

Ministry of Agriculture and Lands
Sustainable Resource Management Plan
Biodiversity Chapter
for the
Upper Nimpkish Landscape Unit



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SUSTAINABLE RESOURCE MANAGEMENT PLAN
Biodiversity Chapter:
Upper Nimpkish Landscape Unit

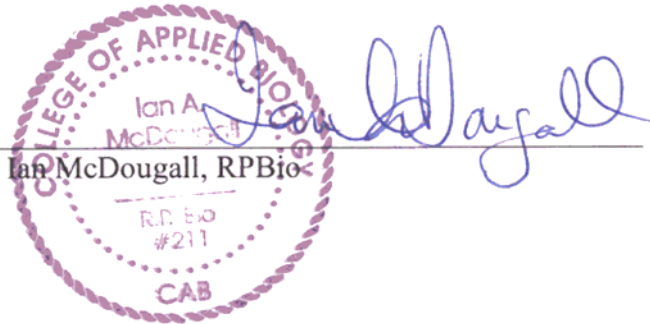
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Executive Summary

The Upper Nimpkish Landscape Unit (LU) encompasses the watersheds that drain into the upper half of the Nimpkish River, as well as the relatively small upper portions of the Tsitika River and Oktwanch River. The Upper Nimpkish LU is 119,947 ha in size of which approximately 91,200 ha are forested and 54,923 ha are considered Timber Harvesting Land Base (THLB). The Upper Nimpkish Landscape area extends from the upper Tsitika River drainage in the north to the Oktwanch River drainage in the south. Several Protected Areas are bounded wholly or partially by the Upper Nimpkish LU including Schoen Lake Park, Woss Lake Park, Claude Elliot Lake Park, Claude Elliot Ecological Reserve and the Nimpkish River Ecological Reserve.

The Upper Nimpkish LU is within the Coast and Mountains ecoprovince, Western Vancouver ecoregion and the Northern Island Mountain ecosection. It includes the Coastal Western Hemlock and Mountain Hemlock zones, and three Natural Disturbance Types: 1, 2 and 5.

Significant resource values in the Upper Nimpkish LU include fish, wildlife (Species at Risk and ungulates), biological diversity, First Nations interests and timber resources.

The Upper Nimpkish LU has been assigned an Intermediate Biodiversity Emphasis option. Old seral forest representation targets are based on a percent retention of productive forest by Biogeoclimatic Ecosystem Classification (BEC) Unit. For the Upper Nimpkish, a total of 12,073 ha are required for the five BEC units requiring old seral conservation. Old seral representation targets have been achieved through a combination of Old Growth Management Areas (OGMAs) and Protected Area contribution.

The CWHxm2 old seral target was 472 ha and 609 ha of OGMA were delineated.

The CWHmm1 old seral target was 1,412 ha and 1,058 ha were delineated as OGMA and 271 ha of Protected Area contributed to old seral representation.

The CWHvm1 target was 3,358 ha and 2,499 ha were delineated as OGMA and 982 ha of Protected Area contributed to old seral representation.

The CWHvm2 target was 3,739 ha and 2,656 ha of OGMA were delineated and 1,116 ha of Protected Area contributed to old seral representation.

The target for the MHmm1 was 3,093 ha and 2,175 ha of OGMA were delineated and 1,220 ha of Protected Area contributed to old seral representation.

All Special Management Zones are required to have at least 25% of the forested land base classified as mature (≥ 80 years old in the CWH and/or ≥ 120 years old in the MH). It is not the intent to manage this objective through OGMA, however; a significant portion of the target is achieved through OGMA. In SMZ 9, 50% of the target is met through OGMA. In SMZ 6 (Upper Nimpkish portion only), 41.6% of the target is met through OGMA. In SMZ 11 (Upper Nimpkish portion only), 100% of the target is met through OGMA.

The estimated total impact to the timber harvesting land base (THLB) is 1,067 ha as per Canfor's Sustainable Forest Management Plan 9. This represents approximately 1.9 % of the total THLB and 4.2% of the >80 year old THLB (based on Jan 1, 1997) within the Upper Nimpkish LU. The impact is the same using >60 year old THLB as a surrogate for short-term impact. Most of this impact can be attributed to (i) ecosystem representation (CWHmm1); (ii) following logical engineering boundaries such as streams, and terrain breaks and (iii) capturing effective area of potential nesting habitat for marbled murrelet (CWHvm2, MHmm1).

Potential marbled murrelet nesting habitat was mapped for the entire LU using low-level aerial reconnaissance surveys. A total of 31,151 ha (Class 1-4) of potential marbled murrelet nesting habitat was identified in the Upper Nimpkish LU and 4,500 ha (14.4% of 2002 habitat) was conserved in OGMA. Protected Areas added an additional 5,779 ha of potential nesting habitat. A total of 33% of the 2002 Class 1-4 nesting habitat is conserved through OGMA and Protected Areas in the Upper Nimpkish LU.

Wildlife Tree Retention (WTR) targets were recalculated in 2005 to: (i) use current data on amount of area harvested without WTR; (ii) use BEC variant based on 1:20,000 Terrestrial Ecosystem Mapping rather than BEC variant data used for the Regional Land Use Planning database at a 1:250,000 scale; and (iii) reflect the Provincial Wildlife Tree Policy (2000).

Achievement of WTR targets will be based on a 5 year rolling average. For the Upper Nimpkish LU, this will be measured by total harvest area (Net Area to be reforested + permanent road area) by BEC variant. Monitoring WTR achievement will be on a calendar year basis. The WTR targets are: CWHxm – 13%; CWHmm – 14%; CWHvm – 9%; and MHmm – 3%.

Table of Contents

EXECUTIVE SUMMARY	III
TABLE OF CONTENTS	V
1.0 BACKGROUND.....	1
2.0 UPPER NIMPKISH LU DESCRIPTION	2
2.1 UPPER NIMPKISH BIOPHYSICAL DESCRIPTION.....	2
3.0 CANADIAN FOREST PRODUCTS GUIDING DOCUMENTS.....	3
3.1 TFL 37 SUSTAINABLE FOREST MANAGEMENT PLAN (SFMP) (DEAL AND MANNING, 2002)	3
3.2 TFL 37 UNGULATE WINTER RANGE PLAN (DEAL 2001)	4
3.3 QUEEN CHARLOTTE GOSHAWK ADAPTIVE MANAGEMENT STRATEGY (MANNING ET AL 2004).....	4
3.4 MARBLED MURRELET WILDLIFE HABITAT AREAS (WHA) (DEAL AND HARPER 2004).....	5
4.0 VANCOUVER ISLAND LAND USE PLAN (VILUP)	5
4.1 RESOURCE MANAGEMENT ZONE LOCATION AND VALUES.....	5
4.1.1 SMZ 6: Woss – Zeballos.....	6
4.1.2 SMZ 9: Tsitika – Woss	6
4.1.3 SMZ 11: Schoen – Strathcona.....	6
4.1.4 RMZ 13: Woss – Vernon	7
4.1.5 RMZ 26: Tsitika	7
4.2 LEGALLY BINDING DIRECTION.....	7
4.2.1 SMZ 6, SMZ 9 and SMZ 11	7
4.2.2 SMZ 6 and SMZ 11	8
5.0 INTEGRATING KEY RESOURCE TENURE HOLDERS.....	8
5.1 PRIVATE LAND	9
5.2 FOREST TENURE HOLDERS	9
5.3 MINING TENURE HOLDERS	9
6.0 SIGNIFICANT RESOURCE VALUES	10
6.1 FISH, WILDLIFE, AND BIODIVERSITY	10
6.2 TIMBER RESOURCES	11
6.3 RECREATION	12
6.4 KARST	12
7.0 FIRST NATIONS.....	13
7.1 ‘NAMGIS FIRST NATION	13
7.2 TLOWITSIS FIRST NATION	13
7.3 MOWACHAHT/MUCHALAHT FIRST NATION.....	13
8.0 OGMA METHODOLOGIES.....	14
8.1 SELECTION OF OLD GROWTH MANAGEMENT AREAS AND BOUNDARY MAPPING	14
8.2 ASSESSMENT AND REVIEW	14
8.3 AMENDMENT POLICY	15
9.0 OLD SERAL FOREST REPRESENTATION	15
9.1 OLD GROWTH MANAGEMENT AREAS	15
9.1.1 Vancouver Island Land Use Plan HLP Order	17
9.1.2 Timber Harvesting Land Base Impacts.....	17
9.2 MARBLED MURRELET	18

9.3 WILDLIFE TREE RETENTION	19
10.0 TIMBER SUPPLY MITIGATION.....	20
11.0 LEGAL OBJECTIVES FOR THE UPPER NIMPKISH LANDSCAPE UNIT	22
LEGAL OBJECTIVES – UPPER NIMPKISH LANDSCAPE UNIT	22
<i>Objective 1 – Old Growth Management Areas</i>	<i>22</i>
<i>Objective 2 – Wildlife Tree Retention</i>	<i>24</i>
<i>Objective 3 – Special Management Zones 6, 9 and 11</i>	<i>25</i>
REFERENCES	26
APPENDICES	28
APPENDIX I: MAP OF RESOURCE MANAGEMENT ZONES WITHIN THE UPPER NIMPKISH LU	29
APPENDIX II: VANCOUVER ISLAND LAND USE PLAN HIGHER LEVEL PLAN ORDER	30
APPENDIX III: LANDSCAPE UNIT PLANNING: AMENDMENTS AND OPERATIONAL PROCEDURES FOR OLD GROWTH MANAGEMENT AREAS	35
APPENDIX IV: MAP OF PROPOSED OGMAS FOR THE UPPER NIMPKISH LANDSCAPE UNIT	39
APPENDIX V: OGMA CHARACTERISTICS.....	40
SERAL STAGE DISTRIBUTION	40
TREE SPECIES VOLUME BY OGMA	41
TREE SPECIES SUMMARY	46
SLOPE AND ASPECT CLASS SUMMARY	46
TERRAIN CLASS SUMMARY	46
SITE SERIES REPRESENTATION SUMMARY	47
<i>Primary Site Series Summary</i>	<i>47</i>
<i>Secondary Site Series summary</i>	<i>48</i>
OGMA VALUES	49
APPENDIX VI: PUBLIC CONSULTATION SUMMARY	58

LIST OF TABLES

TABLE 1. AREA SUMMARY OF BIOGEOCLIMATIC ECOSYSTEM CLASSIFICATION (BEC) UNITS, BASED ON TERRESTRIAL ECOSYSTEM MAPPING, FOR THE UPPER NIMPKISH LU (NOT INCLUDING PRE 1995 SCHOEN PARK).....	3
TABLE 2. RESOURCE MANAGEMENT ZONES AND ASSOCIATED AREAS FOUND IN THE UPPER NIMPKISH LU.....	6
TABLE 3. TENURE STATUS FOR THE UPPER NIMPKISH LU.....	8
TABLE 4. CATEGORY OF SPECIES AT RISK WITHIN THE UPPER NIMPKISH LU.....	10
TABLE 5. SUMMARY OF LENGTH OF STRATEGIC-LEVEL STREAMS BY RIPARIAN CLASS AND AREA OF RIPARIAN RESERVE ZONES BY AGE CLASS IN THE UPPER NIMPKISH LU (NOT INCLUDING PRE 1995 SCHOEN PARK).....	11
TABLE 6. SUMMARY OF UPPER NIMPKISH OGMA TARGETS BY BEC UNIT.....	16
TABLE 7. SUMMARY OF UPPER NIMPKISH OGMAS AND PROTECTED AREAS USED TO CONTRIBUTE TOWARD OLD SERAL TARGETS BY BEC VARIANT.....	16
TABLE 8. PATCH SIZE DISTRIBUTION OF OGMAS IN THE UPPER NIMPKISH LU.....	17
TABLE 9. SUMMARY OF SERAL STAGE TARGETS, CURRENT STATE (AS OF MARCH 2002) AND OGMA AREA BY SPECIAL MANAGEMENT ZONE WITHIN THE UPPER NIMPKISH LU.....	17
TABLE 10. TIMBER HARVESTING LAND BASE IMPACTS BY BEC UNIT.....	18
TABLE 11. AREA (HA) OF POTENTIAL MARBLED MURRELET NESTING HABITAT BY CLASS AND BEC UNIT WITHIN MAPPED OGMAS.....	19
TABLE 12. WILDLIFE TREE RETENTION (WRT) TARGETS BY BEC SUBZONE, BASED ON HARVEST AREA, FOR THE UPPER NIMPKISH LU.....	20

1.0 Background

Landscape unit plans are intended to provide direction on biodiversity, old growth forest retention, wildlife habitat maintenance, and timber harvesting (Landscape Unit Planning Guide). Biodiversity is defined as the diversity of plants, animals, and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them (Landscape Unit Planning Guide). The maintenance of biodiversity in British Columbia occurs at several levels. The Province of British Columbia has established protected areas to protect biodiversity at a landscape level. The Vancouver Island Summary Land Use Plan (VISLUP) addresses biodiversity and resource planning at a regional level by dividing the area into Resource Management Zones based on Landscape Units and establishing management priorities.

Planning for Old Growth Management Areas (OGMAs) and Wildlife Tree Patch (WTP) biodiversity is recognized as a high priority for 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.

The Upper Nimpkish Landscape Unit (LU) has been identified by VISLUP as having an Intermediate Biodiversity Emphasis Option (BEO). VISLUP also recognises the Upper Nimpkish LU as a high planning priority. This report describes the biodiversity conservation management strategy for the Upper Nimpkish LU and associated OGMA and Wildlife Tree Retention (WTR) objectives. Other resource interests and significant ecological descriptions are also included.

Reference material on government policy, planning processes and biodiversity concepts associated with landscape unit planning include:

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)

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>

Vancouver Forest Region Landscape Unit Planning Strategy (1999), Vancouver Forest Region Landscape Unit Planning Document, Nanaimo, BC

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>

2.0 Upper Nimpkish LU Description

The Upper Nimpkish LU is 119,947 ha in size of which approximately 91,200 ha are forested and 54,923 ha are considered Timber Harvesting Land Base (THLB). The Upper Nimpkish LU extends from the upper Tsitika River drainage in the north to the Oktwanch River drainage in the south. Several protected areas are bounded wholly or partially by the Upper Nimpkish LU including Schoen Lake Park, Woss Lake Park, Claude Elliot Lake Park, Claude Elliot Ecological Reserve and the Nimpkish River Ecological Reserve. The LU includes the portion of Claude Elliot Ecological Reserve and Schoen Lake Provincial Park that was within the original 1960 TFL 37 boundary.

2.1 Upper Nimpkish Biophysical Description

Within British Columbia, the Upper Nimpkish LU is within the Coast and Mountains ecoprovince, Western Vancouver ecoregion and the Northern Island Mountain ecosection. Wide valleys and mountains in the northern portion of Vancouver Island characterize the area. Forest harvesting over large portions of the ecoprovince has resulted in changes to natural habitat conditions (Campbell et al. 1990). Topography and landforms of the valley are typical of the insular mountains physiographic system and elevations range from sea level to approximately 1,800 m. The terrain is characterized by dense coniferous forests on rolling uplands and steep and rugged mountain slopes, often with exposed bedrock (Pojar et al. 1991a). The Nimpkish Valley is found within Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) biogeoclimatic ecosystem classification (BEC) zones (Table 1). The CWH occurs at low to middle elevations along the entire British Columbia coast (Pojar et al. 1991a). Low elevations are dominated by coniferous forests composed of western hemlock (*Tsuga heterophylla*) and Douglas-fir (*Pseudotsuga menziesii*), especially in the drier variants (Campbell et al. 1990). Other trees include western red cedar (*Thuja plicata*), shore pine (*Pinus contorta* var. *contorta*), western white pine (*Pinus monticola*), yellow cedar (*Chamaecyparis nootkatensis*) and red alder (*Alnus rubra*). Woody shrubs that include blueberries and huckleberries (*Vaccinium* spp.), and salal (*Gaultheria shallon*) dominate the understory communities. Subzones and variants found along an elevational gradient in the Nimpkish Valley includes (i) very dry maritime coastal western hemlock subzone (CWHxm) at lower elevations, (ii) submontane very wet maritime coastal western hemlock variant subzone (CWHvm1) above the CWHxm to approximately 600m, and (iii) the montane very wet maritime coastal western hemlock variant (CWHvm2) from approximately 450 to 800 m elevation. The windward moist maritime mountain hemlock variant (MHmm1) occurs between 800-1000 m (Green and Klinka 1994).

The Mountain Hemlock zone represents the subalpine of the coastal mountains. The winter snowpack is slow to melt resulting in a short growing season (Pojar et al. 1991b). Mountain hemlock (*Tsuga mertensiana*), amabilis fir (*Abies amabilis*) and yellow-cedar (*Chamaecyparis nootkatensis*) are predominant trees, while ericaceous shrubs dominate the understory (Pojar et al. 1991b).

Old growth forests in the Upper Nimpkish are typically uneven-aged or multiple-aged forests. They experience rare to infrequent stand-initiating events that generally occur at 250-year intervals in the CWH and 350 years in the MH zones (BC Ministry of Environment and BC Forest Service 1995a). Natural regeneration usually occurs in gaps created by the death of individual or small patches of trees. The infrequent disturbance pattern has left a landscape of irregular edges with small openings created by high winds, fire, avalanches and landslides. A large natural opening in the forest type can exceed 250 ha (BC Ministry of Environment and BC Forest Service 1995a).

Table 1. Area summary of biogeoclimatic ecosystem classification (BEC) units, based on Terrestrial Ecosystem Mapping, for the Upper Nimpkish LU (not including pre 1995 Schoen Park).

BEC Unit	Area (ha) ¹
CWHxm2	5,933
CWHmm1	19,367
CWHvm1	25,090
CWHvm2	29,640
MHmm1	24,818
MHmmp	2,501
<i>Total</i>	<i>107,349</i>

¹ not including pre-1995 Schoen Park boundary and Claude Elliot Ecological Reserve.

3.0 Canadian Forest Products Guiding Documents

3.1 TFL 37 Sustainable Forest Management Plan (SFMP) (Deal and Manning, 2002)

In 1999, Canfor's Environmental Management System was registered under ISO 14001. In August, 2000 Canfor's Sustainable Forest Management System (SFMS) for the Englewood Defined Forest Area (DFA) was registered under CAN/CSA-Z809-96. A major component of the SFMS is the development and implementation of a sustainable forest management plan. A public advisory group was formed to help guide the process by identifying values, goals, indicators and objectives of sustainable forest management. The group identified 53 indicators of sustainable forest management including (i) % old

growth cover by Landscape Unit (LU) and Biogeoclimatic Ecosystem Classification (BEC) unit and (ii) percent wildlife tree retention (<http://www.canfor.com/sustainability/certification/csa.asp>).

3.2 TFL 37 Ungulate Winter Range Plan (Deal 2001)

Canfor's Ungulate Winter Range management strategy received government approval on September 13, 2001 under Section 69 of the British Columbia Forest Practices Code Act Operational Planning Regulation. The strategy established 79 ungulate winter ranges totalling 6205.5 ha within TFL 37 boundaries. Fifty-five of these ranges were established within the Upper Nimpkish Landscape Unit including 17 for elk, 37 for deer, and one suitable for both deer and elk. In total, 3,966.8 ha were approved in the Upper Nimpkish Landscape Unit. The OGMAs encompass all of the ungulate winter ranges to minimize overall impact to the timber harvesting land base.

3.3 Queen Charlotte Goshawk Adaptive Management Strategy (Manning et al 2004)

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Queen Charlotte goshawk (*Accipiter gentilis laingi*) as *Vulnerable* in 1995 (Duncan and Kirk 1995), but recently upgraded its status to *Threatened* (Cooper and Chytyk 2000). The British Columbia Conservation Data Centre (CDC) ranked the Queen Charlotte goshawk as S2B, SZN (imperilled in British Columbia due to rarity and perceived threats to habitat). The Queen Charlotte goshawk is currently on the British Columbia "Red List" as a candidate species for Endangered or Threatened status (BC Species and Ecosystems Explorer 2004) and listed as an identified wildlife species within the British Columbia Forest and Range Practices Act. Queen Charlotte goshawk was included in Volume 1 of the Identified Wildlife Management Strategy in 1999 and is also included in Version 2004 (<http://wlapwww.gov.bc.ca/wld/identified/index.htm>).

A goshawk adaptive management strategy (Manning et al 2004), based on local data, was developed for TFL 37 and approved by government on March 13, 2003. The strategy outlines 10 Wildlife Habitat Areas (WHA's) ranging from 135 to 538 hectares in size. Seven of the WHA's are within the Upper Nimpkish LU and one additional one is shared with the Lower Nimpkish LU. These WHA's have also been included in the OGMAs to minimize impacts to the THLB.

3.4 Marbled Murrelet Wildlife Habitat Areas (WHA) (Deal and Harper 2004)

The marbled murrelet (*Brachyramphus marmoratus*) is listed as *Threatened* by COSEWIC (Hull 1999), red-listed by the British Columbia Conservation Data Centre and is an Identified Wildlife species under the Forest and Range Practices Act. For this reason, marbled murrelet nesting area is an important consideration in OGMA selection within the Upper Nimpkish Landscape Unit.

One Marbled Murrelet WHA, based on habitat quality and suspected nesting, was established in the Upper Nimpkish Landscape Unit in 2002. This WHA was included as an OGMA.

In January 2005, Canfor implemented its conservation plan for nesting habitat for the Defined Forest Area (Deal and Harper 2004). This plan was developed using extensive dawn audio/visual surveys, radar monitoring, and low-level aerial reconnaissance habitat mapping. Many old growth management areas provide suitable nesting habitat, but for some drainages the amount and location habitat may not be adequate. For these drainages, Wildlife Habitat Areas that are not part of the OGMA plan will be pursued as candidates for establishment.

4.0 Vancouver Island Land Use Plan (VILUP)

The Vancouver Island Summary Land Use Plan (Feb 2000) outlines Land Use Zones for Vancouver Island. Designated Land Use Zones include Protected Areas, agriculture, settlement, and private areas as well as three distinct Resource Management Zones (RMZs): a Special Management Zone (SMZ), a General Management Zone (GMZ) and an Enhanced Forestry Zone (EFZ). VISLUP describes RMZs as areas with a purpose related to the Forest Practices Code (FPC). The three RMZs make up 63% of the VISLUP defined land use area. Section 4.3 of VISLUP describes the management intent and regimes of each RMZ. VISLUP identifies three SMZs, and one GMZ within the Upper Nimpkish LU boundaries ([Appendix I](#)).

4.1 Resource Management Zone Location and Values

A brief description of the Upper Nimpkish Resource Management Zones and associated primary management objectives is provided below ([Table 2](#)). Additional information on the objectives is found in the Vancouver Island Summary Land Use Plan.

Table 2. Resource Management Zones and associated areas found in the Upper Nimpkish LU.

Resource Management Zone	Area (ha)
Agriculture	937
GMZ 13	74,865
GMZ 26	8,315
Protected	14,465
SMZ 6	2,228
SMZ 9	15,132
SMZ 11	2,861

4.1.1 SMZ 6: WOSS – ZEBALLOS

The Clint Lakes area of SMZ 6 is within the Upper Nimpkish LU. This SMZ is shared with the Lower Nimpkish LU. The primary values associated with the approximately 2,200 ha include old growth biodiversity, visual quality related to recreation sites, and recreation opportunities associated with lakes.

4.1.2 SMZ 9: TSITIKA – WOSS

Approximately 15,000 ha of this SMZ are within the Upper Nimpkish LU extending from the Tsitika River in the north to Woss Lake in the south and the Davie River valley in the east. The primary values associated with this SMZ include biodiversity and connectivity functions, in particular restoration and landscape level planning of old growth and riparian habitats. Recreational values and fish and wildlife habitats and populations are also considered primary values in this SMZ.

4.1.3 SMZ 11: SCHOEN – STRATHCONA

The portion of this SMZ that is included in the Upper Nimpkish LU lies south of Schoen Lake Provincial Park and east of RMZ 13 (Woss – Vernon). This SMZ is shared with the White Landscape Unit. The primary values for the approximately 2,900 ha include old growth biodiversity and connectivity, wildlife and fish habitats and populations, and visual qualities associated with Victoria and Warden Peaks.

4.1.4 RMZ 13: WOSS – VERNON

This general management zone is the largest RMZ in the Upper Nimpkish LU at approximately 75,000 ha. It extends from Schoen Lake Park and the Schoen-Strathcona SMZ (SMZ 11) in the east to the upper reaches of the Oktwanch in the south and the northern boundary surrounds the Tsitika-Woss SMZ (SMZ 9). The zone encompasses Woss and Vernon Lakes and the Woss Protected Area. The focus of this RMZ is timber with active integration of wildlife, fish, biodiversity, and recreation values. Enhanced timber opportunities also exist within this RMZ.

4.1.5 RMZ 26: TSITIKA

The Tsitika general management zone encompasses the Tsitika watershed with the exception of protected areas and SMZ 8 and 9. The focus of the 8,300 ha within the Upper Nimpkish LU is the integration of timber, fish, wildlife, and biodiversity values.

4.2 Legally Binding Direction

The legally binding objectives outlined in the Higher Level Plan Order (HLPO) that apply to the Upper Nimpkish LU are summarized below. The HLPO is included in [Appendix II](#) for further information.

4.2.1 SMZ 6, SMZ 9 AND SMZ 11

- i. **Mature Seral Component**
The target for mature seral forest should range between one quarter and one third of the forested area in each SMZ. The mature seral forest is defined under the Higher Level Plan Order as “80 to 120 year old or older forest, depending on species and site conditions”. Canfor’s interpretation of this definition is all forest in CWH that is ≥ 80 years old and all forest in the MH that is ≥ 120 years old. To further clarify, Canfor’s interpretation of this objective is that $\geq 25\%$ of the forest area in CWH must be ≥ 80 years old and ≥ 120 years in the MH.
- ii. **Stand Level Biodiversity**
Retain, within cutblocks, structural forest attributes and elements with important biodiversity functions.

- iii. **Silvicultural Systems and Patch Sizes**
Apply a variety of silvicultural systems, patch sizes and shapes across the zone in block sizes no greater than 5 ha if clearcut, clearcut with reserves or seed tree reserves and no greater than 40 ha if shelterwood, selection or retention systems are applied.

4.2.2 SMZ 6 AND SMZ 11

- i. **Visual Resources**
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.

5.0 Integrating Key Resource Tenure Holders

A summary of Tenure Status is provided in [Table 3](#) (current to December 2004):

Table 3. Tenure Status for the Upper Nimpkish LU.

Tenure Holder	Tenure Type	Area (ha)
BC Hydro	Crown	361
Canfor	Private	4,558
Canfor	TL	13,836
Canfor	TFL 37	85,421
Woss Community	Private	138
Western Forest Products	TL	745
Highway	Crown	215
River Side Park	Crown	11
School District	Private	2
SUP	Crown	8
Claude Elliot Creek ER	Crown	102
Claude Elliot Lake Park	Crown	217
Mt Cain Regional Park	Crown	218
Schoen Lake Park	Crown	7,465
Woss Lake Park	Crown	6,526
Nimpkish River ER	Crown	15
<i>Total</i>		<i>119,838</i>

5.1 Private Land

Canfor is the largest private landowner in the Upper Nimpkish LU with 4,558 ha. Approximately 125 ha of this area are included in the old growth management area plan because of its inoperability. The community of Woss and the associated School District make up the remaining 140 ha of private land and were not included in the OGMA selection process.

5.2 Forest Tenure Holders

Canfor's Tree Farm Licence 37 is the largest forest tenure in the Upper Nimpkish LU. Canfor also holds 17 Timber Licences (TLs) totalling 95,162 ha within the Upper Nimpkish. 2,274 hectares, or 2.4%, of the TLs were included in the old growth management areas. In addition, Western Forest Products Ltd. has 745 ha in TLs, but these were not included in the OGMA selection process.

5.3 Mining Tenure Holders

Several mineral tenures overlap OGMA's in the Upper Nimpkish LU. OGMA UN-178 extends along Schoen Creek with the intent of providing connectivity to Schoen Park as recommended in the Vancouver Island Land Use Plan. At the valley bottom, several mineral claims overlap this OGMA. It is unlikely that mineral activities will influence the OGMA values of UN-178 because of its association with Schoen Creek Riparian Reserve Zone. OGMA UN-182 was selected for its marbled murrelet habitat potential and operability constraints and is located west of Schoen Creek. OGMA's 173, 175, 181 and 183 were selected for ecosystem representation and show relatively minor overlap with mineral claims.

Mineral exploration and development are permitted within OGMA's. If the exploration and development are found to negatively influence the old growth values the OGMA status will be removed and another appropriate area will be designated if required.

6.0 Significant Resource Values

6.1 Fish, Wildlife, and Biodiversity

Table 4 lists the 2004 category of species at risk within the Upper Nimpkish Landscape Unit (http://wlapwww.gov.bc.ca/wld/documents/identified/approved_sar_order_list.pdf).

Table 4. Category of Species at Risk within the Upper Nimpkish LU.

Common Name	Scientific Name	BC List 2004 ¹	COSEWIC ²	IWMS ³ 2004
AMPHIBIANS				
Red-Legged Frog	<i>Rana aurora</i>	Blue	Special Concern	Yes
BIRDS				
Pacific Great Blue Heron	<i>Ardea herodias fannini</i>	Blue	Special Concern	Yes
'Queen Charlotte' Goshawk	<i>Accipiter gentilis laingi</i>	Red	Threatened	Yes
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Red	Threatened	Yes
MAMMALS				
Keen's Long-eared Myotis	<i>Myotis keenii</i>	Red	Data Deficient	Yes
Wolverine	<i>Gulo gulo vancouverensis</i>	Red	Special Concern	Yes

NOTES:

¹ British Columbia Conservation Data Centre Provincial Vertebrate Animal Tracking List: www.elp.gov.bc.ca/rib/wis/cdc/vertebrates.htm

² Committee on the Status of Endangered Wildlife in Canada: www.speciesatrisk.gc.ca

³ IWMS = Identified Wildlife Management Strategy

As discussed previously, plans are in place to manage Ungulate Winter Range (Deal 2001), Queen Charlotte goshawk habitat (Manning et al 2004), and a plan has been developed for marbled murrelet nesting habitat (Deal and Harper 2004). Existing WHAs and UWRs were included as OGMA. In addition to the established WHAs, an OGMA was used to capture the portions of the post fledgling area for the Sutton goshawk territory and the nest area.

Many streams and rivers within the Upper Nimpkish LU are considered high fisheries value for anadromous and resident fish populations. Canfor's SFMP outlines strategies for riparian management in TFL 37 based upon criteria outlined in the Forest and Range

Practices Act. Riparian Management Areas (RMAs) provide additional opportunities for Old Growth retention and were utilised in some circumstances. Second growth Riparian Reserve Zones (RRZs) provide future old seral retention through the recruitment process (Table 5). In addition, in 2004, Canfor completed reclassification of over 1,000 km of low gradient, low elevation strategic level streams in TFL 37.

Table 5. Summary of length of strategic-level streams by riparian class and area of riparian reserve zones by age class in the Upper Nimpkish LU (not including pre 1995 Schoen Park).

Riparian Class	Stream Length (km)	Riparian Reserve Zone		
		>250 years (ha)	81-250 years old (ha)	≤ 80 years old (ha)
S1	111.5	219	20	754
S2	220.1	604	13	662
S3	214.6	189	10	622
S4	71.6	0	0	0
Fish bearing Stream Subtotal	617.8	1,012	43	2,038
S5	333.2	0	0	0
S6	3,900.9	0	0	0
Non-fish bearing Stream Subtotal	4,234.1	0	0	0
Total	4,851.80	1,012	43	2,038

6.2 Timber Resources

The Upper Nimpkish LU contains some very productive growing sites that are important to the local forest industry. Commercially valuable tree species in the Upper Nimpkish LU include western/mountain hemlock, amabilis fir, Douglas-fir, yellow cedar and western red cedar. Extensive silvicultural investments have been made throughout the LU through spacing, pruning and aerial fertilization. Extensive road rehabilitation has reduced the risk of old roads failing and causing slides. An extensive road and development infrastructure exists and is maintained as timber is harvested. The current second growth harvest ranges from 11-17% per year in TFL 37 (Deal and Manning 2004).

The Timber Harvesting Land Base (THLB) is estimated at 54,923 ha. Netdown factors including protected areas, physically inoperable, avalanche tracks, riparian reductions, Class IV terrain, karst areas, campsites/recreation areas, ungulate winter range, goshawk WHA's, marbled murrelet WHA's, wildlife tree patches (WTP's), uneconomic forest, and future WTP's were used to determine the net productive area for each landscape unit.

6.3 Recreation

There are many recreational opportunities within the Upper Nimpkish LU. The 14,299 ha of park area provide backcountry hiking, camping, and wildlife viewing opportunities. Recreational and guided hunting occurs throughout the LU. The most commonly hunted species are deer, bear, cougar, and elk. As well there are a number of trapline tenure holders. Canfor maintains two interpretive trails and four campsites within the Upper Nimpkish LU. These trails and recreation sites were approved under Section 6 of the Forest Practices Code of BC Act by the District Manager on September 9, 2002. The many lakes and rivers are regularly visited by recreational anglers and sightseers. The Nimpkish River is used extensively by recreational white water kayakers and rafters. Commercial backcountry recreational tenures extending from Vernon Lake to Nimpkish Lake on the Nimpkish River are held by Destiny River Adventures Ltd. and Strathcona Park Lodge for the purpose of guided rafting and kayaking. The tenures include access to the river, activities on the water, and use of 30m on either side of the river for no trace camping. Mt. Cain ski hill is a popular winter recreation destination for local snow enthusiasts. Mt. Cain holds a variety of different leases, licences of occupation, and right of way tenures that make up approximately 512 ha. The lodge and hill do not operate during the summer, but are still visited regularly by cabin holders, berry pickers, and hikers. The Mt Cain Regional Park was not considered in the OGMA selection process.

6.4 Karst

Karst refers to a three-dimensional soluble rock landscape that consists of a distinctive surface and subsurface ecosystem. Karst ecosystems are fragile, interconnected, and dependent upon the activities of rainwater, runoff, soils, bedrock and vegetation. Karst landscape is largely shaped by the dissolving action of water on carbonate bedrock (limestone, dolomite or marble). This geological process, occurring over many thousands of years, results in unusual surface and subsurface features such as sinkholes, vertical shafts, caves, disappearing streams, subsurface springs and complex underground drainage systems. Karst ecosystems are a non-renewable resource with important geological, biological, hydrological, cultural, educational and recreational values.

Karst ecosystems are further described in the following Ministry of Forests Forest Practices Branch publication: <http://www.for.gov.bc.ca/hfp/fordev/karst/>.

In the Upper Nimpkish Landscape Unit, karst features are most notably located in the Torback watershed.

Canfor's SFMP recognizes the intrinsic value of water and the need to maintain naturally clean and clear water. Canfor's goal is to minimize the effects of industrial activities on water quality and quantity flowing to and through karst features. As karst areas are located operationally, they are handled through a best management practices approach involving inventory, mapping, and development of appropriate protective measures.

7.0 First Nations

The Upper Nimpkish LU is located within the traditional territory of the 'N^{am}gis, Mowachaht/Muchalaht, and Tlowitsis First Nations.

7.1 'N^{am}gis First Nation

The 'N^{am}gis First Nation is located at Alert Bay on Cormorant Island. The 'N^{am}gis are part of the Kwakwaka'wakw, or Pacific Northwest First Nations, and belong to the Kwakiutl linguistic group. The traditional territory of the 'N^{am}gis with TFL 37 encompasses the Nimpkish River and all of its tributaries.

7.2 Tlowitsis First Nation

The Tlowitsis First Nation also belongs to the Kwakiutl linguistic group. The Tlowitsis were originally located on Turnour Island, but have since relocated to Campbell River and Alert Bay. The traditional territory of the Tlowitsis overlaps with the 'N^{am}gis traditional territory and extends westward beyond the Tsitika River drainage.

7.3 Mowachaht/Muchalaht First Nation

The Mowachaht/Muchalaht originally resided at Friendly Cove, but relocated to the mouth of Nootka Sound in the 1960's. The traditional territory of the Mowachaht/Muchalaht includes the Oktawanch river drainage south of the 'N^{am}gis traditional territory.

8.0 OGMA Methodologies

8.1 Selection of Old Growth Management Areas and Boundary Mapping

The OGMA selection follows a strict procedure as outlined in the FPC Landscape Unit Planning Guide and in the former Ministry of Sustainable Resource Management Landscape Unit Planning Methodology, May 2002.

Managing Species at Risk habitat (Queen Charlotte goshawk and marbled murrelet), ungulate winter range, ecosystem representation and meeting the VILUP higher-level plan objectives were the priority selection criteria. Other considerations included known cultural sites, bald eagle nests trees, known sites of biological significance, sites series where a red or blue-listed plant community may be present, stand structure, patch size, and spatial distribution. In general, denser, taller stands and larger, more productive areas within the non-contributing land base were selected.

The key building blocks used to identify and map OGMA, as referred to above, include: established ungulate winter ranges, established wildlife habitat areas, low-level aerial habitat classification for marbled murrelet, physically inoperable forest, terrain class V, riparian reserve zones, low productivity sites, and colluvium sites.

OGMAs were mapped using a 1:20,000 scale TRIM base. OGMA boundaries were mapped to logical engineering boundaries such as streams, natural features, and major forest type changes, wherever possible, without unduly impacting the THLB.

The BEC unit was determined based on 1:20,000 Terrestrial Ecosystem Mapping Data (Green 2000).

8.2 Assessment and Review

All OGMA within the Upper Nimpkish were selected by Canfor based on the criteria listed above. The Ministry of Sustainable Resource Management (MSRM) reviewed the OGMA in September 2002 using aerial photograph interpretation. Habitat features and timber harvest constraints were considered in the review to maximize the stand structure and biodiversity components while mitigating timber supply impacts. Revisions were made to the OGMA as per MSRM's recommendations. A field review of a few selected OGMA was conducted in October 2002.

8.3 Amendment Policy

The Ministry of Agriculture and Lands Coast Region amendment policy (formerly MSRM Coast Region) provides direction for allowable OGMA modifications. Amendment procedures involve minor or major amendments for significant resource development (e.g. roads, bridges, boundary issues, rock quarries & gravel pits) or relocation of OGMAs as well as acceptable management activities and review procedures. The amendment procedures can be viewed at <http://srmwww.gov.bc.ca/cr/srmp/amendments.htm> or in [Appendix III](#).

Permissible activities that allow for some small modifications to OGMAs are provided in the legal objectives.

9.0 Old Seral Forest Representation

9.1 Old Growth Management Areas

The Upper Nimpkish LU was ranked as an “intermediate” 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 6](#)).

As stated above, Species at Risk within the Upper Nimpkish LU, especially Queen Charlotte goshawk, and marbled murrelet, and Ungulate Winter Range were the primary consideration for OGMA selection. Secondary consideration included ecosystem representation, potential red and blue listed ecological communities, bald eagle nesting areas, karst, and cultural features. In most BEC units, the OGMAs and selected forest within Protected Areas combined exceed the old seral representation target set in the LUPG ([Tables 6 and 7](#); and [Appendix IV \(map\) and V](#)).

Table 6. Summary of Upper Nimpkish OGMA targets by BEC unit.

BEC Unit	Productive Forest ¹		Total (ha)	Old Seral Target (ha)
	TFL 37 (ha)	Protected Area (ha)		
CWHxm2	5,231.9	7.0	5,238.9	471.5
CWHmm1	15,409.9	279.5	15,689.4	1,412.1
CWHvm1	22,292.9	3,509.3	25,802.2	3,354.3
CWHvm2	26,167.3	2,596.2	28,763.5	3,739.3
MHmm1 ²	13,943.2	2,334.5	16,277.7	3,092.8
Total	83,045.2	8,726.5	91,771.7	12,070.0

¹ Area of non-productive forest has been removed, i.e. rock, ice, water, and alpine forest.

² Due to the abundance of low volume, productive forest stands in the MHmm1 that are unsuitable for OGMA designation, all stands <200m³/ha were removed from the target calculations.

Table 7. Summary of Upper Nimpkish OGMA and Protected Areas used to contribute toward old seral targets by BEC variant.

BEC Unit	OGMA Old (ha)	OGMA Recruitment ¹	PA (old) (ha) ²	PA (recruit) (ha) ³	Total Area (ha)	Old Seral Target (ha)	Shortfall/ Surplus (ha)
CWHxm2	390.4	219.0	0.0	0.0	609.4	471.5	137.9
CWHmm1	940.3	117.3	267.8	2.7	1,328.1	1,412.1	-84.0
CWHvm1	2,433.4	65.4	964.3	17.9	3,481.0	3,354.3	126.7
CWHvm2	2,601.5	54.6	1,106.6	9.3	3,772.0	3,739.3	32.7
MHmm1	2,100.4	75.0	1,200.4	19.2	3,395.0	3,092.8	302.2
Total	8,466.0	531.3	3,539.1	49.1	12,585.5	12,070.0	515.5

¹ defined as productive forest within an OGMA that is <250 years old. The majority of the identified recruitment is within previously unharvested mature forest resulting from natural disturbance events and possessing some old forest characteristics. See Appendix V for details.

² includes: (i) CWHmm1: all productive forest, $\geq 300\text{m}^3/\text{ha}$ in old growth within VILUP Goal 1 Parks and previously unharvested productive forest <250 years old; (ii) CWHvm1: very high potential marbled murrelet nesting habitat within Protected Areas; (iii) CWHvm2: very high and high marbled murrelet nesting habitat within Protected Areas; (iv) MHmm1: very high, high, moderate, and low potential marbled murrelet nesting habitat from pre1995 Schoen Park and all old growth within Goal 1 Protected Areas from VILUP $\geq 300\text{m}^3/\text{ha}$ and previously unharvested productive forest <250 years old.

³ defined as productive forest in Protected Area between 50 and 249 years old.

An effort was made to include OGMA of variable size throughout the Upper Nimpkish LU (Table 8). A total of 203 polygons have been mapped varying in size from 2 hectares to 312 hectares. The average size is 47.9 ha. For a summary of forest characteristics within OGMA, see Appendix V.

Table 8. Patch size distribution of OGMA in the Upper Nimpkish LU.

Area Class	Area (ha)	Percent of total area
<50 ha	2,465.6	25.3
50.1-100 ha	2,445.5	25.0
100.1-200 ha	3,223.4	33.0
>200 ha	1,630.1	16.7

9.1.1 VANCOUVER ISLAND LAND USE PLAN HLP ORDER

All Special Management Zones are required to have at least 25% of the forested land base classified as mature (≥ 80 years old in the CWH and/or ≥ 120 years old in the MH). Although it is not the intent to manage this objective solely through OGMA, a significant portion of the target is achieved through OGMA. In SMZ 11 (Upper Nimpkish portion only), mature + old target is met through OGMA (Table 9). In SMZ 6 (Upper Nimpkish portion only), 41.6% of the target is met through OGMA (Table 9). In SMZ 9, nearly 50% of the target is achieved through OGMA (Table 9).

Table 9. Summary of seral stage targets, current state (as of March 2002) and OGMA area by Special Management Zone within the Upper Nimpkish LU.

Special Management Zone	Productive Forest Area (ha)	Mature Target (ha) ²	Current State (ha) ³	OGMA Contribution (ha)	% achieved through OGMA
SMZ 6 ¹	1,806.6	450.9	1,590.3	187.7	41.6
SMZ 9	14,013.4	3,503.7	4,655.6	1,727.6	49.3
SMZ 11 ¹	2,055.4	513.9	1,776.0	520.5	101.3

¹ Upper Nimpkish LU portion only

² $\geq 25\%$ of forested area of each SMZ must be ≥ 80 years old in CWH and/or ≥ 120 years old in MH.

³ Current to March 2002

9.1.2 TIMBER HARVESTING LAND BASE IMPACTS

The total impact to the THLB in the Upper Nimpkish LU is 1,067 ha which equates to 1.9 % (1,067/54,923*100) of the total THLB and 4.2% (1,000/23,627*100) of the 1997 >80 year old THLB (as of Jan 1, 1997). The impact is the same (1,000/24,030*100) using >60 year old THLB as a surrogate for short-term impact.

In order to achieve the landscape level targets, nearly 21% of the mapped OGMA area in the CWHmm1 was within the THLB. This is primarily due to a high proportion of the land base being operable (Table 10).

Table 10. Timber Harvesting Land Base impacts by BEC unit.

BEC Unit	Old Seral Landscape-level Target (ha)	Mapped OGMA (ha)	Estimated THLB Impact (ha)	% of Old Seral Target ¹
CWHxm2	471.5	609.4	15.6	3.3
CWHmm1	1,412.1	1,057.6	294.8	20.9
CWHvm1	3,354.3	2,498.8	136.1	4.1
CWHvm2	3,739.3	2,656.1	399.2	10.7
MHmm1	3,092.8	2,175.0	254.6	8.2
Total	12,070.0	8,996.9	1,100.3	9.1

¹ Estimated THLB impact / Old Seral landscape level target*100%

9.2 Marbled Murrelet

Low-level aerial reconnaissance was used to classify marbled murrelet nesting habitat in the Upper Nimpkish Landscape Unit in 2002/2003 and 2003/2004. This classification system uses a 1-6 rating with Class 1 being the best (All favourable Marbled Murrelet habitat attributes present in abundance including a high number of visible mossy platforms) to Class 6 (non-forested areas and forest <80 years old) (Deal and Smart 2004).

A total of 31,151 ha of Class 1-4 habitat were identified within the LU in 2002. Of this, 4,490 ha (Class 1-4) or 14.4% of the 2002 potential nesting habitat were identified within the OGMAs (Table 11). An additional 5,778.5 or 18.5% was identified in Protected Areas (Class 1-4). Therefore, the total conserved by Protected Areas and the OGMAs is 32.9% of the 2002 potential nesting habitat (Class 1-4).

A conservation plan (Deal and Harper 2004) for marbled murrelet nesting habitat has been completed and the plan was fully implemented in January 2005. Surveys conducted on the TFL indicated that some drainages have more murrelet detections than others. These drainages tended to be more topographically diverse. In order to meet population targets set by the Marbled Murrelet Recovery Team (2002), Canfor felt that additional areas outside OGMAs were needed to capture some key pieces of habitat to minimize the risk to the species. Priority was placed on the drainages with the higher densities. As a result, an additional 1,218 ha of old seral habitat was identified in the Upper Nimpkish LU, outside OGMAs, as conservation areas for marbled murrelet.

Table 11. Area (ha) of potential marbled murrelet nesting habitat by class and BEC unit within mapped OGMAs.

BEC Unit	Habitat Class				Total (ha)
	1	2	3	4	
CWHxm2	0	85.1	30.1	0	115.2
CWHmm1	80	377.7	178.9	13.6	650.2
CWHvm1	208.7	384.5	395.5	174.4	1,163.1
CWHvm2	0	258.6	865.1	416.1	1,539.8
MHmm1	0	26.6	438.1	556.9	1,021.6
Total (ha)	289.7	1,134.5	1,910.7	1,165.0	4,489.9

9.3 Wildlife Tree Retention

The Wildlife Tree Committee of British Columbia defines a wildlife tree as “*any standing dead or live tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife*”. Wildlife Tree Retention (WTR) is the primary method for managing stand structure and biodiversity at the stand scale. Wildlife trees can be retained in patches or as individual trees.

Canfor currently follows the wildlife tree retention targets outlined in Table 20(b) of the Biodiversity Guidebook (Sept. 1995). This is consistent with Table A3.2 of the LUPG (1999). In February 2000, government released the Provincial Wildlife Tree Policy and Management Recommendations (<http://www.for.gov.bc.ca/hfp/Pubswildlifetrees.htm>).

Wildlife Tree Retention (WTR) targets were recalculated in 2005 to: (i) use current data on amount of area harvested without WTR; (ii) use BEC variant based on 1:20,000 Terrestrial Ecosystem Mapping rather than BEC variant data used for the Regional Land Use Planning database at a 1:250,000 scale; and (iii) reflect the Provincial Wildlife Tree Policy (2000).

Achievement of WTR targets will be based on a 5 year rolling average. For the Upper Nimpkish LU, this will be measured by total harvest area (Net Area to be Reforested + permanent road area) by BEC subzone. Monitoring WTR achievement will be on a calendar year basis. The WTR targets are: CWHxm – 13%; CWHmm – 14%; CWHvm – 9%; and MHmm – 3% (Table 12).

Table 12. Wildlife tree Retention (WTR) targets by BEC subzone, based on harvest area, for the Upper Nimpkish LU.

BEC Unit	WTR Target (%)
CWHxm	13
CWHmm	14
CWHvm	9
MHmm	3

10.0 Timber Supply Mitigation

During delineation of OGMA for priority biodiversity provisions, an attempt was made to mitigate the short and long-term impacts on timber supply. Although OGMA were considered first in the non-contributing forest land base, the non-contributing land base did not always satisfy all requirements to address suitable, representation of old forest attributes or Species at Risk habitat. Where this occurred, portions of the THLB from most constrained to least constrained were assessed and included as OGMA.

OGMA were chosen in the oldest available age class first, however, OGMA were not considered where Category A cutblocks had been identified in the Forest Development Plan (FDP). Canfor planning staff were involved in the delineation of OGMA boundaries in an attempt to mitigate timber supply impacts within the Lower Nimpkish LU. This consultation verified the accuracy of non-contributing forest land base boundaries.

The recent creation of the Woss Lake and Claude Elliot Lake Provincial Parks, and the recent expansion of Schoen Lake Provincial Park have secured three new conservation areas, which complement existing Protected Areas to support the resource values of recreation, biodiversity, cultural heritage, wildlife and scenic viewing. To this end, both parks were considered acceptable to MSRM as valuable in contributing towards meeting the biodiversity targets, both quantitatively and spatially across the landscape unit. Since the suitable old forest representation exceeds requirement for most old targets, Canfor based its selection of old seral forest based on:

- (1) **CWHxm2**: old forest representation from Protected Areas was not required to meet the landscape level targets, however, 6.9 ha of productive forest is available.
- (2) **CWHmm1**: all old growth (267.8 ha) within Goal 1 Protected Areas from VILUP $\geq 300\text{m}^3/\text{ha}$ and recruitment areas (2.7 ha).
- (3) **CWHvm1**: to meet the full target of 3,354.3 ha an additional 982.2 ha has been selected from Protected Areas as contributing towards the biodiversity target. This area is comprised of very high potential marbled murrelet nesting habitat class within VILUP Goal 1 Parks only. In addition to this, Protected

Areas provide 2,195.7 ha of productive forest with a minimum volume of 300m³/ha in VILUP Goal 1 Parks.

- (4) **CWHvm2**: to meet the full target of 3,739.3 ha an additional 1,115.9 ha has been selected from Protected Areas as contributing towards the biodiversity target. This area is comprised of very high and high potential marbled murrelet nesting habitat class from all Protected Areas. In addition to this, Protected Areas provide 1,287.2 ha of productive forest with a minimum volume of 300m³/ha in VILUP Goal 1 Parks.
- (5) **MHmm1**: to meet the full target of 3,092.8 ha, an additional 1,219.6 ha has been selected from Protected Areas as contributing towards the biodiversity target. This area is comprised of very high, high, moderate and low potential marbled murrelet nesting habitat class from pre1995 Schoen Park; and all old growth within Goal 1 Protected Areas from VILUP $\geq 300\text{m}^3/\text{ha}$ and suitable natural recruitment.

Except for pre-1995 Schoen Lake Park, all productive forest, <250 years old, was deemed appropriate for old seral recruitment and all productive forest ≥ 250 years old with a minimum volume of 300m³/ha was determined to be available to contribute towards old seral representation. Since digital forest cover was not available for pre1995 Schoen Park, suitable marbled murrelet nesting habitat (Class 1 [very high] - 4 [low]), as determined by low-level helicopter reconnaissance classification, was used as a surrogate for contribution toward old seral representation.

The mapped OGMA area in CWHmm1 is currently just 84 ha below target. Due to the high number of fish streams in the CWHmm1, retention of Riparian Reserve Zone area, as listed in [Table 5](#), will adequately compensate for this shortfall.

11.0 Legal Objectives for the Upper Nimpkish 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 – Upper Nimpkish Landscape Unit

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

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 Upper Nimpkish Landscape Unit map dated August 5, 2005, subject to section 2 below.

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,
- 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 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.

In the case of iii) above, in recognition of surplus suitable old seral forest located in protected areas, riparian reserve zones, or areas required for species at risk management within the Upper Nimpkish Landscape Unit, the requirement to identify OGMA replacement forest will be waived in the CWHxm2, vm1 and MHmm1 variants, provided that the total area of mature and old seral forest maintained in OGMAs plus the contributing old seral forest area in protected areas meets or exceeds the targets in Table A.

Table A: Upper Nimpkish LU Old Seral Minimum Requirements.

BEC Unit	Old Seral Target (ha)
CWHxm2	472
CWHvm1	3,354
MHmm1	3,093
Total	6,919

(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 OGMAs. Salvage within OGMAs 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 OGMAs 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.

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 cutblocks¹, 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.

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

Biogeoclimatic Unit	% WTR requirement of the harvest area
CWHxm	13
CWHmm	14
CWHvm	9
MHmm	3

¹ A minor salvage cutblock is defined as less than 2.0 ha of harvesting and/or less than total volume of 2,000m³ excluding volume from any road clearing width, if the road is required to facilitate the removal of the timber within the minor salvage cutblock.

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.

OBJECTIVE 3 – SPECIAL MANAGEMENT ZONES 6, 9 AND 11

Sustain forest ecosystem structure and function within the portion of Special Management Zones 6, 9, and 11 located within the Upper Nimpkish Landscape Unit, by retaining mature and old forests (≥ 80 years old) on an area covering at least 25 percent of the total forested area of each Special Management Zone portion located within the Landscape Unit.

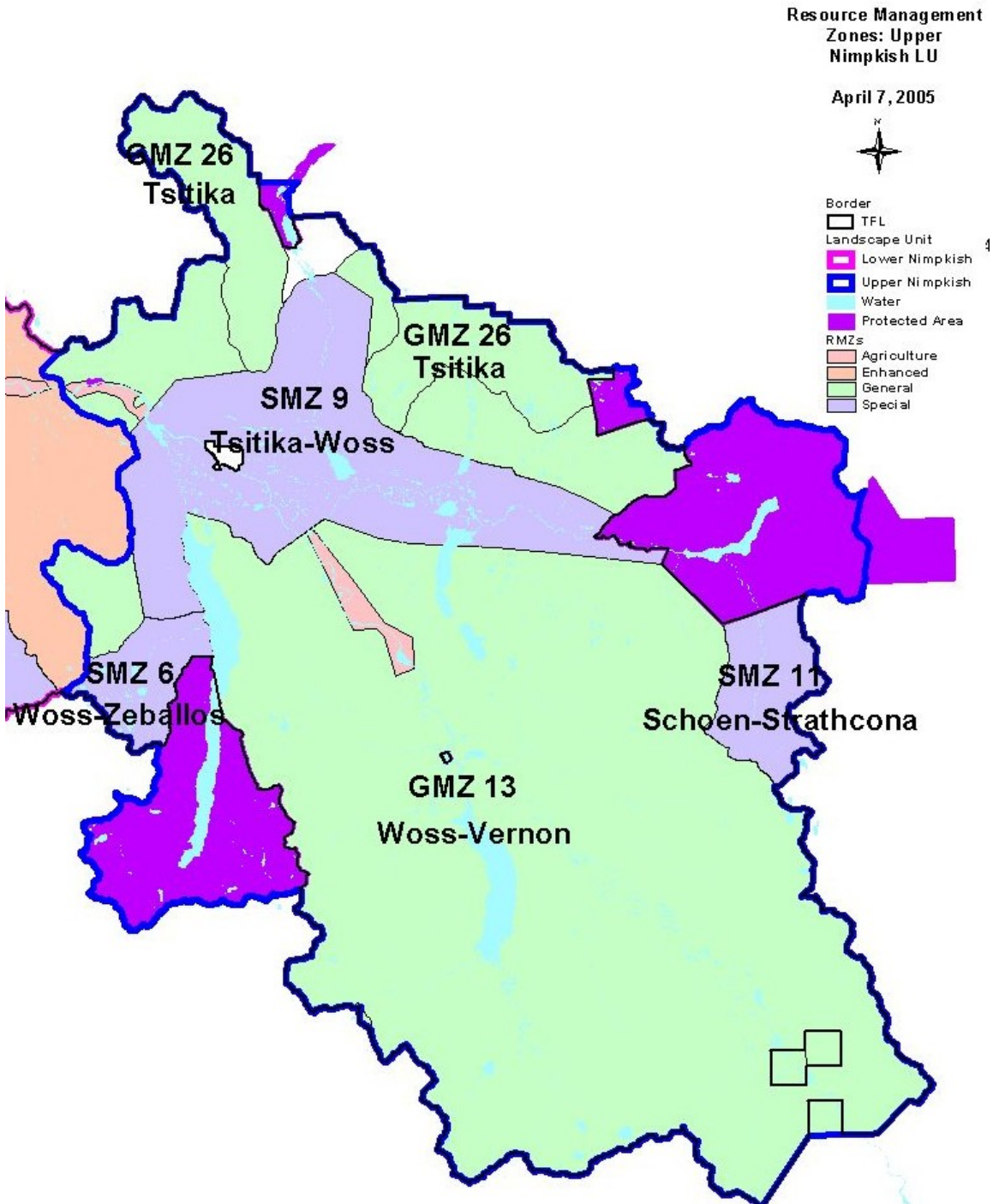
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APPENDICES

APPENDIX I: Map of Resource Management Zones within the Upper Nimpkish LU



APPENDIX II: Vancouver Island Land Use Plan Higher Level Plan 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 mature² and old³ 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 SMZ⁴; 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 cutblocks⁵, structural forest attributes and elements with important biodiversity functions⁶; and

² 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.

³ 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.

⁴ 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 applied⁷.
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.

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 biodiversity⁸ in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems, by retaining old seral forest at the site series/surrogate level of representation⁹.

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

C. for 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,
- (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

⁵ Within cutblocks: generally means non-contiguous with cutblock boundaries.

⁶ This includes, but is not limited to snags, wildlife trees, and downed logs.

⁷ Maximum cutblock sizes refer to net area to be reforested.

⁸ 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.

⁹ The level of representation of old seral forest will be applied through landscape unit planning.

(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 shortfall¹⁰.

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 Strategy¹¹; and
 - (c) ecologically suitable second growth forest is identified to recruit the shortfall.¹²

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.

¹⁰The 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.

¹¹ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

¹²The 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.

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
- such recruitment is necessary to avoid severe social and economic consequences;
 - such recruitment will not impact the ability to conserve suitable habitat of identified wildlife in accordance with the Identified Wildlife Management Strategy¹³; and
 - ecologically suitable second growth forest is identified to recruit the shortfall.¹⁴

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 targets¹⁵ and marbled murrelet habitat requirements¹⁶ in the non-contributing¹⁷ 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 habitat¹⁸.

III. Transition

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.

¹³ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

¹⁴ The 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.

¹⁵ See "Landscape Unit Planning Guide", March 1999.

¹⁶ See "Managing Identified Wildlife: Procedures and Measures", Volume 1, February 1999.

¹⁷ Non-contributing: the crown forested land base that does not contribute to the annual allowable cut, but does contribute to biodiversity objectives and targets.

¹⁸ Retention or recruitment of old growth forests will be achieved through the establishment of old growth management areas as part of landscape unit planning.

IV. Filing the Order

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

APPENDIX III: 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'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, 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/arcddata.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 ≥10 ha to <50 ha in size where the proposed development affects the OGMA by <5 ha,
 - iii) OGMA ≥50 ha to <100 ha in size where the proposed development affects the OGMA by <10ha,
 - iv) OGMA ≥100 ha in size where the proposed development affects the OGMA by <10%.
 - v) Construction of ≤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.

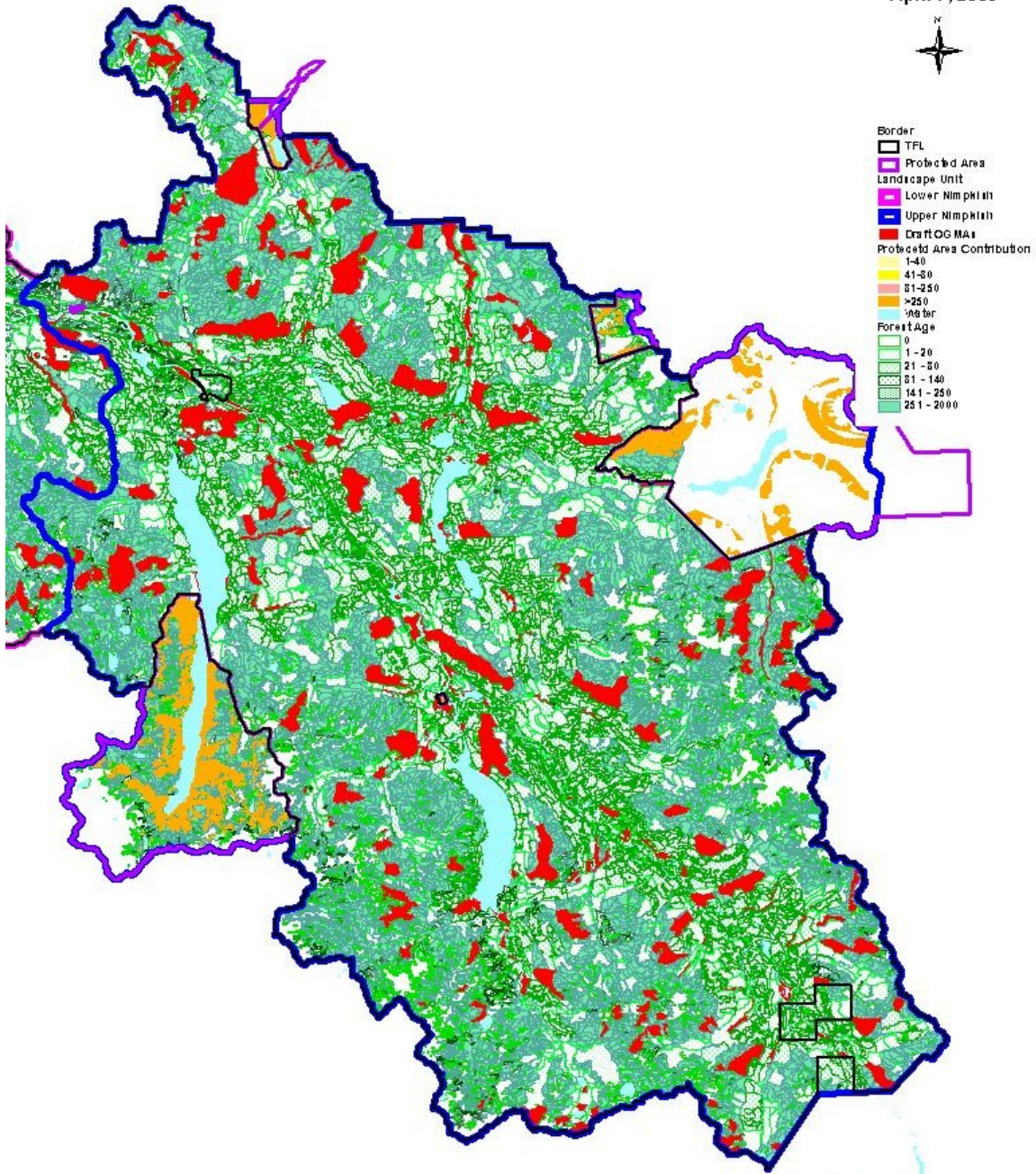
2. OGMA boundaries do not have to be legally surveyed; however the legal standard of measurement for locating OGMA boundaries is 1:20000 scale TRIM base map.
3. To deal with a discrepancy between an OGMA boundary and actual on-the-ground development, the following may be proposed to accommodate areas 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 OGMAs, 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 OGMAs. 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 OGMAs and whether replacement areas will be considered.

APPENDIX IV: Map of Proposed OGMA's for the Upper Nimpkish Landscape Unit

Upper Nimpkish LU:
Draft OGMA's and
Contributing Old Seral
within Protected Areas

April 7, 2005



Appendix V: OGMA Characteristics

Seral Stage Distribution

BEC Unit	Forest Age Class				Total
	1-40	41-80	81-250	>250	
CWHxm2	17.6	73.5	128.2	390.4	609.7
CWHmm1	20.8	82.3	13.6	940.3	1,057.0
CWHvm1	11.2	10.0	43.9	2,433.4	2,498.5
CWHvm2	7.3	28.7	18.2	2,601.5	2,655.7
MHmm1	5.4	50.6	18.5	2,100.4	2,174.9
Grand Total	62.3	245.1	222.4	8,466.0	8,995.8

Tree Species Volume by OGMA

OGMA Label	Fd (m ³)	Hw (m ³)	Hm (m ³)	Ba (m ³)	Cw (m ³)	Yc (m ³)	SS (m ³)	Pine (m ³)
UN-001	7,969	29,472	0	121	6,170	4,251	0	0
UN-002	2,590	3,239	0	0	649	0	0	0
UN-003	746	2,234	0	0	373	0	0	0
UN-004	1,566	850	0	0	3,206	0	263	0
UN-005	9,986	27,880	0	77	6,104	2,018	0	0
UN-006	0	6,111	318	366	0	1,891	0	0
UN-007	0	4,445	0	2,357	2,088	0	0	0
UN-008	0	3,563	0	575	0	1,646	0	0
UN-009	0	992	2,175	137	57	1,378	0	0
UN-010	0	3,784	450	1,013	881	5,308	0	0
UN-011	0	1,633	0	600	593	2,453	0	0
UN-012	0	951	47	1,202	0	1,273	0	0
UN-013	3,943	22,210	0	1,381	9,757	18,202	0	0
UN-014	0	7,977	0	3,525	4,770	0	0	0
UN-015	0	1,922	0	55	0	1,986	0	0
UN-016	0	4,126	1,908	2,550	0	9,706	0	0
UN-017	0	6,072	271	1,735	0	9,002	0	0
UN-018	0	2,340	0	444	0	1,946	0	0
UN-019	0	11,142	0	1,948	0	6,781	0	0
UN-020	390	2,345	0	0	1,169	0	0	0
UN-021	0	4,194	0	374	7,084	0	0	0
UN-022	2,704	7,733	0	487	2,234	647	0	0
UN-023	0	26,891	10,327	2,541	632	13,338	0	0
UN-024	0	7,958	0	0	8,440	0	0	0
UN-025	1,917	9,414	0	265	0	1,915	0	0
UN-026	0	5,552	8,931	486	0	5,024	0	0
UN-027	0	3,299	0	297	2,401	0	0	0
UN-028	0	665	0	0	1,549	0	0	0
UN-029	0	918	0	0	1,378	0	0	0
UN-030	0	3,216	0	172	1,247	25	0	0
UN-031	0	245	3,722	596	0	1,212	0	0
UN-032	0	2,807	1,413	290	0	3,408	0	0
UN-033	0	15,874	1,564	1,691	437	12,380	0	0
UN-034	8,180	21,354	0	2,632	8,656	1,946	0	0
UN-035	0	15,239	0	15,954	7,910	0	0	0
UN-036	15,102	49,266	0	44	34,547	6,858	0	0
UN-037	9,060	32,667	0	2,087	1,436	7,449	0	0
UN-038	0	6,090	0	229	0	7,494	0	0
UN-039	683	585	0	0	52	0	0	85

OGMA Label	Fd (m ³)	Hw (m ³)	Hm (m ³)	Ba (m ³)	Cw (m ³)	Yc (m ³)	SS (m ³)	Pine (m ³)
UN-040	1,108	1,107	0	0	8	0	0	0
UN-041	809	487	0	0	19	0	0	0
UN-042	1,437	781	0	0	36	0	0	120
UN-043	3,527	2,234	0	0	0	0	0	11
UN-044	10,965	18,809	0	1,404	6,753	0	0	0
UN-045	0	1,003	2,075	69	0	2,921	0	0
UN-046	0	598	1,921	225	0	2,836	0	0
UN-047	0	1,799	3,924	260	0	2,885	0	0
UN-048	807	31,032	3,518	3,335	4,926	9,372	0	0
UN-049	0	497	0	250	1,744	0	0	0
UN-050	1,622	3,055	0	0	1,133	0	0	0
UN-051	31,431	45,917	0	0	1,932	0	0	0
UN-052	1,825	1,960	0	219	1,065	0	0	0
UN-053	863	6,536	0	7,022	7,629	6	0	0
UN-054	0	939	0	314	0	0	0	0
UN-055	0	5,251	0	3,767	3,014	0	0	0
UN-056	7,997	14,417	0	8,837	17,992	3,877	0	0
UN-057	0	3,318	401	361	3	1,225	0	0
UN-058	0	1,072	0	192	0	798	0	0
UN-059	0	494	0	165	0	2,627	0	0
UN-060	0	5,341	396	675	0	8,097	0	0
UN-061	0	1,665	819	0	0	1,597	0	0
UN-062	0	14,204	0	1,428	1,260	2,795	0	0
UN-063	0	338	373	26	0	990	0	0
UN-064	0	0	585	31	0	94	0	0
UN-065	0	6,678	152	1,548	760	4,702	0	0
UN-066	0	18,526	0	18,709	2,219	0	0	0
UN-067	1	5,151	51	766	10	4,352	0	0
UN-068	0	1,401	0	25	0	1,887	0	0
UN-069	0	975	614	221	0	228	0	0
UN-070	0	4,725	475	1,981	0	455	0	0
UN-071	0	18,052	6,259	5,605	2,601	15,860	0	0
UN-072	0	245	5,061	603	0	5,379	0	0
UN-073	0	12,269	580	3,011	0	2,850	0	0
UN-074	52	358	0	0	1,325	0	0	8
UN-075	15,745	56,248	517	2,565	12,861	685	0	0
UN-076	0	6,696	0	8,620	59	0	0	0
UN-077	0	4,118	5,007	1,681	134	1,561	0	0
UN-078	0	1,332	0	743	233	0	0	0
UN-079	0	14,745	1,154	6,715	4,662	2,152	0	0
UN-080	0	423	0	0	0	105	0	0
UN-081	0	1,396	254	0	0	558	0	0

OGMA Label	Fd (m ³)	Hw (m ³)	Hm (m ³)	Ba (m ³)	Cw (m ³)	Yc (m ³)	SS (m ³)	Pine (m ³)
UN-082	0	858	0	123	246	0	0	0
UN-083	2,156	2,156	0	0	1,080	0	0	0
UN-084	62,336	61,654	0	0	3,325	0	0	0
UN-085	0	1,128	0	0	845	0	845	0
UN-086	3,056	1,528	0	0	509	0	0	0
UN-087	7,328	13,632	0	0	13,753	0	0	0
UN-088	2	2,387	0	27	664	0	0	0
UN-089	0	7,953	5,566	5,119	830	8,061	0	0
UN-090	17,455	34,404	0	457	2,491	0	0	0
UN-091	9,484	20,814	0	5,287	12,658	0	470	0
UN-092	12,926	36,788	0	16,567	8,138	185	0	0
UN-093	967	1,615	0	0	0	0	0	0
UN-094	135	1,616	0	135	805	0	0	0
UN-095	10,178	42,842	0	4,070	2,985	2,924	0	0
UN-096	0	4,845	0	1,335	37	850	0	0
UN-097	14,413	57,108	0	6,023	10,387	5,572	0	0
UN-098	0	434	0	0	1,012	0	0	0
UN-099	0	678	0	0	1,018	0	0	0
UN-100	577	432	0	0	287	0	0	0
UN-101	42,781	79,224	0	130	26,614	0	0	1,047
UN-102	3,428	3,239	0	0	1,157	0	0	0
UN-103	3,117	7,223	0	0	2,156	0	0	48
UN-104	533	214	0	0	0	0	0	0
UN-105	0	1,953	0	0	1,301	0	0	0
UN-106	9,630	15,280	0	0	2,463	0	0	0
UN-107	1,374	11,065	0	2,637	3,916	0	0	0
UN-108	0	1,055	0	0	2,459	0	0	0
UN-109	0	12,577	0	443	4,522	2,625	0	0
UN-110	64	21,743	2,369	10,865	2,905	10,937	0	0
UN-111	13,335	35,053	0	7,780	24,041	1,249	0	0
UN-112	0	13,607	2,331	9,287	1,130	2,482	0	0
UN-113	0	3,979	576	1,700	2,244	873	0	0
UN-114	809	21,040	0	4,052	8,865	7,056	0	0
UN-115	19,523	27,783	0	0	15,134	0	0	0
UN-116	1,916	4,299	0	0	3,632	0	360	0
UN-117	0	2,734	0	0	0	0	1,242	0
UN-118	1,583	2,261	0	0	112	0	0	0
UN-119	27,102	29,822	24	29	12,062	915	0	200
UN-120	3,412	1,434	0	0	721	0	0	0
UN-121	1,022	1,782	0	0	798	0	0	0
UN-122	766	1,785	0	0	0	0	0	0
UN-123	17	6,054	0	1,868	1,148	1,163	0	0
UN-124	0	3,423	178	1,479	645	1,294	0	0

OGMA Label	Fd (m ³)	Hw (m ³)	Hm (m ³)	Ba (m ³)	Cw (m ³)	Yc (m ³)	SS (m ³)	Pine (m ³)
UN-125	0	3,936	254	1,450	18	8,258	0	0
UN-126	0	2,077	2,343	3,331	0	9,347	0	0
UN-127	0	9,170	2,551	5,915	134	20,390	0	0
UN-128	0	4,582	0	2,200	2,143	0	0	0
UN-129	23,401	83,394	0	7,003	42,686	12,876	0	0
UN-130	34	199	0	0	100	0	0	0
UN-131	384	1,213	0	0	1,391	0	0	0
UN-132	0	11,753	1,603	5,145	4,666	9,231	0	0
UN-133	0	5,508	2,735	4,016	1,804	8,820	0	0
UN-134	0	6,535	2,868	3,342	810	2,275	0	0
UN-135	0	2,575	5,773	1,731	0	6,699	0	0
UN-136	0	75,602	5,951	37,762	31,539	55,682	0	0
UN-137	0	31,141	4,622	26,098	0	6,876	0	0
UN-138	0	37,805	322	29,973	88	18,735	0	0
UN-139	0	5,932	1,026	6,632	0	124	0	0
UN-140	0	1,498	2,771	2,307	0	9,923	0	0
UN-141	0	15,688	2,417	7,602	13,515	10,528	0	0
UN-142	0	742	1,115	685	0	3,734	0	0
UN-143	0	8,519	4,952	2,826	799	17,114	0	0
UN-144	0	1,466	0	517	4,905	0	0	0
UN-145	0	11,873	0	7,018	8,515	2,887	0	0
UN-146	0	79,087	4,988	20,931	43,068	24,385	0	0
UN-147	1,309	7,882	0	3,400	2,714	0	0	0
UN-148	10,637	35,044	357	817	4,282	14,367	0	0
UN-149	0	159	0	0	1,419	0	0	0
UN-150	0	571	0	0	1,330	0	0	0
UN-151	1,092	1,638	0	0	2,736	0	0	0
UN-152	10,042	12,456	0	0	16,156	0	0	0
UN-153	6,662	13,422	0	0	5,247	0	0	0
UN-154	23,609	25,908	0	0	19,703	0	0	0
UN-155	0	1,365	0	0	2,862	0	0	0
UN-156	6,782	4,598	0	0	4,086	0	0	0
UN-157	896	0	0	0	597	0	0	0
UN-158	335	1,216	0	0	2,678	0	0	0
UN-159	36,209	60,766	0	404	7,337	4,440	0	0
UN-160	2	13,003	0	3,422	5,695	0	0	0
UN-161	0	21,334	0	17,358	36,193	982	0	0
UN-162	0	20,583	0	7,143	15,174	9,315	0	0
UN-163	0	11,904	0	5,563	8,405	734	0	0
UN-164	0	9,946	0	4,610	15,041	0	0	0
UN-165	0	19,468	0	5,488	1,030	21,307	0	751
UN-166	0	3,827	0	771	10,187	0	0	0
UN-167	0	3,930	0	0	6,717	0	0	0

OGMA Label	Fd (m ³)	Hw (m ³)	Hm (m ³)	Ba (m ³)	Cw (m ³)	Yc (m ³)	SS (m ³)	Pine (m ³)
UN-168	68,938	60,760	0	1,593	27,759	0	0	0
UN-169	0	1,668	0	0	2,499	0	0	0
UN-170	574	1,700	0	3,943	4,841	0	0	0
UN-171	20,725	17,491	0	846	18,374	0	0	0
UN-172	0	3,969	0	1,228	7,586	737	0	0
UN-173	1,988	11,723	4,034	4,967	0	5,018	0	0
UN-174	0	8,390	2,247	1,091	0	5,167	0	0
UN-175	0	9,320	2,156	1,610	83	5,224	0	0
UN-176	0	13,088	449	5,856	268	2,173	0	0
UN-177	0	7,916	5,255	834	0	4,719	0	0
UN-178	0	12,301	207	15,989	793	341	0	0
UN-179	0	5,468	894	4,793	426	1,496	0	0
UN-180	0	3,648	945	2,300	0	778	0	0
UN-181	0	9,010	6,819	4,088	1	23,648	0	0
UN-182	0	24,654	3,788	13,103	745	22,183	0	0
UN-183	0	15,488	0	3,039	0	3,457	0	0
UN-184	0	147	2,978	337	0	927	0	0
UN-185	0	7,239	0	816	0	6,526	0	0
UN-186	0	3,776	0	792	0	6,559	0	0
UN-187	0	7,857	1,194	3,014	0	15,057	0	602
UN-188	3,100	18,787	0	6,646	21,609	9,046	0	0
UN-189	193	1,629	0	629	4,782	0	0	0
UN-190	554	15	0	0	346	0	0	0
UN-191	7,413	44,133	0	1,632	11,698	9,954	0	0
UN-192	1,126	1,472	0	0	3,731	0	0	0
UN-193	0	72	0	0	434	0	0	0
UN-194	0	236	0	0	2,115	0	0	0
UN-195	59,519	97,859	0	1	17,456	0	0	0
UN-196	0	561	0	0	1,306	0	0	0
UN-197	907	8,089	0	0	4,257	0	0	0
UN-198	260	2,163	0	0	2,609	0	0	2
UN-199	234	1,877	0	0	2,578	0	0	0
UN-200	9,819	58,956	37	412	4,089	14,100	0	0
UN-201	1,460	22,147	133	66	511	3,324	0	740
UN-202	0	0	1,281	0	0	414	0	0
UN-203	0	4,480	2,161	2,766	0	4,316	0	0
UN-204	26,420	59,221	0	274	17,927	1,963	0	0
TOTAL	739,074	2,491,573	157,532	515,142	849,886	682,773	3,180	3,614

Tree Species Summary

Tree Species	Percent
Douglas-fir	13.6
Hemlock	48.7
Amabilis Fir	9.5
Western red-cedar	15.6
Yellow-cedar	12.5
Other	0.2

Slope and Aspect Class Summary

Slope/Aspect Class	Area (ha)
Gentle Slope (<70%)	2,854.3
Northerly Steep (70-100%)	2,782.3
Northerly Very Steep (>100%)	416.0
Southerly Steep (70-100%)	3,478.9
Southerly Very Steep (>100%)	233.3

Terrain Class Summary

Terrain Class	Area (ha)	% of total
I	1,411.4	14.5
II	1,430.9	14.7
III	2,506.4	25.8
IV	2,918.1	30.0
V	1,457.8	15.0
Total	9,724.6	

Site Series Representation Summary

PRIMARY SITE SERIES SUMMARY

Primary Site						
Series	CWHxm2	CWHmm1	CWHvm1	CWHvm2	MHmm1	Total
01	349.4	468.3	1,064.2	1,280.1	633.8	3,795.8
01s	0.0	0.0	0.5	0.0	0.0	0.5
02	32.0	0.0	54.6	61.3	804.0	951.9
03	68.9	66.5	1,004.6	1,008.7	0.0	2,148.7
04	0.0	0.0	0.0	0.0	6.7	6.7
05	9.0	36.2	55.2	14.4	13.3	128.1
06	37.2	65.4	81.7	59.3	0.0	243.6
06s	0.0	0.0	1.8	0.0	0.0	1.8
07	27.5	210.4	101.2	66.1	137.8	543.0
08	42.7	90.9	0.0	0.0	36.0	169.6
09	2.5	8.8	20.2	1.0	41.9	74.4
10	0.0	0.0	0.9	1.9	0.0	2.8
11	25.8	23.5	0.0	17.2	0.0	66.5
12	27.7	72.9	0.0	0.0	0.0	100.6
13	0.0	0.0	17.2	0.0	0.0	17.2
14	0.0	0.0	35.0	0.0	0.0	35.0
20	1.6	15.5	79.4	190.0	0.0	286.5
21	0.0	0.0	0.0	0.0	179.1	179.1
25	0.4	0.0	28.1	0.0	0.0	28.5
27	0.0	0.0	0.0	0.0	388.3	388.3
31	4.7	6.3	12.0	1.7	10.5	35.2
32	8.0	18.1	2.7	0.0	0.0	28.8
51	0.0	0.0	1.0	12.1	28.0	41.1
54	0.0	0.0	1.7	62.3	147.0	211.0
Barren	0.0	0.1	0.0	0.0	0.0	0.1
Exposed soil	0.0	0.0	0.0	0.0	6.3	6.3
Gravel bar	0.0	1.7	0.0	0.0	0.0	1.7
Gravel pit	0.0	0.0	0.0	0.3	0.0	0.3
Lake	0.0	2.4	0.0	0.2	0.6	3.2
Pond	5.6	6.6	1.3	0.0	1.0	14.5
River	4.3	4.6	6.4	0.0	0.0	15.3
Rock	0.7	0.0	6.8	33.9	33.4	74.8
Talus	0.0	2.6	0.5	0.2	2.7	6.0
TOTAL	648.0	1,100.8	2,577.0	2,810.7	2,470.4	9,606.9

SECONDARY SITE SERIES SUMMARY

Secondary Site Series	BEC Unit					Total
	CWHxm2	CWHmm1	CWHvm1	CWHvm2	MHmm1	
01	109.2	88.1	458.5	428.2	269.6	1,353.6
01s	0.0	0.0	2.1	0.0	0.0	2.1
02	22.3	11.1	139.3	143.9	434.8	751.4
03	58.8	86.5	376.7	460.0	0.0	982.0
04	0.0	0.0	0.0	0.0	36.4	36.4
05	30.5	131.4	59.9	60.4	70.3	352.5
06	108.4	197.6	205.8	505.7	0.1	1,017.6
07	10.1	81.5	171.8	45.7	251.8	560.9
08	0.0	72.2	0.0	0.0	8.9	81.1
09	20.2	14.9	10.6	0.0	102.8	148.5
10	0.0	0.0	6.1	1.7	0.0	7.8
11	0.2	5.9	0.0	3.4	0.0	9.5
12	11.3	80.0	3.9	0.0	0.0	95.2
13	0.0	0.0	12.3	0.0	0.0	12.3
14	0.0	0.0	96.5	0.0	0.0	96.5
20	0.9	0.0	68.0	184.1	0.0	253.0
21	0.0	0.0	0.0	0.0	75.5	75.5
25	21.1	0.0	0.0	0.0	0.0	21.1
27	0.0	0.0	0.0	0.0	195.8	195.8
31	0.0	1.3	35.1	0.6	17.1	54.1
32	1.2	34.9	1.1	0.0	0.0	37.2
51	0.0	0.0	1.6	74.2	193.0	268.8
Exposed soil	0.1	0.0	1.2	0.0	0.8	2.1
Gravel bar	0.0	0.7	0.0	0.0	0.0	0.7
Rock	7.5	11.2	91.8	93.1	293.8	497.4
Talus	0.0	0.0	0.0	0.0	1.9	1.9
(blank)	246.2	283.5	834.7	809.7	517.8	2,691.9
TOTAL	648.0	1,100.8	2,577.0	2,810.7	2,470.4	9,606.9

OGMA Values

OGMA	Area (ha)	UWR*	MAMU*	NOGO*	Keen's bat*	Karst*	Ecol. Rep.*	Rare Plants*	Wildlife*	Primary Value	Comments
UN-001	69.7	P	S	N	N	N	N	N	N	UWR	
UN-002	5.3	N	N	N	N	N	S	P	N	Rare Plants	
UN-003	4.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-004	7.7	N	N	N	N	N	S	N	P	Non_SAR	BAEA
UN-005	67.6	P	N	N	N	N	N	N	N	UWR	
UN-006	21.4	N	N	N	N	N	P	N	N	Eco Rep	
UN-007	10.3	N	N	N	N	N	P	N	N	Eco Rep	
UN-008	11.7	N	P	N	N	N	S	N	N	MAMU	MAMU Class 2/3
UN-009	12.4	N	P	N	N	N	S	N	N	MAMU	MAMU Class 3
UN-010	37.0	N	P	N	N	N	N	N	N	MAMU	
UN-011	15.4	N	P	N	N	N	S	N	N	MAMU	MAMU Class 2/3
UN-012	12.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-013	100.2	P	S	N	N	N	T	N	N	UWR	portion is uwr and mamu, remainder representation
UN-014	22.2	N	P	N	N	N	S	N	N	MAMU	150 M wide mamu strip and some riparian
UN-015	8.5	N	P	N	N	N	N	N	N	MAMU	SOME MAMU
UN-016	35.5	N	P	N	N	N	N	N	N	MAMU	
UN-017	23.6	N	N	N	N	N	P	N	N	Eco Rep	some MAMU Class 3
UN-018	6.8	N	N	N	N	N	P	N	N	Eco Rep	some MAMU Class 3
UN-019	29.4	N	P	N	N	N	N	N	N	MAMU	
UN-020	6.0	N	N	N	N	N	P	N	N	Eco Rep	
UN-021	24.0	N	P	N	N	N	S	N	N	MAMU	
UN-022	21.0	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU; MAMU Class 2
UN-023	106.5	P	N	N	N	N	S	N	N	UWR	
UN-024	22.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-025	26.5	P	N	N	N	N	S	N	N	UWR	

* Values: P = primary; S = Secondary; T = Tertiary; Y = additional values; N = No

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-026	41.0	N	N	N	N	N	P	N	N	Eco Rep	
UN-027	8.4	N	N	N	N	N	P	N	N	Eco Rep	
UN-028	2.8	N	N	N	N	N	P	N	N	Eco Rep	
UN-029	2.8	N	N	N	N	N	P	N	N	Eco Rep	
UN-030	6.5	N	N	N	N	N	P	N	N	Eco Rep	MAMU Class 3 gully
UN-031	11.8	N	P	N	N	N	S	N	N	MAMU	some MAMU Class 3
UN-032	21.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-033	74.1	N	N	N	N	N	P	N	N	Eco Rep	MAMU Class 3 on south side of gully
UN-034	56.7	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU
UN-035	45.2	P	Y	S	N	N	N	N	N	UWR	
UN-036	116.8	P	T	S	N	N	N	N	N	UWR	THLB Impact = NOGO
UN-037	90.9	P	N	N	N	N	N	N	N	UWR	
UN-038	39.2	N	N	N	N	N	P	N	N	Eco Rep	TTWO in area
UN-039	8.9	N	N	N	N	N	S	N	P	Non_SAR	Fishy second growth
UN-040	14.6	N	N	N	N	N	S	N	P	Non_SAR	Fishy second growth
UN-041	8.3	N	N	N	N	N	S	N	P	Non_SAR	Fishy second growth
UN-042	13.9	N	N	N	N	N	S	N	P	Non_SAR	Fishy second growth
UN-043	22.5	N	N	N	N	N	S	N	P	Non_SAR	Very fishy, second growth
UN-044	47.5	N	P	S	N	N	T	N	N	MAMU	Possible additional nogo nests
UN-045	17.1	N	P	N	N	N	S	N	N	MAMU	some MAMU Class 3
UN-046	16.4	N	P	N	N	N	S	N	N	MAMU	some MAMU Class 3
UN-047	22.9	N	N	N	N	N	P	N	N	Eco Rep	some mamu value
UN-048	100.8	N	P	N	N	N	N	N	N	MAMU	
UN-049	4.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-050	11.0	N	N	N	N	N	S	N	P	Non_SAR	Fishy

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-051	162.8	P	N	N	N	N	N	N	N	UWR	
UN-052	6.4	N	P	N	N	N	N	N	N	MAMU	Class 2 MAMU, fishy
UN-053	33.4	N	P	N	N	N	N	N	N	MAMU	Elk Corridor, riparian corridor
UN-054	2.8	N	N	N	N	N	S	N	P	Non_SAR	Fishy
UN-055	20.4	N	P	N	N	N	N	S	N	MAMU	
UN-056	71.8	P	S	N	N	N	N	N	N	UWR	
UN-057	10.5	N	P	N	N	N	S	N	N	MAMU	some MAMU Class 3
UN-058	4.1	N	N	N	N	N	P	N	N	Eco Rep	Fishy, 3 ha of Class 3 MAMU
UN-059	9.8	N	P	N	N	N	N	N	N	MAMU	Small but Class 2 habitat
UN-060	46.8	N	P	N	N	N	N	N	N	MAMU	
UN-061	17.8	N	S	N	N	N	P	N	N	Eco Rep	some Class 4 MAMU
UN-062	60.2	N	P	N	N	N	N	N	N	MAMU	
UN-063	6.7	N	N	N	N	N	P	N	N	Eco Rep	
UN-064	2.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-065	30.2	N	P	N	N	N	N	N	N	MAMU	
UN-066	54.8	T	S	Y	N	N	P	N	N	Eco Rep	no known nogo nest, spatial pattern is correct
UN-067	28.0	N	P	N	N	N	N	N	N	MAMU	Class 3 MAMU
UN-068	7.8	N	N	N	N	N	P	N	N	Eco Rep	
UN-069	5.0	N	N	N	N	N	P	N	N	Eco Rep	
UN-070	20.7	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-071	125.7	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-072	31.4	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-073	29.8	N	P	N	N	N	N	N	N	MAMU	13 ha of Class 3 MAMU
UN-074	3.0	N	N	N	N	N	P	N	N	Eco Rep	
UN-075	162.6	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU; 50 MAMU detections

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-076	19.3	N	P	N	N	N	N	N	N	MAMU	Class 1 MAMU
UN-077	29.8	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-078	2.9	N	N	N	N	N	P	N	N	Eco Rep	Class 2 MAMU
UN-079	78.2	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-080	2.0	N	S	N	N	N	P	N	N	Eco Rep	Class 4 MAMU, high mamu use drainage
UN-081	5.6	N	S	N	N	N	P	N	N	Eco Rep	Class 4 MAMU, high mamu use drainage
UN-082	2.2	N	P	N	N	N	S	N	N	MAMU	Small patch, Class 2 MAMU, high mamu use drainage
UN-083	4.7	N	N	N	N	N	P	N	N	Eco Rep	
UN-084	221.0	P	T	S	N	N	N	N	N	UWR	THLB Impact = NOGO; 5.1 ha of Class 2 MAMU
UN-085	2.3	N	N	N	N	N	S	N	P	Non_SAR	Fishy second growth
UN-086	4.9	N	N	N	N	N	P	N	N	Eco Rep	
UN-087	28.4	P	S	N	N	N	N	N	N	UWR	
UN-088	13.4	N	N	N	N	N	S	N	P	Non_SAR	Riparian
UN-089	87.0	N	P	N	N	N	N	N	N	MAMU	Very High MAMU use area Occupied detection, Class 4/5 habitat
UN-090	92.9	P	S	N	N	N	N	N	N	UWR	
UN-091	44.1	P	T	S	N	N	N	N	N	UWR	
UN-092	81.1	P	T	S	N	N	N	N	N	NOGO	THLB Impact = NOGO
UN-093	4.2	N	S	N	N	N	P	N	N	Eco Rep	MAMU Class 3
UN-094	5.5	N	N	N	N	N	P	N	N	Eco Rep	
UN-095	87.9	P	S	N	N	N	N	N	N	UWR	
UN-096	8.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-097	160.8	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU
UN-098	2.1	N	N	N	N	N	S	N	P	Non_SAR	Riparian
UN-099	2.4	N	N	N	N	N	P	N	N	Eco Rep	
UN-100	3.1	N	N	N	N	N	N	N	P	Non_SAR	BAEA nest

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-101	292.3	N	N	P	N	N	T	S	N	VILUP	VILUP objective 1, some mamu class 3
UN-102	12.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-103	19.2	P	P	N	N	N	N	N	T	MAMU	Class 3 MAMU, eagle nests
UN-104	2.0	N	N	N	N	N	N	P	N	Rare Plants	
UN-105	4.4	N	N	N	N	N	S	N	P	Non_SAR	BAEA
UN-106	40.2	P	N	N	N	N	N	N	N	UWR	
UN-107	24.5	N	P	N	N	N	N	N	N	MAMU	Class 2 MAMU gully
UN-108	5.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-109	40.6	N	P	N	N	N	N	N	N	MAMU	
UN-110	193.5	N	P	N	N	N	N	N	N	MAMU	
UN-111	126.4	P	N	N	N	N	N	N	N	UWR	
UN-112	70.8	N	S	N	N	N	P	N	N	Eco Rep	excellent MAMU structure, high mamu use area
UN-113	25.1	N	P	N	N	N	N	N	N	MAMU	High MAMU use drainage
UN-114	58.5	P	S	N	N	N	N	N	N	UWR	
UN-115	98.9	P	T	S	N	N	N	N	N	UWR	
UN-116	10.0	N	Y	N	N	N	S	N	P	Non_SAR	BAEA, riparian
UN-117	4.7	N	N	N	N	N	N	S	P	Non_SAR	
UN-119	169.0	P	N	N	N	N	N	S	N	UWR	
UN-120	27.9	P	N	N	N	N	N	S	T	UWR	EAGLE NEST
UN-121	6.3	N	N	N	N	N	N	P	N	Rare Plants	
UN-122	4.0	N	N	N	N	N	N	P	N	Rare Plants	
UN-123	14.8	N	P	N	N	N	N	N	N	MAMU	HIGH USE MAMU AREA
UN-124	16.9	N	N	N	N	N	P	N	N	Eco Rep	Class 4 MAMU THLB Impact = MAMU; Occupied MAMU
UN-125	33.1	P	S	N	N	N	N	N	N	UWR	

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-126	36.4	N	S	N	N	N	P	N	N	Eco Rep	Class 4 MAMU
UN-127	91.2	N	P	N	N	N	N	N	N	MAMU	
UN-128	10.9	N	P	N	N	N	N	N	N	MAMU	Class 3 MAMU
UN-129	284.1	P	N	N	N	N	N	S	N	UWR	minor amt of MAMU Class 2-4
UN-130	1.8	N	N	N	N	N	N	P	N	Rare Plants	
UN-131	6.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-132	64.1	N	P	N	N	N	N	N	N	MAMU	
UN-133	65.1	N	P	N	N	N	N	N	N	MAMU	
UN-134	32.8	N	P	N	N	N	N	N	N	MAMU	
UN-135	52.5	N	P	N	N	N	N	N	N	MAMU	
UN-136	312.2	T	S	P	N	N	N	N	N	NOGO	
UN-137	97.2	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-138	142.1	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-139	20.9	N	P	N	N	N	N	N	N	MAMU	High MAMU use area
UN-140	38.5	N	N	N	N	N	P	N	N	Eco Rep	
UN-141	83.8	P	S	N	N	N	N	N	N	UWR	
UN-142	19.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-143	82.8	N	P	N	N	N	N	N	N	MAMU	MAMU Class 2/3 Gullies
UN-144	29.7	N	P	N	N	N	N	N	N	MAMU	Class 1/6 Mamu
UN-145	36.1	P	S	N	N	N	N	N	N	UWR	
UN-146	248.7	P	T	S	N	N	N	N	N	UWR	
UN-147	21.3	P	S	N	N	N	N	N	N	UWR	
UN-148	119.2	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU
UN-149	1.9	N	N	N	N	N	N	P	N	Rare Plants	
UN-150	3.4	N	N	N	N	N	P	N	N	Eco Rep	

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-151	7.0	N	N	N	N	N	P	N	N	Eco Rep	MAMU Class 2
UN-152	47.1	P	S	N	N	N	N	N	N	UWR	
UN-153	32.5	P	S	N	N	N	T	N	N	UWR	THLB = MAMU; Nesting MAMU suspected
UN-154	135.5	S	T	P	N	N	N	Y	Y	NOGO	Eagle nest
UN-155	5.9	N	N	N	N	N	T	P	S	Rare Plants	
UN-156	23.1	P	S	N	N	N	N	N	N	UWR	Class 3 MAMU
UN-157	2.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-158	6.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-159	172.8	P	N	N	N	N	S	N	N	UWR	THLB Impact = Ecol Rep
UN-160	24.3	P	S	N	N	N	N	N	N	UWR	
UN-161	110.8	P	S	N	N	N	N	N	N	UWR	
UN-162	69.5	P	S	N	N	N	N	N	N	UWR	
UN-163	33.3	P	S	N	N	N	N	N	N	UWR	
UN-164	33.5	N	P	N	N	N	N	N	N	MAMU	MAMU Class 1
UN-165	117.6	N	P	N	N	N	S	N	N	MAMU	
UN-166	29.3	P	S	N	N	N	N	N	N	UWR	
UN-167	18.7	P	S	N	N	N	N	N	N	UWR	
UN-168	198.3	P	S	N	N	N	N	N	N	UWR	
UN-169	5.0	N	N	N	N	N	P	N	N	Eco Rep	Class 3 MAMU
UN-170	24.9	P	S	N	N	N	N	N	T	UWR	WSOW, BAEA
UN-171	86.2	P	S	N	N	N	N	N	N	UWR	some MAMU Class 2
UN-172	26.3	N	P	N	N	N	N	S	N	MAMU	
UN-173	86.8	N	N	N	N	N	P	N	N	Eco Rep	
UN-174	60.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-175	64.7	N	N	N	N	N	P	N	N	Eco Rep	

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-176	38.0	N	P	N	N	N	N	N	N	MAMU	
UN-177	74.6	N	N	N	N	N	P	N	N	Eco Rep	MAMU Class 3/4 Riparian, VILUP value connectivity
UN-178	48.8	N	N	N	N	N	P	N	N	VILUP	
UN-179	24.7	N	P	N	N	N	N	N	N	MAMU	
UN-180	17.6	N	P	N	N	N	N	N	N	MAMU	
UN-181	111.9	N	N	N	N	N	P	N	N	Eco Rep	
UN-182	130.5	N	P	N	N	N	N	N	N	MAMU	
UN-183	49.5	N	N	N	N	N	P	N	N	Eco Rep	
UN-184	22.6	N	N	N	N	N	P	N	N	Eco Rep	
UN-185	41.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-186	31.1	N	P	N	N	N	N	N	N	MAMU	
UN-187	68.6	N	P	N	N	N	N	N	N	MAMU	
UN-188	80.9	P	S	N	N	N	N	N	N	UWR	
UN-189	11.1	N	N	N	N	N	S	N	P	Non_SAR	Very high density of cavity nesters
UN-190	2.1	N	N	N	N	N	P	N	N	Eco Rep	Rec site, >700 yrs old
UN-191	129.3	N	S	P	N	N	N	N	N	NOGO	
UN-192	17.6	P	N	N	N	N	S	N	N	UWR	
UN-193	2.7	N	N	N	N	N	P	N	N	Eco Rep	
UN-194	2.5	N	N	N	N	N	P	N	N	Eco Rep	
UN-195	271.8	P	S	N	N	N	N	N	N	UWR	THLB Impact = MAMU; Approved MAMU WHA
UN-196	2.1	N	N	N	N	N	P	N	N	Eco Rep	
UN-197	26.0	N	N	N	N	N	P	N	N	Eco Rep	
UN-198	8.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-199	7.3	N	N	N	N	N	P	N	N	Eco Rep	
UN-200	185.8	P	N	N	N	N	S	N	N	UWR	THLB Impact = Ecol Rep

OGMA	Area (ha)	UWR	MAMU	NOGO	Keen's bat	Karst	Ecol. Rep.	Rare Plants	Wildlife	Primary Value	Comments
UN-201	65.7	P	N	N	N	N	S	N	N	UWR	THLB Impact = Ecol Rep
UN-202	5.2	N	N	N	N	N	P	N	N	Eco Rep	
UN-203	50.3	N	N	N	N	N	P	N	N	Eco Rep	
UN-204	144.7	P	S	N	N	N	N	N	N	UWR	some MAMU Class 3

APPENDIX VI: Public Consultation Summary

The advertising period for the proposed Upper Nimpkish Landscape Unit Plan commenced on May 4, 2005 and ran until July 3, 2005. Ads were placed in the North Island Gazette, the Gold River Record and the Campbell River Mirror on May 4, 2005.

In addition to the draft plan, maps and objectives being available at the Ministry of Sustainable Resource Management web site, these items were available for viewing at the Campbell River Forest District Office, the North Island Central Coast Forest District Office in Port McNeill and at the regional Ministry of Forests Office in Nanaimo as well as at the regional office of the Ministry of Sustainable Resource Management.

No comments were received at any time during the 60 day review period.