Sustainable Resource Management Plan

Biodiversity Chapter for

Tretheway Landscape Unit

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Prepared by:

Greg George, RPBio
Forest Ecosystem Specialist
Ministry of Sustainable Resource Management
Coast Region

Lucy Stad, RPF
Planning Forester
Ministry of Sustainable Resource Management
Coast Region

Harry Gill
GIS Analyst
Ministry of Sustainable Resource Management
Coast Region

In cooperation with: Lakeside Pacific Forest Products Ltd
Teal Cedar Products Ltd

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1.0 Introduction

This report provides background information used during the preparation of the Sustainable Resource Management Plan and associated proposed legal objectives for the Tretheway Landscape Unit (LU). Specifically, this report will form the biodiversity conservation chapter of the plan. A description of the planning unit, discussion on significant resource values, and an Old Growth Management Area (OGMA) summary and rationale are provided.

Biological diversity or biodiversity is defined as: *'the diversity of plants, animals and other living organisms in all their forms and levels of organisation, and includes the diversity of genes, species and ecosystems as well as the evolutionary and functional processes that link them'*[1]. British Columbia is the most biologically diverse province in Canada. In British Columbia, 115 species or subspecies of known vertebrates and 364 vascular plants are listed for legal designation as threatened or endangered[2]. The continuing loss of biological diversity will have a major impact on the health and functions of ecosystems and the quality of life in the province (Resources Inventory Committee, 1998).

Planning for OGMA and Wildlife Tree Patch (WTP) biodiversity values is recognized as a high priority for the province. LU planning is an important component of the *Forest Practices Code of BC Act (FPC)* which allows legal establishment of objectives to address landscape level biodiversity values. Implementation of this initiative is intended to help sustain certain biodiversity values. Managing for biodiversity through retention of old growth forests is not only important for wildlife, but can also provide important benefits to ecosystem management, protection of water quality and preservation of other natural resources. Although not all elements of biodiversity can be, or need to be, maintained on every hectare, a broad geographic distribution of old growth ecosystems is intended to help sustain the genetic and functional diversity of native species across their historic ranges.

The Chilliwack Forest District has completed draft LU boundaries and assigned draft Biodiversity Emphasis Options (BEO) in accordance with the direction provided by government. There are 24 LUs within the Chilliwack Forest District. Through a ranking process, the Tretheway LU was rated as an Intermediate BEO, which requires that priority biodiversity provisions, including the delineation of Old Growth Management Areas and wildlife tree retention (WTR), be undertaken immediately. This work was completed by the Ministry of Sustainable Resource Management (MSRM), in cooperation with the Fraser TSA Cooperative Association. Funding was provided by the Forest Investment Account and MSRM.

Input from First Nations will be gathered during consultation (prior to public review) between MSRM and individual First Nations. Comment from the public and other

[1] FPC Biodiversity Guidebook, September 1995

[2] BC Species and Ecosystems Explorer. 2003. Victoria, British Columbia. Available at: http://srmapps.gov.bc.ca/apps/eswp/

agencies will be sought during the 60 day public review and comment period. Refer to the attached map for the location of OGMAs.

Supporting documentation regarding government policy, planning processes and biodiversity concepts are provided in the 1995 *Biodiversity Guidebook*, the 1999 *Landscape Unit Planning Guide* (LUPG), the *Vancouver Forest Region Landscape Unit Planning Strategy (1999),* as well as *Sustainable Resource Management Planning Framework: A Landscape-level Strategy for Resource Development*.

2.0 Tretheway Landscape Unit Description

2.1 Biophysical Description

The Tretheway LU is situated on the north-west side of Harrison Lake, it extends south to Kirkland creek and north to the north end of Harrison Lake. The western boundary abuts the Stave River watershed further west at the height of land. The Landscape Unit covers a total area of 33043 ha and includes several smaller stream systems tributary to Harrison Lake. Named watersheds within the LU include Tipella Creek, Tretheway Creek, Bremner Creek, Doctors Creek, Trio Creek and Davidson Creek, a few other smaller unnamed streams are present. Harrison Lake is a large fresh water lake that eventually joins the Fraser River just west of Chilliwack.

Of the total area, 11760 ha (36%) are within the Crown forested land base, and 7392 ha of Crown forest are within the Timber Harvesting Land Base (THLB). The remaining 21283 ha (64%) are non-forested or non-Crown (rock, alpine tundra, water, private land etc.) and have been excluded from any OGMA contributions and calculations.

The entire LU is located within the Pacific Ranges Ecoregion, which is represented almost entirely by the Eastern Pacific Ranges ecosection. Climatic conditions vary most prominently by elevation. Climate in the lower elevation areas along Harrison Lake is characterized by warm, dry summers and moist, cool winters with moderate snowfall. At mid elevations in the LU climate is characterized by moist, cool winters with relatively heavy snowfall and cool but relatively dry summers. High elevations in the LU are characterized by long, moist, cold winters with high snowfall and short, cool, moist summers.

The Tretheway LU has four Biogeoclimatic (BEC) subzones or variants, which fall within three natural disturbance types (NDTs)[3]. The Mountain Hemlock variant – *leeward* moist maritime (MHmm2) lies within NDT 1. The two Coastal Western Hemlock variants – *southern* dry submaritime (CWHds1) and *southern* moist submaritime (CWHms1) falls within NDT2. The landscape unit also has substantial amounts of high elevation non-forested area in NDT5 (Alpine Tundra). A very small

[3] NDT1 encompasses those ecosystems with rare stand-initiating events. NDT2 includes ecosystems with infrequent stand initiating events. NDT5 is Alpine Tundra or other parkland ecosystems that are not considered forested. For a more complete description of NDTs see the *Biodiversity Guidebook* (1995).

portion of the CWH dry maritime subzone (CWHdm) is present in the south corner of the LU but it is insignificant.

In the lower elevation variants, within NDT 2, the Tretheway LU has sustained substantial levels of disturbance. Forested stands on lower elevation productive sites (typically on slopes with low to moderate gradient) have been disturbed by past timber harvesting or other natural disturbance. The low levels of old seral forest remaining within these BEC variants reflects this disturbance history.

2.2 Summary of Land Status

Land status within the Tretheway LU is summarised in Table 1. The Crown forest land base summary is provided in Table 2.

Table 1. The range and distribution of land ownership status for the Tretheway Landscape Unit.

Code	Ownership class	Area (ha)	Percent of total area
40	Private and Crown grants	0	0
52	Indian reserve	0	0
61	Crown UREP	0	0
62	Crown contributing	32913	99.6
63	Parks & Ecological Reserves	0	0
69	Recreation sites and reserves	52	0.2
70	Crown, timber license	76	0.2
	Unclassified	2	<0.1
	Total Area	**33043**	**100.0**

Table 2. Distribution of land area in the Tretheway Landscape Unit on the basis of Biogeoclimatic and Crown Forested Land Base classifications.

BEC Variant	Total Area (ha)	Crown Forested Land Base[1]			Excluded Land Base[2]
		C	PC	NC	X
Unclassified	2				
CWHdm	60	26	0	11	23
CWHds1	8727	3214	1134	798	3581
CWHms1	11075	1344	1609	2521	5601
CWHvm2	36	1	0	4	31
MHmm1	133	0	0	0	133
MHmm2	5332	193	136	674	4330
ATp	7678	0	17	77	7584
TOTAL	**33043**	**4779**	**2895**	**4086**	**21283**

[1] The Crown Forested Land Base is comprised of Contributing (C), Partial Contributing (PC), and Non-Contributing (NC) areas of forested land. C and PC forest make up the Timber Harvesting Land Base (THLB) whereas the NC areas of forested lands do not contribute to the Allowable Annual Cut. The NC includes areas of Provincial Crown Forest considered inoperable due to one or more constraints (e.g., steep terrain, low productivity, which are netted down 100% during TSR analysis) and protected areas (e.g., Class A Provincial Parks and Ecological Reserves).

[2] The Excluded land base is comprised of areas of lands that are non-forest (e.g., rock, lakes, streams, non-productive brush, glacier) and areas of land that cannot be presumed to be maintained as forested ecosystems (e.g., private land or in the control of non-resource management agencies [e.g., The Federal Department of National Defense]).

3.0 Key Resource Tenure Holders

The general premise applied during the planning process was to identify key resource(s) tenure holdings. This assessment included identification of tenures that are administered by agencies such as the Ministry of Forests (MOF), Ministry of Energy and Mines and Crown corporations such as Land and Water British Columbia. For tenure holders, other than those administered by MOF, the management intent generally is to avoid placement of OGMAs within existing tenures. As for tenures administered by MOF, the management intent is to avoid placement of OGMAs over cutblocks and roads that have received approval status; and to minimize OGMA placement in areas that were identified as future harvest opportunities by licensees.

3.1 Forest Tenure Holders

Within the Tretheway plan area, two major licensees operate within volume based forest license tenures. Lakeside Pacific Forest Products Ltd. has a large chart in the southern half of the LU, and Teal Cedar Products Ltd. operates over a large area in the north half. The OGMAs selected do not impact any known approved category “A” cutblocks or roads as identified by licensees during planning meetings. Furthermore, discussions with key licensees have taken place to ensure that the intent of this LU plan is conveyed and impacts on future planned development is minimized.

3.2 Mineral Tenure Holders

There are 8 mineral tenures located near Doctor's Point in the middle of the landscape unit. The selection of OGMAs tried to avoid placement over existing tenure holders and resulted in overlap with one tenure.

The establishment of OGMAs will not have an impact on the status of existing aggregate, geothermal, oil and gas, and mineral permits or tenures. Exploration and development activities are permitted in OGMAs. The preference is to proceed with exploration and development in a way that is sensitive to the old growth values of the OGMA; however, if exploration and development proceeds to the point of significantly impacting old growth values, then the OGMA will be moved.

4.0 Significant Resource Values

4.1 Fish, Wildlife and Biodiversity

Wildlife resources of primary management concern in the Tretheway LU include: spotted owl, black-tailed deer, mountain goat, grizzly bears, fish and some species at risk that are considered "Identified Wildlife"[4]. Many other species occur including forest birds, raptors, small mammals, amphibians and furbearers but their habitat requirements are generally managed within habitat provisions provided for primary species or through access management (e.g. grizzly bears). For example, habitat for spotted owls in the Tretheway is maintained within a Special Resource Management Zone (SRMZ), which covers approximately 9432 ha of gross forested area. Approximately 65% (6144 ha) of the gross forested area is currently suitable owl habitat (>100 years old forest), with a requirement to recruit another 175 ha to reach 67% suitable. This owl habitat would support other forest dependent species.

The Tretheway is also an important area for black-tailed deer and mountain goats. Forested winter range habitat for both species has been identified by MWLAP. All or a portion of the winter habitat areas are being considered for legal establishment as Ungulate Winter Range (UWR) under the FPC according to management plans developed by MWLAP (Jex, 2002; Freeman, 2001 & 2002). Some of the UWR overlaps with Spotted Owl SRMZ and some of each species habitats have been captured in OGMA. The habitat maintained for ungulates would also benefit other forest dependent species.

Further, most of the named stream systems support anadromous (lower reaches only) and/or resident salmonid populations. Riparian reserve zones established (as per the FPC) adjacent to these fish streams will help maintain fish and wildlife habitat. Where riparian areas have been logged, habitat will be provided in the future as it re-grows.

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

Grizzly bears in the Tretheway LU are part of the threatened Garibaldi-Pitt grizzly bear population unit for which a Recovery Plan has yet to be developed. In general, the Recovery Plan once completed will include objectives and strategies to protect and/or enhance grizzly bear habitat values. Grizzly bears are also an Identified Wildlife species. Provisions exist within the Identified Wildlife Management Strategy to protect some critical foraging or security habitat within Wildlife Habitat Areas (WHA). Designation of WHAs may occur as necessary or as part of the Recovery Plan to protect additional grizzly bear habitat in the Tretheway LU.

Other species of Identified Wildlife (e.g. tailed frog) that may be discovered later may receive habitat protection with WHAs as well. In turn, these WHAs will help provide habitat for species not actively managed for. The Conservation Data Center has no records for sensitive species in this LU.

4.2 Timber Resources

The presence of a substantial timber harvesting land base establishes the importance of timber resource values. Continued access to commercially valuable timber, including future second growth, is a significant concern. First pass harvesting of accessible old growth timber is nearing completion.

Commercially valuable tree species in the Tretheway LU by elevation are: Douglas-fir, western red cedar and to a lesser extent western hemlock at lower elevations. Mid elevation forests are dominated by western hemlock, Douglas-fir and amabilis fir with minor amounts of western red cedar. High elevation forests are dominated by amabilis fir and hemlock. Based on forest cover information, Table 3 shows the age composition of forests in the Tretheway LU.

Table 3. Age distribution of forests within the Tretheway Landscape Unit.

Age	% of Forested Land base within Provincial Forest
0-60	4319
61-140	1463
141-250	928
251+	4949

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

4.3 Private Land

There is no private land in the Tretheway landscape unit, although a power transmission line extends north south throughout the LU.

4.4 Water

There are no Community Watersheds within the Tretheway Landscape Unit.

4.5 Recreation

The Tretheway LU receives low public recreation use mostly due to its remote location and difficult access. There are no provincial parks within the landscape unit, nor are there any Recreation Sites or trails. Summer and fall recreational activities include: 4 wheel drive and ATV use, hunting, as well s opportunistic wildlife viewing and sightseeing. Some harvest of botanical forest products is possible from the main access road. Winter recreational activity (off the main valley road) is normally restricted by seasonal road deactivation and snow accumulation, although snowmobiling could occur.

4.6 Sub-surface Resource Values

Subsurface resources (minerals, coal, oil, gas and geothermal) and aggregate resources are commodities valuable to the provincial economy. They are, however, difficult to characterise due to their hidden nature. Currently, comprehensive information is available for mineral potential in this area; aggregate potential for this LU has not been rated and no information regarding energy deposits was available to the planning team.

The Ministry of Energy and Mines has rated the metallic mineral potential of this area as moderate to high and the industrial mineral potential as moderate. Mineral Potential classifies the land base based upon the probability of discovering metallic or industrial mineral ore deposits in that area. Resource assessment tracts are based on areas of similar geology when assessed at the 1:250 000 scale. Mineral Potential classification was carried out on each tract with strong input from mineral industry experts and the use of other valuable databases such as MINFILE, exploration assessment reports, regional geochemical survey data, geophysical data, descriptive mineral deposit profiles and deposit models. Techniques used to derive Mineral Potential rankings followed those outlined in the United States Geological Survey Mineral Assessment Methodology[5], with some modifications. Assessments of estimated undiscovered metallic resources were based on gross in place value (GIPV) and processed through the USGS Mark3B Mineral Resource Assessment Monte Carlo simulator[6]. Undiscovered industrial mineral assessments were based on Relative Deposit Value Score (RDVS). RDVS considers

[5] Singer, D.A., 1993, Basic concepts in three-part quantitative assessments of undiscovered mineral resources: Nonrenewable Resources, v. 2, n. 2, p. 69-81.

[6] Root, D.H., Scott, W.A. Jr. and Schruben, P (1998): Mark3B Resource Assessment Program for Macintosh; US Geological Survey, USGS Open File Report 98-356.

commodity unit value, potential markets, deposit grade and tonnage, transportation costs, infrastructure and extraction costs.

5.0 Existing Higher level Plans

Higher Level Plan objectives are one provision under the FPC that enables specific forest resource management objectives to be made legally binding. Legal objectives established under the Landscape Unit plan will be higher level plan objectives. It is important to note that operational plans must be consistent with higher level plan objectives.

6.0 First Nations

The Tretheway LU is located within the traditional territory of the Sto:lo Nation, Chehalis and In-Shuck-Ch First Nation.

Between 1997 and 1999, an Archaeological Overview Assessment model was developed by MOF to indicate where archaeological sites are most likely located. This was done to minimize potential impacts by forestry operations on culturally important areas. The model was useful in predicting the location of habitation sites and high elevation campsites in the sub-alpine. Travel routes were also identified.

The maps from the model were reviewed to determine if archaeological potential sites or travel routes were captured in OGMAs. In the Tretheway LU, there is low to moderate overlap between OGMAs and old forest stands that exhibit potential for habitation sites, these sites are located on lower slope or valley bottom areas near lakeshores or streams. The maps did not indicate any potential travel routes within the Landscape Unit.

7.0 OGMA Methodology

7.1 Existing Planning Processes

In general, each LU contains varying amounts of mature/old forested habitat provided by existing processes (e.g. some LUs have spotted owl Special Resource Management Zones, some have protected areas) from which to build on for ecosystem management. The FPC ungulate winter range process, once completed, will also help provide a foundation for ecosystem management. In addition, Wildlife Habitat Areas that may be established in future will also improve connectivity; and in the long term, re-establishment of riparian reserve zones to old forest will improve upon ecosystem integrity. The habitat provided by these various processes together with OGMAs provide the fundamental components to achieve a functioning ecosystem.

An important part of the OGMA planning exercise was to ensure that these separate processes complemented each other. For example, OGMAs, where practical, were placed to create larger patches in the vicinity of known spotted owl activity centres. In other cases, OGMAs were placed within or adjacent to ungulate winter range to overlap constraints and to increase patch size. These larger patches then allow greater

opportunity to improve connectivity between adjacent patches. The intent is to maintain (or build) a series of old forest habitat patches across probable movement corridors to allow wildlife dispersal and gene flow. Species such as deer are particularly susceptible to mortality in winter, connecting or aggregating OGMAs may help facilitate deer movement in addition to benefiting biodiversity. Using this approach with stand level biodiversity measures (e.g. Wildlife Tree Patches) will increase the likelihood of sustaining ecosystems and viable wildlife populations well distributed across their natural range.

7.2 Assessment and Review

OGMAs were selected based on a review of stand attributes in an effort to maximize their value from a biodiversity standpoint while minimizing timber supply impact. Spatial distribution of OGMAs throughout the LU was also a selection criterion. A specific rationale for the selection of each OGMA is shown in Appendix 1. In general, opportunities to recruit larger patches to provide for forest interior habitat conditions (to the recommended target) were favoured over smaller patches, although this was difficult in places. In this search, an effort was extended to minimize the impact on timber supply by combining areas in the non-contributing land base with areas in the timber harvesting land base. In addition, a few smaller remnant patches containing old forest were delineated in conformance with the *Landscape Unit Planning Guidebook* (LUPG).

In the Tretheway Landscape Unit, the majority of OGMAs are located in old forest (250+ years) in two of the three BEC variants (CWHms1 and MHmm2). For the remaining variant (CWHds1) it was necessary to designate younger aged immature and mature stands as recruitment OGMAs. Where possible, mature stands that had old forest attributes (e.g. snags, multi-layered canopy) or high resource values (e.g. spotted owl, deer winter range) were chosen as recruitment OGMAs.

7.3 Boundary Mapping

OGMA boundaries used natural or recognizable features, such as creeks or roads, wherever possible to ensure they could be located on the ground. OGMAs were also delineated to include complete forest stands (forest cover polygons) wherever possible to reduce operational uncertainty and increase ease of OGMA mapping. OGMAs were mapped using a 1:20000 scale TRIM base, which forms the legal standard for measurement. Procedures for operating within OGMAs are discussed in the OGMA Amendment policy.

7.4 Amendment Policy

An MSRM Coast Region policy has been developed and approved to give direction to proponents (forest tenure holders) when applying for amendments to OGMA legal objectives. Amendment procedures cover such things as minor or major amendments for resource development (e.g. roads, bridges, boundary issues, rock quarries & gravel pits)

or relocation of OGMAs. The policy also discusses acceptable management activities and review procedures, and forms an integral part of this LU plan.

7.5 Mitigation of Timber Supply Impacts

During delineation of OGMAs for priority biodiversity provisions an attempt was made to mitigate the short and long-term impacts on timber supply. For example, OGMAs were delineated first in the non-contributing forest land base (almost 71% of OGMAs are within the NC land base). Since representation must be at the variant level, the non-contributing land base could not always satisfy old forest requirements. Where this occurred, portions of the timber harvesting land base from most constrained to least constrained were assessed and included as OGMAs. Generally, more THLB was required in lower elevation variants due to a longer disturbance history and lesser amounts of non-contributing forest land.

OGMAs were chosen in the oldest available age class first, however, old forest stands that were approved or proposed for harvesting on Forest Development Plans (FDP) were excluded from candidate OGMAs following direction outlined in the *Landscape Unit Planning Guide*. Licensees also reviewed the maps and identified future harvesting opportunities so that timber supply impacts could be reduced wherever possible.

8.0 Landscape Unit OGMA Analysis for the Tretheway LU

The Tretheway LU was ranked as an Intermediate biodiversity emphasis option through the biodiversity value ranking process completed earlier (see the *Vancouver Forest Region Landscape Unit Planning Strategy*, 1999). This Intermediate designation along with the BEC variant determines the percentage of the Crown forest land base that will be designated as OGMA. Table 4 outlines the total amount of OGMA required and actually established in each variant and from which Crown forest category (i.e. Non Contributing-NC; Timber Harvesting Land Base)[7]. The old growth target figures in Table 4 are derived from Appendix 2 in the *Landscape Unit Planning Guide*. See Appendix 1 for OGMA attributes and a rationale; and the attached map for location of OGMAs.

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

Table 4. Old growth management area (OGMA) requirements for the Tretheway Landscape Unit.

BEC Variant	Full OGMA Target (ha)	Established OGMAs (ha)	Delineated OGMAs							
			Non-Contributing (NC)				Part. Contrib. (PC)		Contributing (C)	
			Protected Areas		Non-PA					
			%	ha	%	ha	%	ha	%	ha
CWHds1	463	465.2	0	0	54	252.7	26	121.5	20	91.0
CWHms1	493	499.7	0	0	79	396.6	3	17.0	17	86.1
MHmm2	190	197.5	0	0	91	180.3	2	3.3	7	13.8
Total	**1146**	**1162.4**	**0**	**0**	**71**	**829.6**	**12**	**141.8**	**16**	**191.0**

NDT 1: MHmm2.
NDT 2: CWHds1, CWHms1.

9.0 Wildlife Tree Retention

Wildlife tree retention is managed at the stand level and maintains structural diversity within managed stands by retaining wildlife trees immediately adjacent to or within cutblocks. The WTR percentage by BEC subzone is described in Table A of the *Legal Objectives*. Retention percentages will meet the targets outlined in the LUPG for each BEC subzone.

The retention percentage does not have to be fully implemented on a cutblock-by-cutblock basis. Instead, the retention target may apply over a larger area (e.g. FDP or equivalent), so long as the retention target is met each 2 year period. The intent is to provide limited flexibility at the cutblock level provided that the legally required percentage is met across the subzone. Since wildlife tree retention is a stand level biodiversity provision, wildlife tree patches are also to be distributed across each subzone and the landscape unit.

10.0 Landscape Unit Plan Objectives

Landscape unit objectives will be legally established within the framework of the FPC and as such will become Higher Level Plan objectives. Other Operational Plans must be consistent with these objectives.

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

11.0 Appendices

Appendix 1 – OGMA Summary and Rationale – Tretheway LU

Appendix 2 – Acronyms

Appendix 3 – Public Consultation Summary

APPENDIX 1: OGMA SUMMARY AND RATIONALE – Tretheway LU

OGMA #	BEC VARIANT	CONTRIB CLASS	OGMA AREA	THLB AREA	COMMENTS	FDP	WILDLIFE
3	CWH ds 1	N	20.4	0.0		Cutblocks adjacent	
3	CWH ms 1	N	8.9	0.0			
6	CWH ms 1	N	1.1	0.0	Adjacent to large OGMA		
6	MH mm 2	N	1.0	0.0	Adjacent to large OGMA		
7	CWH ms 1	N	3.3	0.0	Adjacent to large OGMA		GWR
8	CWH ms 1	N	0.9	0.0	Adjacent to large OGMA		GWR
8	MH mm 2	N	5.6	0.0	Adjacent to large OGMA		GWR
9	CWH ds 1	C	1.3	1.3			
9	CWH ds 1	N	3.4	0.0			
9	CWH ms 1	N	6.2	0.0			
10	MH mm 2	N	4.0	0.0			
12	CWH ms 1	N	0.2	0.0			SRMZ
12	MH mm 2	N	32.6	0.0			SRMZ
13	CWH ds 1	P	39.2	39.2			SRMZ
13	CWH ms 1	P	1.4	1.4			SRMZ
14	CWH ds 1	N	21.9	0.0			SRMZ
14	CWH ds 1	P	15.5	15.5			SRMZ
15	CWH ds 1	N	15.1	0.0			SRMZ
15	CWH ds 1	P	1.9	1.9			SRMZ
15	CWH ms 1	N	10.5	0.0			SRMZ
15	CWH ms 1	P	1.7	1.7			SRMZ
20	CWH ms 1	N	6.5	0.0		Cutblock adjacent	
22	CWH ms 1	N	10.4	0.0			SRMZ, partial GWR
23	CWH ds 1	N	118.5	0.0	Large patch, interior forest, cross elev linkage, low elev old forest	Cutblock adjacent	SRMZ
23	CWH ds 1	P	63.9	63.4			
23	CWH ms 1	N	1.8	0.0			
23	CWH ms 1	P	13.1	13.1			
25	CWH ms 1	N	6.5	0.0			Grizzly bear habitat

OGMA #	BEC VARIANT	CONTRIB CLASS	OGMA AREA	THLB AREA	COMMENTS	FDP	WILDLIFE
25	MH mm 2	N	4.6	0.0			
27	CWH ms 1	N	2.7	0.0	Riparian		Grizzly bear habitat
27	CWH ms 1	P	0.4	0.0			
27	MH mm 2	N	13.2	0.0			
27	MH mm 2	P	3.3	0.3			
28	CWH ms 1	N	19.7	0.0			SRMZ
28	CWH ms 1	P	0.2	0.0			
29	CWH ds 1	C	0.1	0.1			SRMZ
29	CWH ds 1	N	4.2	0.0			
29	CWH ds 1	P	1.0	1.0			
33	CWH ms 1	N	41.8	0.0	Large patch		SRMZ, partial GWR,
33	MH mm 2	N	20.6	0.0			
34	CWH ds 1	C	22.1	22.1			
42	MH mm 2	N	22.9	0.0			SRMZ
47	MH mm 2	C	11.2	11.2	Valley bottom riparian		Grizzly bear habitat
47	MH mm 2	N	20.5	0.0			
49	MH mm 2	N	6.4	0.0			
54	CWH ms 1	N	15.2	0.0			
54	MH mm 2	N	0.3	0.0			
57	CWH ds 1	C	2.9	2.9		Cutblock adjacent	
58	CWH ds 1	C	1.1	1.1			
58	CWH ds 1	N	11.9	0.0			
59	CWH ds 1	C	11.9	11.9	Large patch, interior forest, cross elev linkage,		
59	CWH ms 1	C	50.9	50.9			
59	CWH ms 1	N	61.9	0.0			
59	MH mm 2	C	2.6	2.6			
59	MH mm 2	N	8.6	0.0			
60	CWH ds 1	N	14.2	0.0	Spatially important, limited low elev old forest		
64	CWH ms 1	N	8.4	0.0			

OGMA #	BEC VARIANT	CONTRIB CLASS	OGMA AREA	THLB AREA	COMMENTS	FDP	WILDLIFE
65	CWH ms 1	N	11.4	0.0			
68	CWH ms 1	N	4.7	0.0	Alpine lake riparian		Grizzly bear habitat
69	CWH ds 1	C	0.8	0.8	Large patch, interior forest, cross elev linkage,		DWR
69	CWH ds 1	C	5.9	5.9			DWR
69	CWH ds 1	N	30.7	0.0			DWR
69	CWH ms 1	C	0.5	0.5		Cutblock adjacent	
69	CWH ms 1	N	93.7	0.0			Partial DWR
69	CWH ms 1	C	0.5	0.5			Partial DWR
69	MH mm 2	N	20.9	0.0			
71	MH mm 2	N	2.9	0.0	mapped as Atp but is forested		SRMZ
71	MH mm 2	N	16.4	0.0			
72	CWH ds 1	C	25.9	25.9	Limited low elev old forest		
72	CWH ds 1	N	3.4	0.0			
72	CWH ms 1	C	4.1	4.1			
75	CWH ms 1	C	15.9	15.9	Valley bottom riparian		Grizzly bear habitat
75	CWH ms 1	N	0.1	0.0			
77	CWH ms 1	N	28.3	0.0	Riparian		SRMZ
77	CWH ms 1	P	0.1	0.1			
79	CWH ds 1	N	8.9	0.0	Lakeshore riparian		
82	CWH ms 1	C	14.3	14.3	Cross elev. Linkage		
82	CWH ms 1	N	21.0	0.0			
82	CWH ms 1	P	0.1	0.0			
85	CWH ds 1	C	19.0	19.0	Lakeshore riparian		
87	CWH ms 1	N	31.6	0.0			SRMZ

Abbreviations: Elev. = elevation
GWR = goat winter range
SRMZ = Spotted Owl Special Resource Management Zone
DWR = deer winter range

Appendix 2: Acronyms

AAC	Allowable Annual Cut
BEC	Biogeoclimatic Ecosystem Classification
BEO	Biodiversity Emphasis Option
C	Contributing
CMT	Culturally Modified Tree
CWS	Community Watershed
DDM	Delegated Decision Maker
FPC	Forest Practices Code of British Columbia Act
GBPU	Grizzly Bear Population Unit
IWMS	Identified Wildlife Management Strategy
LU	Landscape Unit
LUPG	Landscape Unit Planning Guide
MELP	Ministry of Environment, Lands and Parks, now called MWLAP
MEM	Ministry of Energy and Mines
MOF	Ministry of Forests
MSRM	Ministry of Sustainable Resource Management
MWLAP	Ministry of Water, Land and Air Protection
NC	Non-contributing
NDT	Natural Disturbance Type, see Biodiversity Guidebook
OGMA	Old Growth Management Area
PC	Partially Contributing
RRZ	Riparian Reserve Zone
THLB	Timber Harvesting Land Base
UWR	Ungulate Winter Range
WHA	Wildlife Habitat Area
WTP	Wildlife Tree Patch
WTR	Wildlife Tree Retention

Appendix 3: Public Consultation Summary

The 60-day public review and comment period for the Tretheway Landscape Unit extended from 4 January through to 4 March 2005. Prior to the public consultation period, MSRM staff met with local forest licensees to address their concerns and craft a plan that minimised impacts to timber supply (Section 3.1). Ongoing discussions with the Ministries of Forests and Water, Land and Air Protection, regarding the development of the landscape unit objectives and placement of OGMAs for the Tretheway LU, took place throughout the course of plan development. MSRM staff advised mineral tenure holders of OGMA placement and landscape unit objectives (Section 3.2). An overview of the noteworthy aspects of MSRM's consultations and the specific comments received on the draft plan and LU objectives follows.

Consultations with First Nations
MSRM staff consulted with First Nation organisations with traditional territory in the Tretheway Landscape Unit: the Chehalis First Nation, In-SHUCK-ch Council and Stó:lô Nation. General interest in LU planning was conveyed by the Chehalis First Nation and an information meeting was conducted with members of the In-SCHUCK-ch Council in the Fall of 2004. No comments pertaining to LU-level planning were submitted by In-SHUCK-ch Council or the Stó:lô Nation. MSRM met with Chehalis First Nation's Forest Planner in early May to discuss planning at the LU level and ways for Chehalis and MSRM to engage in resolving issues of common interest within the scope of LU Planning at this time.

Comments regarding maximising the overlap between OGMAs and other constrained areas in the THLB
As some time has elapsed between the development of the initial plan and its approval, some licensees are now considering development in areas where OGMA placement was once non-contentious. Notably, Ungulate Winter Ranges and Wildlife Habitat Areas have since become more defined in their location and extent. MSRM consulted with affected licensees during plan development to forge agreement on OGMA size and placement. Staff used the best information available at the time with respect to special management areas within the THLB (e.g., UWRs, WHAs). MSRM has committed to an ongoing process of rationalising OGMA location with other THLB constraints.

Comments regarding amending OGMA locations
One licensee expressed concern that certain OGMAs appear to be excluded from development as outlined in Landscape Unit Objectives for the Tretheway Landscape Unit—specifically Landscape Unit Objective 1, Section 2(1-4). Obj. 1, S. 2(4) defines specific OGMAs and OGMA classes that are sufficiently critical for the conservation of biodiversity within the Tretheway LU that an elevated degree of oversight by MSRM is necessary prior to approving amendments to the location or extent of, and permissible activities in these particular OGMAs: changes to the boundaries, location, or develop in any of these OGMAs are not specifically prohibited but review and approval by MSRM is necessary before on-the-ground changes are implemented. This sets this class of OGMAs apart from those which currently possess less rare habitat attributes wherein

licensees are empowered to amend OGMA locations and boundaries without prior approval of MSRM—i.e., consistent with Objective 1, Section 2 (1-3)—subject to the areal limits outlined in Objective 1, Section 2 (1-2). This issue was clarified for the licensee and was found to be consistent with the procedure MSRM had developed in consultation with affected licensees.