Area
P	Partially Contributing
RRZ	Riparian Reserve Zone
SBFEP	Small Business Forest Enterprise Program, now BC Timber Sales
SDM	Statutory Decision Maker
THLB	Timber Harvesting Land Base
TSR2	Timber Supply Review 2
UWR	Ungulate Winter Range

VRI	Vegetation Resources Inventory
WHA	Wildlife Habitat Area
WTP	Wildlife Tree Patch
WTR	Wildlife Tree Retention

## **APPENDIX 4. Landscape Unit Planning: Amendments and Operational Procedures for Old Growth Management Areas**

This Regional policy has been developed to: 1) describe Old Growth Management Areas (OGMA) amendment procedures; and 2) to guide operations when working in or adjacent to OGMA. 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, Ministry of Agriculture and Lands and may be updated from time to time.

This policy does not authorize violation of any other federal or provincial statute or higher level plan/resource management objective and does not constitute approval on behalf of any other agency with jurisdiction in this matter.

Where specified under a legal landscape unit objective, some commonly occurring forestry operations can be exempted from referral to the Ministry of Agriculture and Lands. Major amendment requests, however, cannot be exempted.

### **1.0 Major and Minor Amendment General Procedures**

Criteria for determining minor or major amendments are provided below. It remains the DDM's discretion to determine if the amendment is minor or major and if the amendment requires advertising.

Normally minor amendments will not require advertising and major amendments will. However, since each Landscape Unit is different and each variant has different amounts of old growth representation, some minor amendments may still require advertising. For example, an amendment request within a variant where only a small amount of old forest remains may be considered a major amendment, while a variant with many opportunities

for change that may not significantly affect the public may be processed as a minor amendment without advertising.

Proponents should submit their requests for amendments in a timely manner so that review/approval can occur without delaying operations. Proponents should recognize that OGMA's may overlap with other legal entities and it is their responsibility to ensure compliance with all legal requirements. The Ministry of Agriculture and Lands authority is limited to establishing, varying, or cancelling an objective. Authority for any operations is granted by other agencies.

If a replacement OGMA is necessary, it must be identified by the proponent and submitted with the amendment application. The replacement OGMA should be in the same biogeoclimatic variant and must have similar or more desirable ecological attributes for conserving biological diversity. These attributes may include: forest interior habitat, patch size, connectivity, suitable tree species, tree height and diameter, stand age, slope, aspect, elevation, stocking, or site index. The replacement area could also be critical habitat for species at risk. The presence of old forest attributes such as multi-layered canopy, vets and moderate to high value wildlife trees in the replacement area will further increase its suitability. Attributes of both the proposed replacement OGMA and original OGMA need to be clearly summarized and submitted with the amendment application (attributes confirmed in the field by the proponent). Complete and accurate submissions will allow faster processing. Incomplete submissions will be returned to the proponent.

Replacement area proposals must be submitted in digital format consistent with Ministry of Agriculture and Lands OGMA data standards to expedite the review and approval process (e.g. ARC Export file (e00), 1:20000 scale, TRIM base, ALBERS projection, and NAD 83 datum). The web site <http://srmwww.gov.bc.ca/gis/arcdata.html> outlines the Ministry of Agriculture and Lands standards for digital data. It is essential that the digital submissions are topologically clean.

No amendment is required for correcting mapping errors. For example, proposed development may show potential OGMA overlap or encroachment at the scale of 1:20000, but is deemed not to occur based on field engineering. The site or operating plan should clearly indicate that there is no overlap between proposed development and OGMA's. In other instances, the intended OGMA boundary (e.g. along a stream) may be shown in the wrong location on the legal map as proven by field engineering. If this occurs the prescribing/planning forester should record the discrepancy. Corrections must be made available to Ministry of Agriculture and Lands upon request or summarized and submitted annually.

Major and minor amendments will be summarized periodically for auditing purposes and may become public information on the Ministry of Agriculture and Lands web site.

### **1.1 Minor Amendments:**

Where not specified for exemption under a legal objective or where the exemption limit has been used, requests for minor amendments must be submitted to the DDM for the following situations. Ministry of Agriculture and Lands will make every effort to process minor amendments within 10 working days and no greater than 30 days.

A minor amendment is required when proposing the following changes to an existing OGMA:

- a) In each of the following situations, replacement OGMA of like or better quality and quantity must be identified (in order of priority)
  - immediately adjacent to the existing OGMA, or
  - in the same variant and landscape unit as the existing OGMA such that OGMA ecological attributes (as described in section 1.0 above) are maintained or improved:
    - i) OGMA <10 ha in size where the proposed development affects the OGMA by <2 ha,
    - ii) OGMA  $\geq$ 10 ha to <50 ha in size where the proposed development affects the OGMA by <5 ha,
    - iii) OGMA  $\geq$ 50 ha to <100 ha in size where the proposed development affects the OGMA by <10ha,
    - iv) OGMA  $\geq$ 100 ha in size where the proposed development affects the OGMA by <10%.
    - v) Construction of  $\leq$ 500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may deactivate or rehabilitate a temporary road or bridge site within four years after construction.
    - vi) 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 <0.5 ha.
- b) Felling of danger trees that are high value wildlife trees within an OGMA.

### **1.2 Major Amendments:**

A major amendment is required for any situation that does not fit into the minor amendment category. Ministry of Agriculture and Lands will make every effort to review major amendments within 120 calendar days. A 60-day public review and comment period will normally be required for major amendments and is included in the 120 day time period.

## 2.0 OGMA Operational Procedures

The following clarifies how OGMA's will be reviewed when certain events or activities occur. Operational procedures to guide activities adjacent to OGMA's are also described.

1. The distribution of OGMA's may be reviewed periodically to ensure their ecological suitability through time. This would occur:
  - a) at the DDM's discretion, or
  - b) as the result of a natural disturbance event that significantly altered the OGMA's contribution to old seral forest biodiversity conservation (e.g. fire, windthrow, disease), or
  - c) in the event that the natural disturbance is considered a threat to forested areas outside OGMA's (as determined by a qualified person and brought to the attention of the DDM).

If necessary, appropriate actions may be implemented to address disturbances and relocation of the OGMA may occur.

2. OGMA boundaries do not have to be legally surveyed; however the legal standard of measurement for locating OGMA boundaries is 1:20000 scale TRIM base map.
3. To deal with a discrepancy between an OGMA boundary and actual on-the-ground development, the following may be proposed to accommodate areas that may be left between harvest boundaries and the OGMA. Where approved or proposed developments are located in close proximity (e.g. within 50m) to established OGMA's, and the final development results in a forested leave area (suitable for OGMA) adjacent to the OGMA boundary, the leave area could be added to the OGMA. The proponent should notify the DDM regarding an opportunity to amend the OGMA boundary.
4. The cleared portion of the right-of-way for new road or new bridge construction within an OGMA must be as narrow as possible.
5. When a conflict arises between operational activities and high value wildlife trees in an OGMA, the preference is to retain high value wildlife trees by establishing no work zones or by altering the road/bridge alignment. Any danger trees that are felled as a result of exemptions from the legal objectives or amendments are to be left on the ground to provide a source of coarse woody debris, unless safety dictates otherwise. A qualified faller or Wildlife/Danger Tree Assessor must assess potential danger trees.
6. OGMA modifications that occur as a result of exemptions must be reconciled on an annual basis to the satisfaction of the DDM.

Proponents should document the location and extent of modifications that occur within or adjacent to individual OGMA's. Ministry of Agriculture and Lands will periodically require a written summary of these minor changes for auditing purposes. Tracking is necessary to determine cumulative impacts within OGMA's and whether replacement areas will be considered.

## APPENDIX 5. Definitions

**Crown Forested Land Base (CFLB):** Area of productive forest of suitable crown ownership. Productive forest defined as per FIP definition, where projected type id = 1 or 2 or 4 or 9. Suitable crown ownership generally includes TSA, TFL, provincial park, national park and excludes private lands, federal reserves, Indian reserves and woodlot licences.

**Contributing Area (C):** Remaining area of Timber Harvesting Land Base that is not accounted for in the constrained column.

**Incidentally Retained Forest (IRF):** Forested area (includes NP with species information) that has biological, ecological and habitat values with low-to-no economic merchantability or is forest constrained in some manner whereby it is highly unlikely that it will be impacted by future harvesting activities.

**Non Contributing Area (N):** Area of productive forest that does not contribute to AAC. This includes area 100% netted out. Non Contributing area generally includes inoperable, low productivity sites, unstable soils, parks, and riparian reserves.

**Partially Contributing (P):** Area of productive forest that does is partially netted out. It can not be pre-defined spatially on the land base and is to be identify at the operations level. Partial contributing includes ESA's and are to be netted out by 30-90%.

**Timber Harvesting Land Base (THLB):** THLB is defined in the following ways:

**THLB** is calculated as P+C (as outlined in the Landscape Unit Planning Guide) prior to the planning for and consequent delineation of OGMA.

**100%C-THLB** is considered to be the land base that contributes 100% to Allowable Annual Cut (AAC) and calculated as defined by the Timber Supply Review for a TSA or TFL (as demonstrated in Appendix 4) prior to the application of partial constraints (see Appendix 4). 100%C-THLB accounts for land base that is 100% available for timber harvesting and is spatially identifiable.

**Current-THLB** is considered to be land base that contributes to Allowable Annual Cut (AAC) and is calculated as defined by the Timber Supply Review for

a TSA or TFL (as demonstrated in Appendix 4). It includes area that is 100% available for harvest and area net of partial aspatial netdowns.

**Total Forest** - Forested area after non-contributing and non-forested area have been removed (see Appendix 4).

## APPENDIX 6. Public Consultation Summary

Prior to the public consultation period, Interfor met with the local forest licensees active within the Landscape Unit. Meetings were also held with Ministry of Forests and Ministry of Water, Land and Air Protection. Mineral tenure holders were also advised of OGMA placement. Comments received were addressed wherever possible.

The plan was made available for a 60 day review period commencing...