Squamish Forest District
Landscape Unit Planning

Lower Squamish Landscape Unit Plan

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1.0 Introduction

This report provides background information used during the preparation of the Lower Squamish Landscape Unit plan and legal objectives. A description of the landscape unit, discussion on significant resource values, and an OGMA summary and rationale are provided. A summary of public comments received during the 60 day review and comment period is included in Appendix II.

Landscape Unit (LU) Planning is being undertaken in high priority areas of the province, and is an important component of the *Forest Practices Code* (FPC) which allows legal establishment of objectives to address landscape level biodiversity values. 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. Over 150 taxa of known mammals, birds, reptiles, and amphibians and over 600 vascular plants are listed for legal designation as threatened or endangered in British Columbia. 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).

Implementation of LU Planning is intended to help maintain biodiversity values. Retention of biodiversity is important for wildlife and can also provide important benefits to ecosystem management, protection of water quality and preservation of other natural resources.

The Squamish Forest District has completed draft LU boundaries and established draft Biodiversity Emphasis Options (BEO) in accordance with the direction provided by government. There are 20 LUs within this district. Approval of this plan will allow legal establishment of the Lower Squamish LU boundaries, BEO and legal objectives.

Through a ranking process (see Appendix I) the Lower Squamish LU was rated as an Intermediate BEO. Current government direction 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 Terminal Forest Products Limited, Ministry of Forests (MOF) and Ministry of Water, Land and Air Protection (MWLAP) staff. Input was also solicited from forest licensees and First Nations.

Refer to the attached map dated August 6, 2002, for the location of OGMAs and complementary old growth representation outside of the Provincial forest (i.e. within protected areas). This includes some areas of forests less than age class 9 (i.e. <250 years of age) that can be considered recruitment areas for old seral representation. Throughout this report, the term OGMA is used to refer to all areas of old seral representation or recruitment, whether within the Provincial forest or protected areas; however the map differentiates between these two land bases. Refer to Appendix IV for a summary of OGMA attributes by forest type and biogeoclimatic ecosystem classification variant.

[1] Definition of biodiversity is from page 2 of the Forest Practices Code *Biodiversity Guidebook* (September, 1995).

2.0 Landscape Unit Objectives

Landscape Unit objectives will be legally established within the framework of the FPC and as such are Higher Level Plan objectives. Other operational plans must be consistent with these objectives. In addition, in part of the Lower Squamish LU the Spotted Owl Management Plan has been approved and is also being considered for Higher Level Plan status with legal objectives. As much as possible, objectives from both plans are intended to be compatible.

The Lower Squamish LU received an Intermediate BEO through the biodiversity value ranking and BEO assignment processes completed earlier (Appendix I). Table 1 lists the percentages of the LUs productive forest area by natural disturbance type (NDT) required for old seral representation. The target figures listed in Table 1 are derived from Appendix 2 of the *Landscape Unit Planning Guide* (LUPG). The percentages of cutblock area required for WTR for each BEC subzone are shown in Table A of the *Legal Objectives*.

Note: Objectives apply only to Provincial forest lands. Protected areas and other Crown forest lands outside of Provincial forest contribute old seral representation but the LU Objectives do not apply to these areas.

Table 1. Required Levels for Old Seral Representation

BEC Variant[1]	NDT[2]	LUPG Old Seral Representation Target[3]	
		%	ha
CWHdm	**NDT 2**	>9	>436
CWHds1	**NDT 2**	>9	>45
CWHms1	**NDT 2**	>9	>55
CWHvm1	**NDT 1**	>13	>183
CWHvm2	**NDT 1**	>13	>465
MHmm1	**NDT 1**	>19	>303
MHmm2	**NDT 1**	>19	>14

1 CWHdm: Coastal Western Hemlock biogeoclimatic zone, dry maritime variant.
CWHds1: Coastal Western Hemlock biogeoclimatic zone, dry submaritime (southern) variant
CWHms1: Coastal Western hemlock biogeoclimatic zone, moist submaritime (southern) variant
CWHvm1: Coastal Western Hemlock biogeoclimatic zone, very wet maritime (submontane) variant
CWHvm2: Coastal Western Hemlock biogeoclimatic zone, very wet maritime (montane) variant.
MHmm1: Mountain Hemlock biogeoclimatic zone, moist maritime (windward) variant.
MHmm2: Mountain Hemlock biogeoclimatic zone, moist maritime (leeward) variant.
2 NDT = Natural Disturbance Type. Refer to LUPG, Appendix 2.
3 % of total productive forest area within BEC variant, as per LUPG.

Old seral representation targets listed above have been met through the delineation of OGMAs throughout the Lower Squamish LU and complementary old growth representation within protected areas. Refer to the attached Lower Squamish LU map for the location of OGMAs, to Appendix IV for OGMA statistics and attributes, and to Table 2 for a breakdown of non-contributing (NC), constrained Timber Harvesting Land base (THLB) and unconstrained THLB components.

Table 2. Non-contributing, Constrained THLB and Unconstrained THLB Components of Lower Squamish LU OGMAs.

BEC Variant	Total Old Seral Representation[1]	Non–Contributing[2] Area in OGMA				Constrained THLB[3] in OGMA		Unconstrained THLB in OGMA[4]	
	ha	park (ha)	other (ha)	Total (ha)	%	ha	%	ha	%
CWHdm	**439.9**	109.8	230.8	340.6	77.4	23.6	5.4	75.7	17.2
CWHds1	**46.1**	0	17.6	17.6	38.2	12.1	26.2	16.4	35.6
CWHms1	**56.6**	0	55.9	55.9	98.8	0	0	0.7	1.2
CWHvm1	**183.8**	0.2	104.7	104.9	57.1	19.0	10.3	59.9	32.6
CWHvm2	**465.6**	223.2	210.3	433.5	93.1	17.6	3.8	14.4	3.1
MHmm1	**303.7**	87.0	208.5	295.5	97.3	0	0	8.2	2.7
MHmm2	**16.5**	0	16.5	16.5	100	0	0	0	0
TOTALS	**1512.2**	**420.2**	**844.4**	**1264.6**	**83.6**	**72.3**	**4.8**	**175.3**	**11.6**

Note: any differences in totals are due to rounding
1. This represents the actual amount established based on targets from Table 1.
2. **Non-Contributing Area in OGMA** = productive forest land that does not contribute to the AAC.
3. **Constrained THLB in OGMA** = Timber Harvesting Land Base that cannot fully contribute to the AAC due to site sensitivity or the need to manage for other resource values.
4. **Unconstrained THLB in OGMA** = THLB area (productive forest land) that is available for harvesting

The establishment of OGMAs will not have an impact on the status of existing aggregate, mineral and gas 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.

3.0 Landscape Unit Description

3.1 Biophysical Description

The Lower Squamish LU covers a total area of 34923 ha, encompassing several watersheds flowing into the western side of Howe Sound and the lower Squamish River. Larger watersheds within this LU include Woodfibre and Mill Creeks flowing into Howe Sound and Fries, Tantalus and Sigurd Creeks flowing into the west side of the Squamish River. Smaller named watersheds include Ellesmere Creek, Foulger Creek, Monmouth Creek, Zenith Creek, Mawby Creek, and Madden Creek; there are also several small unnamed stream systems entering Howe Sound and Squamish River. Of this total LU area, 13135 ha (37%) is within the Crown forest land base, and 4987 ha of Crown forest is within the THLB. The remaining 21788 ha (63%) are non-forested or non-Crown (rock, alpine tundra, water, private land) and have been excluded from any OGMA contributions and calculations.

A portion of the productive forest not included within THLB is located within two protected areas that overlap with the Lower Squamish LU. Tantalus provincial park is the largest protected area with Brackendale Bald Eagle Reserve situated just to the south (Brackendale Reserve encompasses Baynes Island Ecological Reserve).

The Lower Squamish LU lies within the Pacific Ranges Ecoregion, Southern Pacific Ranges ecosection. The LU is comprised of the following 8 BEC subzones/variants: Coastal Western Hemlock dry maritime (CWHdm); Coastal Western Hemlock southern dry submaritime (CWHds1); Coastal Western Hemlock southern moist submaritime (CWHms1); Coastal Western Hemlock submontane very wet maritime (CWHvm1); Coastal Western Hemlock montane very wet maritime (CWHvm2); Mountain Hemlock windward moist maritime (MHmm1); Mountain Hemlock leeward moist maritime (MHmm2); and Alpine Tundra (ATp).

These 8 BEC subzones/variants represent 3 different Natural Disturbance Types, with CWHvm1, CWHvm2, MHmm1 and MHmm2 in NDT 1 (rare stand initiating events); CWHdm, CWHds1 and CWHms1 in NDT 2 (infrequent stand-initiating events); and ATp in NDT 5 (alpine tundra and subalpine parkland).

Forest ecosystems in NDT 1 were influenced historically by rare stand-initiating events and were generally uneven-aged or multi-storied uneven aged, with regeneration occurring in gaps created by the death of individual trees or small patches of trees. Approximately 53% of the productive forest area of the Lower Squamish LU is within NDT 1. Historically, NDT 2 forest ecosystems were usually even-aged, but extended post-fire regeneration periods produced some stands with uneven-aged characteristics. Approximately 47% of the productive forest area in Lower Squamish LU is within NDT 2. Ecosystems in NDT 5 are not considered productive forest since they occur above or immediately below the alpine treeline and are characterised by short and harsh growing seasons.

At lower elevations, within NDTs 1 and 2, the Lower Squamish LU has sustained significant levels of disturbance. Forested stands on lower elevation productive sites (typically on slopes with low to moderate gradients within the CWH) have been disturbed by past timber harvesting, fire, urbanization and other factors. The relatively low levels of old seral forest remaining within the lower elevation BEC variants in the Lower Squamish LU reflects this disturbance history.

3.2 Significant Resource Values

The LU supports a wide range of natural resource values and features, and a diversity of social and cultural values and influences. A variety of ownership and tenure types are present, including: areas of private land; Indian reserve; Crown forest (Terminal Forest Products Limited, International Forest Products Limited and BC Timber Sales chart) and protected areas. This LU is located near Squamish with a major highway corridor along the north eastern boundary. These factors all increase the complexity of resource management within the Lower Squamish LU.

Fish, Wildlife and Biodiversity: Twenty wildlife species of specific management concern are known or suspected to be present with the Lower Squamish LU. These include RED-listed, BLUE-listed or Yellow-listed and regionally important species; or other species at risk called Identified Wildlife under the Forest Practice Code. Table 3 provides a summary of these wildlife species.

Table 3. Wildlife Species of Specific Management Concern

Species	Status[1]	Additional Comments	Likelihood of Presence[2]
Rubber Boa	Yellow-listed	Identified Wildlife	Moderate
Tailed frog	BLUE-listed	Identified Wildlife	Confirmed present
American bittern	BLUE-listed	Identified Wildlife	Low to Moderate
Great blue heron	BLUE-listed	---	Confirmed present
Green heron	BLUE-listed	---	Confirmed present
Trumpeter swan	BLUE-listed	Regionally important	Confirmed present
Harlequin duck	Yellow-listed	Regionally important	Confirmed present
Marbled murrelet	RED-listed	Identified Wildlife	Confirmed present
Spotted owl	RED-listed	---	Moderate
Bald eagle	Yellow-listed	Regionally important	Confirmed present
Peregrine falcon	RED- and BLUE-listed subspecies	---	Confirmed present
Northern goshawk	RED- and BLUE-listed subspecies	Identified Wildlife	Confirmed present
Keen's long-eared myotis	RED-listed	Identified Wildlife	High
Townsend's big-eared bat	RED-listed	Identified Wildlife	High
Pacific water shrew	RED-listed	Identified Wildlife	Low to Moderate
Trowbridge shrew	BLUE-listed	Identified Wildlife	High
Mountain goat	Yellow-listed	Regionally important	Confirmed present
Black-tailed deer	Yellow-listed	Regionally important	Confirmed present
Grizzly Bear	BLUE-listed	Identified Wildlife	Confirmed present
Wolverine	Yellow-listed	Regionally important	Confirmed present

1 Status from the British Columbia Conservation Data Centre (CDC). Yellow-listed species is any indigenous species or subspecies (taxa) which is not at risk in British Columbia. The CDC tracks some Yellow listed taxa which are vulnerable during times of seasonal concentration (e.g. breeding colonies). BLUE-listed species includes any indigenous species or subspecies considered to be Vulnerable in British Columbia. Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened. RED-listed species is any indigenous species or subspecies considered to be Extirpated, Endangered, or Threatened in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Red-listed taxa include those that have been, or are being, evaluated for these designations.

2 Professional judgement regarding likelihood of presence, based on species distribution and habitat requirements.

Of these 20 wildlife species, 4 species were given specific consideration during OGMA delineation. This included black-tailed deer, mountain goats, marbled murrelets and bald eagles.

Black-tailed deer and Mountain goat winter range habitat has been previously identified by the Ministry of Environment, Lands and Parks (MELP, now called MWLAP) throughout the Lower Squamish LU, based upon inventory work conducted in the 1990s. Legal designation of these areas as Ungulate Winter Range (UWR) is currently being pursued under Section 69 of the FPC Operational Planning Regulation. Black-tailed deer and Mountain goat winter range habitat polygons, spatially defined on 1:20000 reference maps, were considered during OGMA delineation, to pursue overlap of OGMAs with constrained areas.

The maintenance of marbled murrelet (MAMU) nesting habitat is another management consideration for the Lower Squamish LU. The marbled murrelet, a small coastal seabird, is RED-listed in British Columbia and designated as THREATENED in Canada by the Committee on the Status of Endangered Wildlife in Canada. The main threat to this species is considered to be loss of old growth nesting habitat. While there are no spatially identified marbled murrelet nesting habitat areas within the LU, marbled murrelets are known to utilise marine foraging habitats within flight distance of the lower Squamish River. MAMU nesting activity is expected to occur within suitable old seral forest habitats in this LU. Suitable MAMU nesting habitat consists primarily of age class 8 and 9 forests (141 – 250+ years) with tree heights >20 meters and at elevations up to 1400 m. As outlined in the Identified Wildlife Management Strategy (IWMS), the marbled murrelet is to be managed through the placement of OGMAs within suitable marbled murrelet nesting habitat. This approach was attempted in the Lower Squamish LU, by situating OGMAs within potential nesting habitat, as limited as these areas were. However, it must be noted that previous disturbances (e.g. fire and harvesting) and other LU Planning requirements (i.e. to place OGMAs in the NC land base) precluded successful implementation of effective management options for this species.

Overwintering concentrations of bald eagles are known to occur within most of the lower elevation areas of the LU, particularly in riparian habitats associated with Howe Sound and the lower Squamish River. Inventory work conducted in 1995 to 1997 resulted in spatially defined daytime perching and feeding locations. In addition, night-time communal roosting habitats were mapped. These mapped habitats were also considered during OGMA delineation.

In addition to these wildlife species, watercourses and lakes within the Lower Squamish LU also support resident and migratory salmonid populations. Salmonid species associated with this LU include: rainbow trout (including the migratory form – steelhead); cutthroat trout; Dolly Varden char; bull trout (Identified Wildlife), pink salmon; coho salmon; chum salmon; sockeye salmon and chinook salmon. The highest freshwater fisheries values are associated with Squamish River and lower reaches of its tributary streams.

Protected Areas: There are two protected areas within Lower Squamish LU. Tantalus provincial park is the largest with the smaller Brackendale Bald Eagle Reserve being situated adjacent to the south-east boundary of the park. OGMAs were placed in the NC to maximise biodiversity objectives, whether or not these NC areas overlapped with protected areas in order to select the most favourable stands for OGMAs/old seral representation and biodiversity objectives. A review of the protected area included for old seral representation suggests that this contribution is approximately proportional to the amount of productive forest within the protected areas as compared to the remainder of the LU.

Timber Resources: Commercially valuable tree species in the Lower Squamish LU include Western red cedar, Douglas-fir and western hemlock at the lower to mid elevations and mountain hemlock and sub-alpine fir mostly in higher elevation areas.

Of the total 4987 ha of THLB approximately 69% has been harvested or otherwise disturbed (approximately <80 years old). Forests ranging from 80 to 250 years represent 14% of the THLB, and old forests in the THLB (>250 years old) occupy about 17% of the THLB area. Continued access to commercially valuable timber, including future second growth, is a notable concern.

The Lower Squamish LU is within the Soo Timber Supply Area (TSA). Four forest licensees operate in the landscape unit. Terminal Forest Products Limited operates in the southernmost portion from Woodfibre Creek southwards. International Forest Products Limited has chart starting in Woodfibre Creek and extending north to Mill Creek. The BC Timber Sales has tenure within Fries Creek and north to Tantalus provincial park. Western Forest Products also has a Timber License in the LU.

Community Water Systems: There are no community watersheds within the Lower Squamish landscape unit.

First Nations: The Lower Squamish LU is located within areas covered by Statements of Intent for Treaty Negotiations by the Squamish Nation. A Squamish Nation Indian Reserve is situated along the lower Squamish River. The Sechelt First Nation also has interest in a part of the LU, for example the Defence Islands at the very south tip of the LU are within Sechelt Nation traditional territory (these islands were not affected by LU planning). There is evidence of traditional use in several areas within this LU, especially the lower slopes near the Squamish River, and the marine foreshore along Howe Sound. Culturally modified trees (CMTs) have also been previously identified in some areas.

In 1997, an Archaeological Overview Assessment model was developed by Millennia Research on behalf of MOF to indicate where archaeological sites are most likely located. This was done to minimise potential impacts by forestry operations on culturally important areas. The model was useful in predicting the potential location of CMT and habitation sites.

The maps produced from the model were reviewed to determine if potential CMT or habitation sites could be captured in OGMAs, especially in valley bottom areas (riparian) and mid slope locations. It should be noted, however, that the restriction of OGMAs to the NC land base resulted in a limited ability to achieve this overlap.

Private Land: Several parcels of private land occur within the Lower Squamish LU, dispersed from the northern to southern end at lower elevations along the eastern LU boundary. This private land is an important consideration when establishing OGMAs. Some of the private land has been altered from its natural state and this change may influence the ecology of adjacent Crown forest lands. Where private and Crown land interfaced, these factors were considered during OGMA delineation.

Mining and Mineral Exploration: Subsurface resources (minerals, coal, oil, gas and geothermal) and aggregate resources are valuable to the province, but are difficult to characterise due to their hidden nature. Ministry of Energy and Mines (MEM) has rated the industrial mineral and metallic mineral potential of this LU (outside of Parks) as Medium-High to Very High. These MEM rankings are based on a qualitative analysis which takes into account the values of known resources, past exploration and production as well as the number of known mineral occurrences and a subjective probability estimate of value by industry experts.

In this LU there is one mineral tenure and four mineral showings (i.e. occurrences hosting minor in-situ mineralization). OGMA delineation was unable to take into specific account mineral potential, showings or prospects but the single mineral tenure was avoided. It is understood that exploration and development activities are permitted in OGMAs but the preference is to proceed

with exploration and development in a way that is sensitive to the old growth values of the OGMA. If this is not possible, then a replacement OGMA will be required.

Recreation: Although this LU is situated close to large urban settlements (e.g. Squamish, West Vancouver, North Vancouver) recreational opportunities are limited primarily to boat, aerial and hiking access. This is due to a relatively small forest road network and no bridge across the lower Squamish River; a small cable car across the Squamish River does exist. Recreational resource use remains quite high even with these other forms of transportation. Squamish River angling (both guided and non-guided) occurs by boat/raft as does wildlife viewing (commercial and non-commercial mostly for over-wintering eagles). Commercial rafting also occurs on the Squamish River, commonly associated with the above two activities.

Recreational use of Tantalus Provincial park west of the Squamish River is also restricted to hiking or water access. Brackendale Eagle reserve is a popular destination for eagle viewing, again mostly during winter.

Outside of the protected areas, hiking and mountain biking are the most common recreational activities within this LU, but primarily east of the Squamish River. All terrain vehicle, motorcycle and four wheel drive use of roads for recreation would also occur in locations east of the Squamish River. Some berry and mushroom picking and general sightseeing also occur. Compared to most of the Squamish Forest District, hunting and lake fishing occur on a very limited basis. Hunters would primarily target deer or black bears. Several lakes (e.g. Lake Lovely Water, Henriette, Sigurd) are stocked or support trout and receive limited angling effort, access would be hike in or aerial only. As mentioned above, winter recreational activity is concentrated on eagle viewing although lower elevations would mostly be snow free meaning other activities could occur. There are no Forest Service Recreation Sites in the Lower Squamish LU, nor are there any future development plans.

4.0 Biodiversity Management Goals and Strategies

4.1 General Biodiversity Management Goals

Biodiversity management goals and strategies describe, in specific terms, the outcomes that legal LU Objectives are to achieve. They also describe the rationale for selection of OGMAs, some of the ecological features that OGMAs are to include, and some decisions made to balance management of all values present in the LU. While LU Objectives are legally binding, management goals and strategies are not. Goals and strategies must remain flexible to incorporate future direction and new methods in order to ensure continued compliance with the corresponding LU Objectives.

The biodiversity ranking process identified important biodiversity values within the Lower Squamish LU that must be managed for (see Appendix I). The delineation of OGMAs cannot be undertaken without recognition of these significant values because OGMA delineation is the most effective provision of the FPC LU planning initiative for managing biodiversity. The previous section (Section 3) describes the resource values considered in the LU planning process.

The development of biodiversity management goals and strategies is important not only for conservation of biodiversity, but also to allow development of strategies to mitigate short and long-term LU planning impacts on timber supply. For example, OGMA delineation was not

guided strictly by age class or Allowable Annual Cut contributions, as this approach could result in including stands of marginal biodiversity value and significant timber supply impact within OGMAs. Individual forested polygons were assessed according to their specific attributes during the OGMA delineation process.

As per the LUPG, OGMAs were established first in areas within the NC land base, according to the last Timber Supply Review (TSR). Almost 84% of all OGMAs were placed in this land base. Where contributing land base was included within OGMAs, discussions occurred with forest licensees in an attempt to choose mutually agreeable areas. The impact to the THLB is expected to be offset by areas of NC land base that were specifically avoided during OGMA delineation, to maintain potential for future harvesting opportunities and mitigate timber supply impacts.

To pursue representation of old growth stands in each BEC variant, efforts were made to delineate OGMAs that included a diversity of stand types, by species composition and geographic/topographic locations. OGMAs were aggregated whenever possible, both within and across BEC variants, to pursue connectivity and to create larger patch sizes with forest interior characteristics (limited success due to previous disturbance). Efforts were made to ensure OGMAs were distributed throughout the LU and not concentrated in a particular drainage. This is consistent with the "coarse filter" approach of biodiversity management whereby representative old growth stands are protected to maintain ecosystem processes and specific wildlife habitat requirements that may be poorly understood. In addition, ensuring OGMA placement is distributed throughout the LU helps ensure that any operational impacts are shared by all licensees operating in the area.

Attempts were made to maximise OGMA overlap with high value wildlife habitats such as Mountain goat winter range, larger riparian areas and other unique or biologically valuable areas (e.g. wetlands and slide-tracks). Riparian reserve zones (RRZs) established in accordance with the FPC, will help maintain some fish and wildlife habitat values associated with riparian areas and adjacent riparian forests. OGMAs delineated within and adjacent to existing RRZs can be expected to build upon these fish and wildlife habitat values. Narrow or isolated riparian fringes were generally not included in OGMAs, as such areas are more appropriate for stand level management and do not meet the "coarse filter" approach outlined in the Biodiversity Guidebook.

In all cases, detailed air photo review was performed to confirm forest cover attributes and suitability of a given stand for OGMA. In addition, all OGMAs were reviewed via helicopter survey work to verify the presence of desirable old forest characteristics.

4.2 Specific Biodiversity Management Goals and Strategies

4.2.1 Biodiversity Management Goals

1. Delineate old growth management areas predominantly in the non-contributing portion of the Provincial forest to maintain the full old seral representation targets for each BEC variant (CWHdm, CWHds1, CWHms1, CWHvm1, CWHvm2, MHmm1 and MHmm2), according to the following targets (from Table 1) and as per the attached map:
    a) CWHdm target of >9%, or at least 436 ha;

b) CWHds1 target of >9%, or at least 45 ha;
c) CWHms1 target of >9%, or at least 55 ha;
d) CWHvm1 target of >13, or at least 183 ha;
e) CWHvm2 target of >13%, or at least 465 ha;
f) MHmm1 target of >19%, or at least 303 ha; and
g) MHmm2 target of >19%, or at least 14 ha.

2. Maintain areas that are representative of natural ecosystem patterns and ecosystem mosaics.

3. Maintain a wide range of ecosystem types and species composition.

4. Include rare, unique or under-represented stand types within OGMAs where possible and when compatible with other biodiversity goals.

5. Aggregate OGMAs when possible, both within and across BEC variants, to implement additional biodiversity management provisions like connectivity and forest interior habitat.

6. Place OGMAs where site location and topographic features provide the highest wildlife habitat and biodiversity value, such as UWRs or Spotted owl SRMZs, stream confluences, adjacent to slide-tracks, wetlands and other features when suitable old growth is present.

7. Pursue overlap of OGMAs with potential marbled murrelet nesting habitats.

4.2.2 Biodiversity Management Strategies

A. Delineate OGMAs that include existing stands of old growth (250+ years old) or particularly high biodiversity value mature stands (generally 140 to 250 years old) that will provide old growth attributes in as short a time frame as possible (Goals 1 and 2).

B. No harvesting activities, including salvage or single-tree harvesting, are to occur within OGMAs (Goal 1).

C. Include unique stands and habitat types within OGMAs (Goals 1, 2, 3 and 4).

D. Delineate OGMAs that are as large and contiguous as possible, while ensuring that they contain a wide range of sites and habitat types. (Goals 2, 3, 4, 5, 6).

E. Establish OGMAs that are adjacent to biologically valuable non-forest habitats (e.g. lakes, wetlands and slide-tracks) or within valuable wildlife habitat (Goal 6).

F. Delineate OGMAs that include as much potentially suitable marbled murrelet nesting habitat as possible (Goal 7).

G. Retain veterans within harvesting areas to levels typical of densities found following natural disturbances as a focus of stand level biodiversity management, in accordance

with the wildlife tree retention objective. Retention of dominants as veteran recruits is recommended where veterans are not present in the stand (Goal 2).

4.3 OGMA Boundary Mapping

OGMA boundaries were delineated to include complete forest stands (i.e. forest cover polygons) and follow natural features whenever possible to improve the ease of OGMA mapping and reduce operational uncertainty. 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.

4.4 Auditing Wildlife Tree Retention

The percent required for wildlife tree retention described in Table A of the *Legal Objectives* for the Lower Squamish landscape unit 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 for retention 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.

5.0 Mitigation of Timber Supply Impacts

The Lower Squamish LU plan has been developed to maximise effectiveness of the FPC biodiversity management provisions while minimising impacts on the Soo TSA timber supply.

As mentioned previously there are four forest licensees with operations in the LU. OGMAs were delineated based upon the biodiversity management goals and strategies with no specific effort to pursue even distribution of OGMAs between these licensees. Instead, LU planning in the Squamish Forest District is intended to minimise impacts to timber supply as a whole across the entire district. Of the total 1512 ha of OGMA to be established, 1265 ha (almost 84%) come from the NC land base; the 72 ha in partially contributing and 175 ha in contributing were agreed to or recommended by licensees primarily due to constraints.

Specific measures adopted to minimise impacts of Lower Squamish LU planning to timber supply include the following:

1. To the extent possible OGMAs were delineated within the NC land base and where OGMAs overlapped with THLB general agreement with licensees was achieved. OGMA areas themed as THLB are generally more constrained than indicated. For the purposes of this LU planning exercise and the goal of achieving old seral representation targets throughout the NC, NC forests within and outside of protected areas were viewed to be equal. The main goal was to distribute the OGMAs across the LU and select the most favourable stands for OGMAs/old seral representation to meet biodiversity objectives and spatial representation needs. Potential timber supply impacts may have been reduced by selecting from NC within protected areas first.

2. Further to the comments provided under point #1, an attempt was still made to ensure that NC stands associated with protected areas, Environmentally Sensitive Areas, lower productivity sites, areas of difficult access and marginal economics were included within OGMAs where possible and when compatible with biodiversity objectives.

3. Suitable old growth stands within UWR or Spotted Owl habitats were included in OGMAs whenever feasible, to reduce overall timber supply impacts and maximise overlap between constrained areas.

4. Areas included in OGMAs were assessed according to potential marbled murrelet nesting habitat suitability, timber values and existence of road infrastructure for future harvest access. Stands at the periphery of habitat areas with a high degree of fragmentation were often not included in OGMAs due to their lowered habitat suitability and ease of industrial access.

5. During the LU planning process, consideration was made to ensure timber access was not precluded by OGMA delineation. Known access corridors were generally left out of OGMAs and OGMA boundaries were delineated to simplify adjacent management.

6. The most recent approved Forest Development Plans for forest licensees within the LU were used during OGMA delineation to avoid proposed or approved developments. Direct consultation with forest licensees also occurred.

7. OGMA boundaries used natural features wherever possible to ensure they could be located on the ground. OGMAs were delineated to include complete stands of timber wherever possible to reduce operational uncertainty, increase the ease of OGMA mapping, and maximise the "coarse filter" effectiveness of OGMAs for long-term biodiversity protection.

8. Where possible, OGMA placement avoided areas within the NC land base identified by licensees as potential future harvest opportunities (e.g. helicopter access). Establishing OGMAs in the NC may still have implications to future timber supply by reducing flexibility for helicopter operations.

5.1 OGMA Amendment Procedures:

An MSRM Coast Region policy is being developed to give direction to proponents (forest tenure holders) when applying for amendments to OGMA legal objectives. Amendment procedures will cover such things as minor or major amendments for resource development (e.g. roads, bridges, boundary issues, rock quarries & gravel pits) or relocation of OGMAs. The policy also discusses acceptable management activities and review procedures.

Appendix I: Biodiversity Emphasis Option Ranking Criteria

The Lower Squamish LU received a Intermediate BEO during the application of landscape unit ranking criteria completed earlier by the Squamish Forest District Landscape Unit Planning Team. The first set of criteria, to rank ecological values, was applied to determine an initial BEO ranking for the District's LUs. The LU with the highest ecological values score was ranked number one, the next highest, number two and so on. The timber values were scored next, with their resultant scores generally being used as tie-breakers for LUs with similar ecological scores. This approach was consistent with direction provided in the FPC *Higher Level Plans: Policy and Procedures* document.

Final determination regarding the BEO assignment, particularly when scores were close, was based upon discussions between MELP and MOF.

What follows is a series of Tables that summarize the ecological and timber scores with draft and final BEO assignments. Table Ia is a summary of general BEO ranking criteria, followed by the ecological scoring summary for the Lower Squamish LU (Table Ib). Table Ic summarizes the ecological ranking score for the entire forest district, while Table Id shows the draft BEOs based on ecological scores. Table Ie illustrates the timber value rating criteria, while Table If shows the timber score for the Lower Squamish LU, and Table Ig describes the timber score for all landscape units in the district. The final BEO assignment is shown in Table Ih.

1) Ecological Values Ranking Criteria

The ecological values ranking criteria was used to initially assess which of the Squamish Forest District's LUs required higher levels of biodiversity provisions.

Table Ia. Ecological Values Ranking Criteria for Squamish LUs

Ecological Values	Criteria	Criteria description	Value	Rank	Score
Ecosystem Representation	Representation in parks	By % of BEC variants	0.0 to 0.4% >0.4 to 0.8% >0.8 to 1.2% >1.2 to 1.6% >1.6 to 2.0% >2.0%	High Low	5 pts 4 pts 3 pts 2 pts 1 pt 0 pts
Ecosystem Complexity	Diversity of BEC variants --- Diversity of special habitat features	By # of different BEC variants --- Professional judgement regarding diversity of special habitat features (estuaries, freshwater deltas floodplains; wetlands/lakes, slidetracks)	7 BEC variants 6 BEC variants 5 BEC variants 4 BEC variants 3 BEC variants --- 5/5 4/5 3/5 2/5 1/5 0/5	High Low --- High Low	8 pts 6 pts 4 pts 2 pts 0 pts --- 5 pts 4 pts 3 pts 2 pts 1 pt 0 pts

Table Ia contd

Fish/Wildlife Values	Fish/Wildlife values	Ranked based on points for species of special concern within the Squamish Forest District (anadromous salmonids, bull trout tailed frog, marbled murrelet, spotted owl, grizzly bear, moose and black-tailed deer)	score ≥ 10 score 7 to 9 score 4 to 6 score ≤ 3	High Low	10 pts 6 pts 2 pts 1 pt
Sensitivity to Development	Based on sensitivity of BEC variants	Determine NDT type which is most prevalent (exclude NDT 5)	NDT 1 >60% NDT 1 30-60% NDT 1 <30% NDT2 predomin.	High Low	2 pts 1 pts 0 pts 0 pts
	----------	----------	----------	----------	--------
	Inherent level of protection from signif. human disturbance (i.e. urbanisation, agricultural use, recreational use, etc...)	Professional judgement	Based on review and assessment by MELP staff	High Low	3 pts 2 pt 1 pt 0 pts
Connectivity	Based on non-PAS connectivity	Determine what proportion of the gross land area is mature/old (preliminary score) and then use professional judgement to derive a final score	>50% >40 to 50% >30 to 40% ≤30%	High Low	3 pts 2 pts 1 pt 0 pts
	----------	----------	----------	----------	--------
	Based on connectivity associated with PASs	Determine what proportion of the gross land area is protected	>20% >10 to 20% >1 to 10% <1%	High Low	3 pts 2 pts 1 pt 0 pts
Capability	Based on how easily seral stage targets can be met (exclude AT)	Determine how much old forest is currently present	>60% >40 to 60% >20 to 40% 0 to 20%	High Low	4 pts 3 pts 2 pts 1 pt
		----------	----------	----------	--------
		Determine how many BEC variants currently achieve old seral targets for high BEO	>80% >70 to 80% >50 to 70% 0 to 50%	High Low	3 pts 2 pts 1 pt 0 pts
		----------	----------	----------	--------
		Determine how much AC 8 is present (for recruitment and long-term capability)	>40% >20 to 40% 0% to 20%	High Medium Low	2 pts 1 pt 0 pts
Total Score					**48 pts**

Table Ib. Ecological Values Scoring Summary for Lower Squamish LU

Ecological Values	Criteria	Criteria description	Value	Score
Ecosystem Representation	Representation in parks	By % of BEC variants	0.61%	4 pts

Table Ib contd

Ecosystem Complexity	Diversity of BEC variants	By # of different BEC variants	7 variants	8 pts
	---	---	---	---
	Diversity of special habitat features	Professional judgement regarding diversity of special habitat features (estuaries, freshwater deltas floodplains; wetlands/lakes, slidetracks)	2/5 special habitat features	2 pts
Fish/Wildlife Values	Fish/Wildlife Values	Ranked based on points for species of special concern within the Squamish Forest District (anadromous salmonids, bull trout tailed frog, marbled murrelet, spotted owl, grizzly bear, moose and black-tailed deer)	Initial score of 6/21	2 pts
Sensitivity to Development	Based on sensitivity of BEC variants	Determine NDT type which is most prevalent (exclude NDT 5)	NDT 1 is 50.2% of gross land base	1 pt
	---	---	---	---
	Inherent level of protection from signif. human disturbance (i.e. urbanisation, agricultural use, recreational use, etc...)	Professional judgement	low level of human habitation, limited agric't'l use and moderate level of recreational use	2 pts
Connectivity	Based on non-PAS connectivity	Determine what proportion of the gross land area is mature/old (preliminary score) and then use professional judgement to derive a final score	32.7%	2 pts
	---	---	---	---
	Based on connectivity associated with PASs	Determine what proportion of the gross land area is protected	22.7% of gross area is protected	3 pts
Capability	Based on how easily seral stage targets can be met (exclude AT)	Determine how much old forest is currently present	32.9% of total productive forest is old growth	2 pts
		---	---	---
		Determine how many BEC variants currently achieve old seral targets for high BEO	5 of the 7 variants can meet old seral targets	2 pts
		---	---	---
		Determine how much AC 8 is present (for recruitment and long-term capability)	14.8% of age classes 1 thru 8 are age class 8	0 pts
Total Score				**28 pts**

Table Ic. Ecological Values Ranking for Original 21 Squamish Forest District LUs

LU	LU #	Total Score (x/48)	Ranking
Rogers	**301**	**23**	8th (tied with East Howe and Upper Squamish)
Meager	**302**	**24**	7th (tied with Lower Elaho and Tuwasus)
Upper Elaho	**303**	**25**	6th (tied with Billygoat)
Lower Elaho	**304**	**24**	7th (tied with Meager and Tuwasus)
Upper Squamish	**305**	**23**	8th (tied with Rogers and East Howe)
Ryan	**306**	**12**	11th
Lower Squamish	**307**	**28**	4th
Billygoat	**308**	**25**	6th (tied with Upper Elaho)
Mamquam	**309**	**20**	9th (tied with Soo and Whistler)
Tuwasus	**310**	**24**	7th (tied with Meager and Lower Elaho)
East Howe	**311**	**14**	10th
Indian	**312**	**23**	8th (tied with Rogers and Upper Squamish)
Soo	**313**	**20**	9th (tied with Mamquam and Whistler)
Whistler	**314**	**20**	9th (tied with Mamquam and Soo)
Callaghan	**315**	**9**	12th
Sloquet	**316**	**30**	2nd (tied with Gates)
Upper Lillooet	**317**	**27**	5th (tied with Lizzie)
Railroad	**318**	**29**	3rd
Birkenhead	**319**	**31**	1st
Gates	**320**	**30**	2nd (tied with Sloquet)
Lizzie	**321**	**27**	5th (tied with Upper Lillooet)

Table Id. Draft BEOs for Original 21 Squamish Forest District LUs Based on Ecological Values Ranking

BEO	LU	LU #	Ranking	% of Total THLB
High	**Gates**	**320**	2nd (tied with Sloquet)	**4.1**
High	**Sloquet**	**316**	2nd (tied with Gates)	**4.9**
High	**Birkenhead**	**319**	1st	**1.0 (1.0/3.4)**
				Total = 10.0
Intermediate	**Birkenhead**	**319**	1st	**2.4 (2.4/3.4)**
Intermediate	**Railroad**	**318**	3rd	**3.9**
Intermediate	**Lower Squamish**	**307**	4th	**2.3**
Intermediate	**Upper Lillooet**	**317**	5th (tied with Lizzie)	**6.1**
Intermediate	**Lizzie**	**321**	5th (tied with Upper Lillooet)	**3.8**
Intermediate	**Upper Elaho**	**303**	6th (tied with Billygoat)	**5.6**
Intermediate	**Billygoat**	**308**	6th (tied with Upper Elaho)	**3.8**
Intermediate	**Meager**	**302**	7th (tied with Lower Elaho and Tuwasus)	**3.1**
Intermediate	**Lower Elaho**	**304**	7th (tied with Meager and Tuwasus)	**5.0**
Intermediate	**Tuwasus**	**310**	7th (tied with Meager and Lower Elaho)	**1.9**
Intermediate	**Rogers**	**301**	8th (tied with East Howe and Upper Squamish)	**6.3**
Intermediate	**Indian**	**312**	8th (tied with Rogers and Upper Squamish)	**3.9**
				Total = 48.1
Low	**Upper Squamish**	**305**	8th (tied with Rogers and East Howe)	**12.7**
Low	**Whistler**	**314**	9th (tied with Mamquam and Soo)	**2.4**

Table Id contd

Low	**Mamquam**	**309**	9th (tied with Soo and Whistler)	**10.1**
Low	**Soo**	**313**	9th (tied with Mamquam and Whistler)	**5.5**
Low	**East Howe**	**311**	10th	**4.1**
Low	**Ryan**	**306**	11th	**3.4**
Low	**Callaghan**	**315**	12th	**3.6**
				Total = 41.8

2) Timber Values Rating Criteria

Timber values rating criteria were used to assess the relative timber values of the District's LUs and consider short and long-term contributions of each LU to the TSA in terms of value and timber volume.

Table Ie. Timber Values Rating Criteria for Squamish LUs

Timber Values	Criteria	Criteria description	Value/Comments	Rating
Productivity	Site Index	Proportion of THLB in LU with SI of ≥ 25 (higher proportion of better sites resulted in a higher rating)	>35% of THLB 25 to 35% of THLB <25% of THLB	High Moderate Low
Mature and harvestable Timber	Mature and harvestable timber	Proportion of mature and harvestable timber in LU (higher proportion of mature and harvestable timber resulted in a higher rating)	>50% ≥ 101 years 25 to 50% ≥ 101 years <25% ≥ 101 years	High Moderate Low
Operability	Operability	Proportion of age class 8 (141 to 250 years of age) and age class 9 (>250 years) in the productive land base that is considered operable (conventional operability data and professional judgement regarding extent to which new helicopter operability data will change operable land base)	Review of proportion of age classes 8 and 9 that are considered operable, with professional judgement applied to reach a final rating	High Moderate Low
Averaged rating	Site Index, Mature and Harvestable Timber and Conventional Operability	Averaged rating of the 1st 3 criteria	Averaged rating of the 1st 3 criteria, based a review of these ratings and professional judgement	High Moderate Low
Constraints	Constraints on harvesting	Amount of constraints to harvesting (e.g. visual quality, community watersheds, proximity to communities, recreation, high fish and wildlife values)	Professional judgement of the extent of constraints to harvesting	High Moderate Low
Overall Rating				Low to High*

* Note: Unlike the ecological values rating criteria, the rating of timber values did not follow a point scoring system. The 1st three values (productivity/mature and harvestable timber/operability) were utilised by MOF planning staff to develop an "averaged" rating of low, medium or high. When constraints were high, this averaged rating was reduced by 1 level (e.g. from high to medium).

Table If. Timber Values Rating Summary for Lower Squamish LU

Timber Values	Criteria	Criteria description	Value/Comments	Rating
Productivity	Site Index	Proportion of THLB in LU with SI of $\geq$ 25 (higher proportion of better sites resulted in a higher rating)	35.3% of THLB	High
Mature and harvestable Timber	Mature and Harvestable Timber	Proportion of mature and harvestable timber in LU (higher proportion of mature and harvestable timber resulted in a higher rating)	32.7% of THLB	Mod-High
Operability	Operability	Proportion of age class 8 (141 to 250 years of age) and age class 9 (>250 years) in the productive land base that is considered operable (conventional operability data and professional judgement regarding extent to which new helicopter operability data will change operable land base)	Review of proportion of age classes 8 and 9 that are considered operable, with professional judgement applied to reach a final rating	Moderate
Averaged rating	Site Index, Mature and Harvestable Timber and Conventional Operability	Averaged rating of the 1st 3 criteria	Averaged rating of the 1st 3 criteria, based a review of these ratings and professional judgement	High
Constraints	Constraints on harvesting	Amount of constraints to harvesting (e.g. visual quality, community watersheds, proximity to communities, recreation, high fish and wildlife values)	Professional judgement of the extent of constraints to harvesting	High
Overall Rating				Moderate

Table Ig. Timber Values Rating for Original 21 Squamish Forest District LUs

LU	LU #	Overall Timber Values Rating
Rogers	**301**	**Moderate**
Meager	**302**	**Moderate**
Upper Elaho	**303**	**High**
Lower Elaho	**304**	**High**
Upper Squamish	**305**	**High**
Ryan	**306**	**Moderate**
Lower Squamish	**307**	**Moderate**
Billygoat	**308**	**Moderate**
Mamquam	**309**	**Moderate/High**
Tuwasus	**310**	**Low**
East Howe	**311**	**Low**
Indian	**312**	**Moderate**
Soo	**313**	**Moderate**
Whistler	**314**	**Low**
Callaghan	**315**	**Moderate**
Sloquet	**316**	**High**
Upper Lillooet	**317**	**Low**
Railroad	**318**	**Moderate**
Birkenhead	**319**	**Moderate**

Table 1f contd

Gates	**320**	**Low/Moderate**
Lizzie	**321**	**Low**

3) Final BEO Designation

Final BEO designations were based on initial consideration of the draft BEOs, which were derived from the original ecological ranking, and the timber values rating criteria. Ecological values rankings within 2 points of each other were assumed to have the same relative score and the timber values ranking was used to break any ties. Final BEO designation was based on discussions between MELP and MOF planning staff. In regards to the allocation of High, Intermediate and Low BEOs, an attempt was made to achieve a 10-45-45 percent distribution for High, Intermediate and Low BEOs respectively. The final distribution was 10% High, 46% Intermediate and 44% Low. It should be noted that THLB Area reported in Table Ih is derived from the RLUPS data base which used PAMAP, the THLB numbers used in the new data set used ArcInfo and are considered more accurate.

Table Ih. Final BEO for 20* Squamish Forest District LUs Based on Ecological and Timber Values

Final BEO	LU	LU #	Original Ecological Ranking	Draft BEO	Timber Values Rating	THLB Area (ha)	% of Total THLB**
High	**Birkenhead**	**319**	1st	High/Int.	Moderate	6,768.0	**4.19**
High	**Railroad**	**318**	3rd	Intermediate	Moderate	5,816.8	**3.60**
High	**Sloquet (portion)**	**316**	2nd	High	High	3,574.8	**2.21 (2.21/6.39)**
							Total = 10.00
Intermediate	**Gates**	**320**	2nd	High	Low/Mod.	7,330.7	**4.54**
Intermediate	**Sloquet (portion)**	**316**	2nd	High	High	6743.1	**4.18 (4.18/6.39)**
Intermediate	**Lower Squamish**	**307**	4th	Intermediate	Moderate	3,875.4	**2.30**
Intermediate	**Upper Lillooet**	**317**	5th	Intermediate	Low	2,305.5	**1.43**
Intermediate	**Lizzie**	**321**	5th	Intermediate	Low	7,004.1	**4.34**
Intermediate	**Billygoat**	**308**	6th	Intermediate	Moderate	8,386.7	**5.20**
Intermediate	**Elaho**	**303**	6th/7th	Intermediate	High	16,691.9	**10.34**
Intermediate	**Meager**	**302**	7th	Intermediate	Moderate	4,847.7	**3.00**
Intermediate	**Tuwasus**	**310**	7th	Intermediate	Low	4,793.6	**2.97**
Intermediate	**Rogers**	**301**	8th	Intermediate	Moderate	12,230.7	**7.58**
							Total = 45.98
Low	**Indian**	**312**	**8th**	Intermediate	Moderate	5,802.3	**3.59**
Low	**Upper Squamish**	**305**	8th	Low	High	19,922.2	**12.34**
Low	**Whistler**	**314**	9th	Low	Low	4,255.1	**2.64**
Low	**Mamquam**	**309**	9th	Low	Mod./High	14,420.3	**8.95**
Low	**Soo**	**313**	9th	Low	Moderate	8,454.7	**5.24**
Low	**East Howe**	**311**	10th	Low	Low	5,953.3	**3.69**
Low	**Ryan**	**306**	11th	Low	Moderate	5,462.7	**3.38**
Low	**Callaghan**	**315**	12th	Low	Moderate	6,761.7	**4.19**
							Total = 44.02

* Note: In conjunction with final BEO determinations and in response to concerns regarding timber impacts, the Upper Elaho and Lower Elaho LUs were merged into 1 landscape unit (Elaho LU). This reduced the total number of LUs within the District from 21 to 20.

** Note: The THLB areas were based on updated data available in 1999. THLB areas differed from the original information utilised for the initial BEO, which resulted in changes to the overall THLB and the proportion within each LU.

Appendix II: Public Consultation Summary

The Lower Squamish LU was advertised for public review and comment for 60 days from August 10, 2002 to October 10, 2002. A summary of comments received and a response or how they were addressed follows:

1. **Recommendation that OGMA selection from the non-contributing land base focus on most productive area to improve representation.** During OGMA selection MSRM made sure that candidate stands were representative of the variant. Evaluation of stand attributes such as: vets, wildlife trees, multi-layered canopy, larger trees, full stocking etc. helped to ensure stands were representative/valuable. Addressing licensee concerns for harvest opportunities in the non-contributing was necessary as part of the mitigation strategy to reduce timber supply impacts.

2. **General support for using protected areas proportionally for old forest representation, and that protected areas should not be over represented in OGMAs.** The result is that parks representation is approximately proportional in this LU. OGMAs are sufficiently distributed across the landscape unit to meet the coarse filter goal.

3. **Disagreement that small, isolated patches with no connectivity should be used for OGMA.** MSRM established OGMAs in a range of different patch sizes from small to large, forest interior habitat will be provided in larger patches. In some cases, natural forest composition consisted of forest interspersed with rock polygons that prevent forest interior habitat conditions. Connectivity was considered during delineation of OGMAs but was difficult to achieve due to the long disturbance history in the TSA.

4. **Lower elevation and valley bottom old growth stands appear to be under represented in the LU.** Low elevation valley bottom stands that are suitable candidates for OGMA (larger contiguous patch) are rare in this planning area due to an extensive disturbance history. MSRM tried to capture these stands wherever possible.

5. **It was noted that some of the OGMAs in non-contributing that are stated to provide potential Marbled Murrelet nesting habitat are adjacent to additional non-contributing lands that were not selected. Several of the adjacent areas appear to have greater nesting habitat suitability than selected OGMAs and if added would improve patch size and value for Marbled Murrelet. These areas should be revisited and OGMAs increased in size to reduce the need for establishing WHAs in the future.** Strict adherence to the LU planning guide policy does not allow achievement of the goals for Marbled Murrelet habitat. In addition, some areas were identified for harvest opportunity by licensees. MSRM acknowledges that there may be need for WHAs on the landscape to manage for species not adequately protected by the coarse filter approach.

Appendix III: 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
IWMP	Integrated Watershed Management Plan
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 IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
1	CWH dm	985	30.4	0.9	9	324	357.8	31.0	16.2	FD90CW100			C		stream riparian
1	CWH dm	982	34.2	0.0	2	29	19.2	11.3	22.0	HW60FD20CW10			C		stream riparian
1	CWH dm	985	30.4	1.7	9	324	357.8	31.0	16.2	FD90CW100			C		stream riparian
1	CWH dm	984	4.9	0.0	2	32	101.7	18.5	23.0	DR50HW20FD10			N		stream riparian
1	CWH dm	984	4.9	0.1	2	32	101.7	18.5	23.0	DR50HW20FD10			N		stream riparian
1	CWH dm	984	4.9	0.2	2	32	101.7	18.5	23.0	DR50HW20FD10			N		stream riparian
				3.0											
2	CWH dm	985	30.4	2.5	9	324	357.8	31.0	16.2	FD90CW100			C		stream riparian
2	CWH dm	975	71.3	0.1	2	30	94.2	15.8	28.0	HW40FD30PL20			C		stream riparian
2	CWH dm	975	71.3	0.0	2	30	94.2	15.8	28.0	HW40FD30PL20			C		stream riparian
2	CWH dm	982	34.2	0.1	2	29	19.2	11.3	22.0	HW60FD20CW10			C		stream riparian
2	CWH dm	975	71.3	0.4	2	30	94.2	15.8	28.0	HW40FD30PL20			C		stream riparian
				3.1											
3	MH mm 1	961	33.4	2.0	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.2	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	5.9	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	1.9	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	3.9	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.3	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	2.8	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.6	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	960	78.4	9.1	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.0	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	960	78.4	0.0	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	961	33.4	0.1	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	961	33.4	3.6	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.6	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	961	33.4	0.2	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	2.7	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	960	78.4	0.0	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	962	41.5	3.6	9	324	660.4	42.4	16.7	H50CW30FD20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	961	33.4	0.3	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	961	33.4	0.0	9	324	335.0	24.5	9.0	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	1.3	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	3.1	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH vm 2	962	41.5	0.1	9	324	660.4	42.4	16.7	H50CW30FD20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	0.1	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	962	41.5	1.6	9	324	660.4	42.4	16.7	H50CW30FD20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	0.1	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	MH mm 1	960	78.4	0.3	9	324	483.6	30.6	11.4	H50YC30B20			N		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	966	16.7	2.3	7	134	802.7	43.7	28.5	FD50CW30H20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	967	24.5	0.4	4	74	413.1	27.5	23.9	FD60H400			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	966	16.7	0.1	7	134	802.7	43.7	28.5	FD50CW30H20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	976	7.7	4.0	7	134	500.1	36.5	20.7	H50CW30DR20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	969	125.0	0.2	2	25	0.0	5.6	14.0	HW50FD20CW15			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	975	71.3	0.0	2	30	94.2	15.8	28.0	HW40FD30PL20			C		large patch/pot. MAMU/x-elev. link/stream rip.
3	CWH dm	982	34.2	0.0	2	29	19.2	11.3	22.0	HW60FD20CW10			C		large patch/pot. MAMU/x-elev. link/stream rip.

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
				51.5											
4	CWH dm	975	71.3	0.0	2	30	94.2	15.8	28.0	HW40FD30PL20			C		older forests present (forest cover age class incorrect)
4	CWH dm	975	71.3	4.5	2	30	94.2	15.8	28.0	HW40FD30PL20			C		older forests present (forest cover age class incorrect)
				4.5											
5	CWH dm	969	125.0	2.9	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
5	CWH dm	969	125.0	0.1	2	25	0.0	5.6	14.0	HW50FD20CW15			N		older forests present (forest cover age class incorrect)
5	CWH dm	975	71.3	0.2	2	30	94.2	15.8	28.0	HW40FD30PL20			C		older forests present (forest cover age class incorrect)
				3.1											
6	CWH dm	971	62.6	0.2	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	971	62.6	0.0	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	972	4.5	3.3	9	324	569.1	42.1	21.9	FD80H10CW10			C		
6	CWH dm	971	62.6	0.2	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	971	62.6	0.3	3	54	133.1	15.8	16.6	H60FD30DR10			C		
6	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		
				4.2											
7	CWH dm	925	88.5	3.6	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.0	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	925	88.5	0.0	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.0	2	25	0.0	5.6	14.0	HW50FD20CW15			N		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.3	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH vm 2	969	125.0	0.8	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	3.7	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	925	88.5	0.1	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
7	CWH dm	925	88.5	0.1	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.1	2	25	0.0	5.6	14.0	HW50FD20CW15			N		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.5	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	1.6	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	1.0	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
7	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		older forests present (forest cover age class incorrect)
7	CWH dm	971	62.6	5.3	3	54	133.1	15.8	16.6	H60FD30DR10			C		older forests present (forest cover age class incorrect)
7	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		older forests present (forest cover age class incorrect)
7	CWH dm	969	125.0	0.0	2	25	0.0	5.6	14.0	HW50FD20CW15			N		older forests present (forest cover age class incorrect)
				17.4											
8	CWH dm	925	88.5	4.3	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
8	CWH dm	969	125.0	4.6	2	25	0.0	5.6	14.0	HW50FD20CW15			C		older forests present (forest cover age class incorrect)
8	CWH dm	925	88.5	0.1	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
8	CWH dm	969	125.0	0.0	2	25	0.0	5.6	14.0	HW50FD20CW15			N		older forests present (forest cover age class incorrect)
8	CWH dm	925	88.5	0.3	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
8	CWH dm	925	88.5	0.2	3	44	97.8	14.5	18.4	HW70CW20FD10			C		older forests present (forest cover age class incorrect)
8	CWH dm	837	227.7	0.1	0	0	0.0	0.0	0.0	000			X		older forests present (forest cover age class incorrect)
8	CWH dm	837	227.7	0.1	0	0	0.0	0.0	0.0	000			X		older forests present (forest cover age class incorrect)
8	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		older forests present (forest cover age class incorrect)

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
8	CWH dm	971	62.6	0.1	3	54	133.1	15.8	16.6	H60FD30DR10			C		older forests present (forest cover age class incorrect)
				9.8											
9	CWH dm	955	12.9	0.9	9	324	470.3	30.6	11.4	H50FD30CW20			N		
9	CWH dm	955	12.9	0.1	9	324	470.3	30.6	11.4	H50FD30CW20			N		
9	CWH vm 2	955	12.9	7.1	9	324	470.3	30.6	11.4	H50FD30CW20			N		
9	CWH dm	955	12.9	3.8	9	324	470.3	30.6	11.4	H50FD30CW20			N		
9	CWH dm	955	12.9	0.1	9	324	470.3	30.6	11.4	H50FD30CW20			N		
9	CWH dm	955	12.9	0.2	9	324	470.3	30.6	11.4	H50FD30CW20			N		
				12.2											
10	CWH vm 1	927	33.7	0.5	2	25	0.0	5.6	14.0	HW50BA30FD20			C		
10	CWH vm 1	952	8.8	0.8	9	324	483.6	30.6	11.4	H50YC30B20			N		
10	CWH vm 1	827	7.0	0.1	1	19	0.0	3.9	14.0	HW58CW31BA11			C		
10	CWH vm 1	827	7.0	0.1	1	19	0.0	3.9	14.0	HW58CW31BA11			C		
10	CWH vm 1	952	8.8	0.0	9	324	483.6	30.6	11.4	H50YC30B20			N		
10	CWH vm 1	952	8.8	0.0	9	324	483.6	30.6	11.4	H50YC30B20			N		
10	CWH vm 1	827	7.0	0.0	1	19	0.0	3.9	14.0	HW58CW31BA11			C		
				1.5											
11	CWH vm 1	927	33.7	0.2	2	25	0.0	5.6	14.0	HW50BA30FD20			C		
11	CWH vm 1	951	5.4	0.0	1	19	0.0	5.6	23.0	BA70HW20CW10			C		
11	CWH vm 1	950	6.3	0.4	9	324	789.4	42.4	16.7	H50B30CW20			C		
				0.7											
12	CWH vm 2	936	12.1	11.9	9	324	479.0	30.6	11.4	H60YC30B10	S		N		
12	MH mm 1	936	12.1	0.0	9	324	479.0	30.6	11.4	H60YC30B10	S		N		
12	CWH vm 2	934	11.5	0.2	9	324	335.0	24.5	9.0	H50YC30B20	S		N		
12	CWH vm 2	934	11.5	3.7	9	324	335.0	24.5	9.0	H50YC30B20	S		N		
12	CWH vm 2	936	12.1	0.1	9	324	479.0	30.6	11.4	H60YC30B10	S		N		
12	CWH vm 2	934	11.5	0.1	9	324	335.0	24.5	9.0	H50YC30B20	S		N		
12	CWH vm 2	934	11.5	0.1	9	324	335.0	24.5	9.0	H50YC30B20	S		N		
12	CWH vm 2	934	11.5	0.0	9	324	335.0	24.5	9.0	H50YC30B20	S		N		
				16.2											
13	CWH vm 2	1068	5.3	2.8	9	324	453.7	30.3	13.1	CW50H30YC20			N		large patch
13	CWH vm 2	913	15.8	14.2	9	324	479.0	30.6	11.4	H60YC30B10			N		large patch
13	CWH vm 1	1068	5.3	1.8	9	324	453.7	30.3	13.1	CW50H30YC20			N		large patch
13	CWH vm 1	1068	5.3	0.6	9	324	453.7	30.3	13.1	CW50H30YC20			C		large patch
13	CWH vm 1	913	15.8	0.4	9	324	479.0	30.6	11.4	H60YC30B10			N		large patch
13	CWH vm 1	912	14.2	13.0	9	324	453.7	30.3	13.1	CW50H30YC20	S		P		large patch
13	CWH vm 1	913	15.8	0.5	9	324	479.0	30.6	11.4	H60YC30B10			N		large patch
13	CWH vm 1	1067	5.4	3.7	9	324	479.0	30.6	11.4	H60YC30B10	S		N		large patch
13	CWH vm 2	913	15.8	0.2	9	324	479.0	30.6	11.4	H60YC30B10			N		large patch
				37.2											
14	CWH vm 1	916	2.8	2.7	9	310	441.7	30.2	11.4	H60FD30CW10			N		
				2.7											

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OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
15	CWH dm	922	6.1	3.9	9	324	421.0	30.6	11.4	H50CW30FD20			N		stream riparian
15	CWH vm 1	922	6.1	2.2	9	324	421.0	30.6	11.4	H50CW30FD20			N		stream riparian
				6.1											
16	CWH vm 1	903	38.5	0.3	2	33	68.4	13.1	22.0	HW68CW320			C		
16	CWH vm 1	919	47.1	1.1	3	48	200.0	19.3	23.2	CW50HW500			C		
16	CWH vm 1	903	38.5	0.1	2	33	68.4	13.1	22.0	HW68CW320			C		
16	CWH vm 1	903	38.5	0.7	2	33	68.4	13.1	22.0	HW68CW320			C		
16	CWH vm 1	920	16.2	2.8	9	324	362.9	31.0	16.2	FD90H100			C		
16	CWH dm	920	16.2	1.1	9	324	362.9	31.0	16.2	FD90H100			C		
16	CWH dm	921	5.4	0.4	2	35	6.6	8.5	14.0	HW45MB21EP18			C		
				6.6											
17	CWH vm 1	748	2.1	0.2	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 2	748	2.1	0.4	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 1	748	2.1	1.2	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 1	748	2.1	0.2	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 1	906	7.4	1.8	9	324	474.1	30.6	11.4	H60FD30CW10			N		
17	CWH vm 1	905	7.1	6.9	9	324	474.1	30.6	11.4	H60FD30CW10			N		
17	CWH vm 1	748	2.1	0.1	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 2	748	2.1	0.1	9	324	456.6	30.6	11.4	H50CW30B10			N		
17	CWH vm 1	906	7.4	5.7	9	324	474.1	30.6	11.4	H60FD30CW10			N		
				16.5											
18	CWH dm	900	2.8	2.4	9	324	421.0	30.6	11.4	H50CW30FD20			N		
				2.4											
19&20	CWH vm 1	713	25.6	2.8	9	324	712.1	41.9	18.2	CW60H30B10			N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	0.0	9	324	950.7	52.1	22.8	CW60H30B10		S	N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	0.1	9	324	950.7	52.1	22.8	CW60H30B10		S	N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	732	8.2	0.1	0	0	0.0	0.0	0.0	000			X		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	732	8.2	0.1	0	0	0.0	0.0	0.0	000			X		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	7.6	9	324	950.7	52.1	22.8	CW60H30B10		S	N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	0.2	9	324	950.7	52.1	22.8	CW60H30B10		S	P		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	755	16.7	2.2	9	324	930.6	51.7	26.7	FD60H30CW10			N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	753	20.7	7.3	9	324	721.6	42.4	16.7	H80B10CW10			N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	894	4.6	0.1	3	54	518.4	30.1	30.6	HW80BA200			C		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	754	2.7	0.4	4	74	351.7	26.1	21.1	H50CW30FD20			C		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	752	13.6	0.2	9	324	712.1	41.9	18.2	CW60H30B10	S		N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	752	13.6	1.2	9	324	712.1	41.9	18.2	CW60H30B10	S		N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	749	24.4	0.1	2	34	81.6	13.5	22.0	HW80CW200			C		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	1.8	9	324	950.7	52.1	22.8	CW60H30B10		S	N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	757	57.1	0.0	9	324	950.7	52.1	22.8	CW60H30B10		S	N		x-elev. link/slidetrack/stream riparian
19&20	CWH vm 1	749	24.4	0.0	2	34	81.6	13.5	22.0	HW80CW200			C		x-elev. link/slidetrack/stream riparian
				24.6											
21	MH mm 1	722	45.0	2.9	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
21	MH mm 1	722	45.0	0.7	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
21	MH mm 1	722	45.0	10.9	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
21	CWH vm 2	722	45.0	6.4	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
21	CWH vm 2	722	45.0	0.1	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
21	CWH vm 2	722	45.0	0.0	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
21	CWH vm 2	722	45.0	0.1	9	324	508.3	30.6	11.4	H50B30YC20			N		lake riparian
				21.1											
22	MH mm 1	710	45.0	5.7	9	324	483.6	30.6	11.4	H50YC30B20		S	N		
22	MH mm 1	710	45.0	3.8	9	324	483.6	30.6	11.4	H50YC30B20		S	N		
22	MH mm 1	1060	17.6	0.1	9	324	458.6	30.6	11.4	H50YC30B20	S		N		
				9.6											
23	CWH vm 1	1065	7.2	5.0	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 1	764	13.2	0.2	9	324	474.1	30.6	11.4	H60FD30CW10	S		N		
23	CWH vm 1	765	4.8	1.7	2	27	4.8	10.3	22.0	HW76CW240			C		
23	CWH vm 2	1065	7.2	0.5	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 2	1065	7.2	1.2	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 2	1065	7.2	0.2	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 1	1065	7.2	0.1	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 1	765	4.8	1.2	2	27	4.8	10.3	22.0	HW76CW240			C		
23	CWH vm 2	765	4.8	0.1	2	27	4.8	10.3	22.0	HW76CW240			C		
23	CWH vm 1	1066	26.7	2.7	9	324	474.1	30.6	11.4	H60FD30CW10			N		
23	CWH vm 1	1066	26.7	0.1	9	324	474.1	30.6	11.4	H60FD30CW10			N		
23	CWH vm 2	1065	7.2	0.1	9	324	398.6	30.6	11.4	H50CW30FD20	S		N		
23	CWH vm 2	1066	26.7	0.0	9	324	474.1	30.6	11.4	H60FD30CW10			N		
23	CWH vm 2	1066	26.7	0.3	9	324	474.1	30.6	11.4	H60FD30CW10			N		
23	CWH vm 1	1066	26.7	7.8	9	324	474.1	30.6	11.4	H60FD30CW10			N		
				21.2											
24	CWH vm 1	769	6.5	6.2	9	324	421.0	30.6	11.4	H50CW30FD20			N		
24	CWH vm 1	769	6.5	0.4	9	324	421.0	30.6	11.4	H50CW30FD20			N		
				6.6											
25	CWH vm 1	1034	5.9	4.7	9	324	682.0	42.4	16.7	H60CW400			C		
25	CWH vm 1	782	13.3	0.5	9	324	462.9	30.6	11.4	H50CW30B20	P		N		
25	CWH vm 2	782	13.3	8.7	9	324	462.9	30.6	11.4	H50CW30B20	P		N		
25	CWH vm 2	1034	5.9	1.2	9	324	682.0	42.4	16.7	H60CW400			C		
				15.2											
26	CWH vm 1	786	3.7	2.9	9	324	698.0	42.4	16.7	H60CW30B10	P		N		large patch/slidetrack
26	CWH vm 2	786	3.7	0.8	9	324	698.0	42.4	16.7	H60CW30B10	P		N		large patch/slidetrack
				3.7											
27	CWH vm 1	641	133.8	0.4	9	324	950.7	52.1	22.8	CW60H30B10		S	P		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	1.7	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	1.2	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	1.5	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	641	133.8	0.4	9	324	950.7	52.1	22.8	CW60H30B10		S	P		x-elev. link/stream riparian
27	CWH vm 1	657	3.6	0.1	5	94	705.1	38.6	29.3	FD50H30CW20			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	0.2	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
27	CWH vm 1	656	34.3	3.0	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	1.0	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	3.9	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	677	19.7	0.2	3	54	349.7	25.7	26.3	H60CW400			C		x-elev. link/stream riparian
27	CWH vm 1	656	34.3	2.5	9	324	1039.8	52.4	21.6	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	674	4.4	0.0	4	74	495.9	31.1	25.3	H60CW30B10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	1.1	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	1.1	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	5.9	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	5.2	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	1.4	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	0.1	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	0.1	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	0.4	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	0.8	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
27	CWH vm 1	1097	25.3	0.4	9	324	1042.2	52.5	21.7	B60H30CW10			C		x-elev. link/stream riparian
				32.7											
28	MH mm 1	620	18.3	13.3	9	324	508.3	30.6	11.4	H50B30YC20	P		N		
28	CWH vm 2	620	18.3	0.7	9	324	508.3	30.6	11.4	H50B30YC20	P		N		
28	CWH vm 2	620	18.3	0.3	9	324	508.3	30.6	11.4	H50B30YC20	P		N		
				14.2											
29	MH mm 1	606	3.8	3.8	9	324	553.4	31.5	10.7	B60H400	S		N		slidetrack, part of larger OGMA complex
				3.8											
30	MH mm 1	604	3.8	3.8	9	324	552.6	31.5	10.7	B60H30YC10	S		N		slidetrack, part of larger OGMA complex
30	MH mm 1	605	4.3	2.4	9	324	798.7	42.3	16.6	H60B30YC10	S		N		slidetrack, part of larger OGMA complex
30	CWH vm 2	605	4.3	1.8	9	324	798.7	42.3	16.6	H60B30YC10	S		N		slidetrack, part of larger OGMA complex
				8.1											
31	MH mm 1	602	3.9	3.9	9	324	552.6	31.5	10.7	B60H30YC10	S		N		large patch/slidetrack, part of larger OGMA complex
31	MH mm 1	597	5.4	5.4	9	324	531.7	31.5	10.7	B60H30YC10	S		N		large patch/slidetrack, part of larger OGMA complex
31	MH mm 1	601	14.4	3.2	9	324	798.7	42.3	16.6	H60B30YC10			C		large patch/slidetrack, part of larger OGMA complex
31	MH mm 1	601	14.4	5.0	9	324	798.7	42.3	16.6	H60B30YC10			C		large patch/slidetrack, part of larger OGMA complex
31	CWH vm 2	599	25.2	25.1	9	324	458.6	30.6	11.4	H50YC30B20			N		large patch/slidetrack, part of larger OGMA complex
31	CWH vm 2	601	14.4	6.1	9	324	798.7	42.3	16.6	H60B30YC10			C		large patch/slidetrack, part of larger OGMA complex
31	MH mm 1	599	25.2	0.1	9	324	458.6	30.6	11.4	H50YC30B20			N		large patch/slidetrack, part of larger OGMA complex
				48.8											
32	MH mm 1	689	12.9	4.8	9	324	483.6	30.6	11.4	H50YC30B20	S		N		
32	MH mm 1	812	7.9	2.8	9	324	483.6	30.6	11.4	H50YC30B20	S		N		
32	MH mm 1	821	6.7	6.7	9	324	553.4	31.5	10.7	B60H400	S		N		
				14.4											
33	CWH vm 1	683	1.4	1.4	9	324	918.1	51.7	26.7	FD50H30CW20			C		
				1.4											
34	CWH vm 2	577	3.6	1.8	9	324	918.1	51.7	26.7	FD50H30CW20			C		goat WR (slight overlap)

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
34	CWH vm 1	577	3.6	0.5	9	324	918.1	51.7	26.7	FD50H30CW20			C		goat WR (slight overlap)
34	CWH vm 1	577	3.6	0.1	9	324	918.1	51.7	26.7	FD50H30CW20			C		goat WR (slight overlap)
34	CWH vm 1	577	3.6	1.1	9	324	918.1	51.7	26.7	FD50H30CW20			C		goat WR (slight overlap)
				3.6											
35	CWH vm 2	1054	7.5	5.5	9	324	458.6	30.6	11.4	H50YC30B20	S		N		goat WR
35	CWH vm 1	1054	7.5	2.0	9	324	458.6	30.6	11.4	H50YC30B20	S		N		goat WR
				7.5											
36	CWH vm 2	1055	5.0	4.1	9	324	483.6	30.6	11.4	H50YC30B20	S		N		goat WR
36	CWH vm 2	804	13.3	0.2	9	324	603.4	42.1	21.9	FD90H100	S		N		goat WR
36	CWH vm 1	804	13.3	12.0	9	324	603.4	42.1	21.9	FD90H100	S		N		goat WR
36	CWH vm 1	1055	5.0	0.9	9	324	483.6	30.6	11.4	H50YC30B20	S		N		goat WR
				17.1											
37	CWH vm 2	818	7.5	4.7	9	324	879.6	52.1	22.8	CW50FD30H20	S		N		riparian gully
37	CWH vm 1	818	7.5	2.1	9	324	879.6	52.1	22.8	CW50FD30H20	S		N		riparian gully
37	CWH vm 1	672	2.2	2.2	9	324	709.3	42.1	21.9	FD60H30CW10			C		riparian gully
				8.9											
38	CWH vm 1	871	2.4	0.4	9	324	457.8	31.0	16.2	FD50H30CW20	S		N		
38	CWH vm 1	871	2.4	0.0	9	324	457.8	31.0	16.2	FD50H30CW20	S		P		
38	CWH vm 1	1035	31.9	0.1	9	324	486.6	30.6	11.4	H60FD30B10	S		N		
38	CWH vm 1	871	2.4	1.7	9	324	457.8	31.0	16.2	FD50H30CW20	S		N		
38	CWH vm 1	1035	31.9	0.1	9	324	486.6	30.6	11.4	H60FD30B10	S		N		
38	CWH vm 2	1035	31.9	0.1	9	324	486.6	30.6	11.4	H60FD30B10	S		N		
38	CWH vm 2	871	2.4	0.1	9	324	457.8	31.0	16.2	FD50H30CW20	S		N		
38	CWH vm 2	871	2.4	0.1	9	324	457.8	31.0	16.2	FD50H30CW20	S		N		
				2.7											
39	CWH vm 2	1035	31.9	10.7	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 1	1035	31.9	0.6	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	1035	31.9	0.9	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	1035	31.9	6.2	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 1	1035	31.9	0.4	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 1	1035	31.9	0.2	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	1035	31.9	0.4	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	1035	31.9	0.1	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 1	1035	31.9	0.1	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	1035	31.9	0.2	9	324	486.6	30.6	11.4	H60FD30B10	S		N		goat WR
39	CWH vm 2	874	8.9	0.8	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	3.7	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	1.8	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	0.3	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	0.2	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	1.4	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
39	CWH vm 1	874	8.9	0.0	9	324	739.0	42.4	16.7	H60FD30CW10			C		goat WR, riparian gully
				28.0											

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
40	CWH vm 1	887	9.5	2.4	6	114	499.7	31.5	19.3	H80CW10FD10	S		P		stream riparian
40	CWH vm 1	887	9.5	1.5	6	114	499.7	31.5	19.3	H80CW10FD10	S		P		stream riparian
40	CWH vm 1	887	9.5	1.0	6	114	499.7	31.5	19.3	H80CW10FD10	S		P		stream riparian
40	CWH dm	887	9.5	3.6	6	114	499.7	31.5	19.3	H80CW10FD10	S		P		stream riparian
40	CWH dm	887	9.5	1.0	6	114	499.7	31.5	19.3	H80CW10FD10	S		P		stream riparian
				9.5											
41	CWH vm 2	841	48.0	13.0	9	324	547.8	31.5	10.7	B60H400			N		spotted owl FMA
41	CWH dm	841	48.0	2.0	9	324	547.8	31.5	10.7	B60H400			N		spotted owl FMA
				14.9											
42	CWH dm	15	1.2	1.2	9	259	363.5	30.2	16.6	FD80HW200			C		spotted owl FMA
42	CWH dm	1087	2.2	2.2	9	259	363.5	30.2	16.6	FD80HW200			C		spotted owl FMA
				3.4											
43	CWH dm	6	17.6	1.4	9	259	402.5	31.3	17.1	FD40HW20DR20			C		spotted owl FMA
43	CWH dm	1103	2.7	0.6	9	259	402.5	31.3	17.1	FD40HW20DR20			C		spotted owl FMA
43	CWH dm	1103	2.7	2.2	9	259	402.5	31.3	17.1	FD40HW20DR20			C		spotted owl FMA
43	CWH dm	6	17.6	0.0	9	259	402.5	31.3	17.1	FD40HW20DR20			C		spotted owl FMA
				4.2											
44	CWH dm	831	10.8	4.6	9	324	533.4	30.6	11.4	H60B400			N		spotted owl FMA
44	CWH dm	831	10.8	4.2	9	324	533.4	30.6	11.4	H60B400			N		spotted owl FMA
44	CWH dm	831	10.8	0.0	9	324	533.4	30.6	11.4	H60B400			N		spotted owl FMA
				8.8											
45	MH mm 1	701	50.2	46.9	9	324	550.7	31.5	10.7	B60YC30H10	PR		N		lake riparian, spotted owl LTOH
45	CWH vm 2	701	50.2	3.3	9	324	550.7	31.5	10.7	B60YC30H10	PR		N		lake riparian, spotted owl LTOH
				50.1											
46	CWH dm	290	8.8	0.2	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	0.7	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	1.0	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	0.7	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	6.1	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	0.1	9	260	614.6	36.3	19.8	FD60HW30CW10			N	Brackendale	spotted owl LTOH, Bald eagles
46	CWH dm	290	8.8	0.0	9	260	614.6	36.3	19.8	FD60HW30CW10			P		
				8.8											
47	MH mm 1	244	11.3	10.0	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
47	MH mm 1	244	11.3	0.1	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
47	CWH vm 2	244	11.3	0.1	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
47	MH mm 1	244	11.3	0.8	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
47	CWH vm 2	244	11.3	0.3	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
				11.3											
48	CWH vm 2	239	18.8	5.6	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
48	MH mm 1	239	18.8	9.3	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
48	MH mm 1	807	0.7	0.7	9	259	725.3	38.5	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
48	CWH vm 2	239	18.8	3.8	9	260	726.3	38.6	15.5	BA60HW20CW20	R		N	Tantalus	lake riparian, spotted owl LTOH
				19.5											
49	CWH dm	253	26.6	3.3	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
49	CWH vm 2	253	26.6	2.5	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
49	CWH dm	253	26.6	19.3	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
49	CWH vm 2	253	26.6	1.0	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
49	CWH vm 2	253	26.6	0.1	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
49	CWH dm	252	6.8	3.4	7	134	500.9	29.1	16.1	HW50BA35FD8	SP		N	Tantalus	spotted owl LTOH
49	CWH vm 2	252	6.8	3.4	7	134	500.9	29.1	16.1	HW50BA35FD8	SP		N	Tantalus	spotted owl LTOH
49	CWH vm 2	253	26.6	0.4	8	169	559.9	34.6	21.1	FD60CW20HW20			N	Tantalus	spotted owl LTOH
				33.4											
50	CWH dm	255	14.6	14.6	5	100	548.0	33.7	25.0	FD30YC30BA30			N	Brackendale	spotted owl LTOH, Bald eagles
				14.6											
51	CWH dm	214	65.3	31.2	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Brackendale	stream riparian, spotted owl LTOH, Bald eagles
				31.2											
52	CWH dm	214	65.3	0.8	8	169	544.4	34.6	21.1	FD60CW20HW10			P		spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	7.5	8	169	544.4	34.6	21.1	FD60CW20HW10			P		spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	0.7	8	169	544.4	34.6	21.1	FD60CW20HW10			P		spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	0.5	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Tantalus	spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	0.1	8	169	544.4	34.6	21.1	FD60CW20HW10			P		spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	0.3	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Brackendale	spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	0.3	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Brackendale	spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	10.4	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Brackendale	spotted owl LTOH, Bald eagles
52	CWH dm	214	65.3	1.3	8	169	544.4	34.6	21.1	FD60CW20HW10			N	Brackendale	spotted owl LTOH, Bald eagles
				21.8											
53	CWH dm	528	16.2	1.4	8	224	383.7	25.0	10.6	H60B30YC10	SP		N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH dm	528	16.2	7.1	8	224	383.7	25.0	10.6	H60B30YC10	SP		N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	528	16.2	3.2	8	224	383.7	25.0	10.6	H60B30YC10	SP		N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	540	8.8	0.1	8	224	404.6	25.0	10.6	H60B30YC10			N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	540	8.8	7.9	8	224	404.6	25.0	10.6	H60B30YC10			N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	540	8.8	0.7	8	224	404.6	25.0	10.6	H60B30YC10			N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	528	16.2	0.8	8	224	383.7	25.0	10.6	H60B30YC10	SP		N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	528	16.2	3.6	8	224	383.7	25.0	10.6	H60B30YC10	SP		N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
53	CWH vm 2	539	43.0	13.5	8	224	391.6	25.3	10.1	B60H30YC10			N	Tantalus	large patch/x-elev. link/stream riparian, spotted owl LTOH
				38.4											
54	MH mm 1	549	5.3	5.3	9	324	502.8	30.6	11.4	H60B400	P	R	N	Tantalus	lake riparian, spotted owl LTOH
				5.3											
55	CWH vm 2	514	13.4	13.4	9	324	364.9	24.4	9.0	H90B100			N	Tantalus	stream riparian, spotted owl LTOH
				13.4											
56	CWH dm	695	15.0	0.1	9	324	693.1	42.1	21.9	FD60CW30H10			C		spotted owl LTOH
56	CWH dm	695	15.0	0.1	9	324	693.1	42.1	21.9	FD60CW30H10			C		spotted owl LTOH

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
56	CWH dm	695	15.0	0.1	9	324	693.1	42.1	21.9	FD60CW30H10			N	Tantalus	spotted owl LTOH
56	CWH dm	695	15.0	2.1	9	324	693.1	42.1	21.9	FD60CW30H10			N	Tantalus	spotted owl LTOH
56	CWH dm	695	15.0	0.1	9	324	693.1	42.1	21.9	FD60CW30H10			N		spotted owl LTOH
56	CWH dm	695	15.0	0.3	9	324	693.1	42.1	21.9	FD60CW30H10			N		spotted owl LTOH
				2.6											
57	CWH dm	587	27.8	9.5	4	74	374.6	40.2	35.3	MB50AC30DR20			N		stream riparian/FSZ/old vets associated with area. Bald eagles
57	CWH dm	585	20.5	3.2	4	74	362.0	35.1	33.8	DR50MB30AC20			N		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	585	20.5	3.8	4	74	362.0	35.1	33.8	DR50MB30AC20			N		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	586	2.5	0.5	0	0	0.0	0.0	0.0	000			X		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	586	2.5	0.1	0	0	0.0	0.0	0.0	000			X		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	585	20.5	0.3	4	74	362.0	35.1	33.8	DR50MB30AC20			N		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	585	20.5	3.3	4	74	362.0	35.1	33.8	DR50MB30AC20			N		stream riparian/FSZ/old vets associated with area, Bald eagles
57	CWH dm	586	2.5	0.1	0	0	0.0	0.0	0.0	000			X		stream riparian/FSZ/old vets associated with area, Bald eagles
				20.7											
58	CWH dm	296	33.9	0.5	9	324	541.8	31.5	10.7	B60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	296	33.9	0.4	9	324	541.8	31.5	10.7	B60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	296	33.9	0.3	9	324	541.8	31.5	10.7	B60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	296	33.9	2.7	9	324	541.8	31.5	10.7	B60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	296	33.9	25.5	9	324	541.8	31.5	10.7	B60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	296	33.9	0.5	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	299	5.2	5.2	9	324	528.1	30.6	11.4	H60B30YC10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	296	33.9	1.8	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	296	33.9	0.1	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	296	33.9	0.3	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	296	33.9	1.9	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	296	33.9	0.0	9	324	541.8	31.5	10.7	B60H30CW10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	262	15.0	2.1	9	324	454.9	31.0	16.2	FD50H30CW20			C		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	265	72.3	38.8	9	324	528.1	30.6	11.4	H60B30YC10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	262	15.0	0.8	9	324	454.9	31.0	16.2	FD50H30CW20			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	262	15.0	2.8	9	324	454.9	31.0	16.2	FD50H30CW20			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	262	15.0	7.4	9	324	454.9	31.0	16.2	FD50H30CW20			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	MH mm 1	265	72.3	8.6	9	324	528.1	30.6	11.4	H60B30YC10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	266	23.0	1.4	9	324	468.0	30.6	11.4	H80B10FD10			N		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	266	23.0	21.6	9	324	468.0	30.6	11.4	H80B10FD10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	262	15.0	1.8	9	324	454.9	31.0	16.2	FD50H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	MH mm 1	265	72.3	24.9	9	324	528.1	30.6	11.4	H60B30YC10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	269	16.3	0.7	9	324	452.3	31.0	16.2	FD60H30CW10			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	269	16.3	10.1	9	324	452.3	31.0	16.2	FD60H30CW10			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	269	16.3	5.4	9	324	452.3	31.0	16.2	FD60H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	269	16.3	0.0	9	324	452.3	31.0	16.2	FD60H30CW10			P		large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	549	27.8	13.1	9	324	465.3	31.0	16.2	FD50H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	MH mm 1	549	27.8	14.8	9	324	465.3	31.0	16.2	FD50H30CW10			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	550	40.8	33.7	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	550	40.8	4.0	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH dm	550	40.8	0.5	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	550	40.8	0.6	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	CWH vm 2	550	40.8	0.2	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
58	CWH vm 2	550	40.8	0.1	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
58	MH mm 1	550	40.8	1.8	9	324	714.9	42.1	21.9	FD40H30CW20			N	Tantalus	large patch/MAMU/x-elev. link/stream rip/goat WR/spow LTOH
				234.3											
60	CWH dm	335	12.0	0.5	4	74	274.6	26.7	24.0	DR60MB400		W	N		stream riparian
60	CWH dm	335	12.0	1.1	4	74	274.6	26.7	24.0	DR60MB400		W	N		stream riparian
60	CWH dm	337	5.5	0.4	9	324	685.4	42.1	21.9	FD60CW400		W	P		stream riparian
60	CWH dm	335	12.0	0.4	4	74	274.6	26.7	24.0	DR60MB400		W	N		stream riparian
60	CWH dm	337	5.5	2.9	9	324	685.4	42.1	21.9	FD60CW400		W	P		stream riparian
60	CWH dm	337	5.5	2.2	9	324	685.4	42.1	21.9	FD60CW400		W	P		stream riparian
				7.5											
61	CWH vm 2	170	1.0	0.4	9	309	481.4	28.4	9.7	BA80HW200			N		stream riparian
61	CWH vm 1	170	1.0	0.5	9	309	481.4	28.4	9.7	BA80HW200			N		stream riparian
61	CWH vm 1	236	6.3	0.1	9	309	485.7	28.4	9.7	BA80HW200			N		stream riparian
61	CWH vm 1	236	6.3	6.0	9	309	485.7	28.4	9.7	BA80HW200			N		stream riparian
61	CWH vm 1	236	6.3	0.2	9	309	485.7	28.4	9.7	BA80HW200			N	Tantalus	stream riparian
				7.3											
62	CWH vm 2	225	0.7	0.7	9	324	548.8	31.5	10.7	B60H30YC10	P		N		slidetrack, spotted owl LTOH
				0.7											
63	CWH vm 2	224	3.6	2.6	9	324	552.6	31.5	10.7	B60H30YC10	P		N		slidetrack, spotted owl LTOH
63	CWH vm 2	224	3.6	1.0	9	324	552.6	31.5	10.7	B60H30YC10	P		N	Tantalus	slidetrack, spotted owl LTOH
				3.6											
64	CWH vm 2	222	3.2	3.2	9	324	367.0	24.5	9.0	H60B30YC10			N		slidetrack, spotted owl LTOH
				3.2											
65	CWH vm 2	221	14.2	14.1	9	324	367.0	24.5	9.0	H60B30YC10			N		slidetrack/stream riparian, spotted owl LTOH
65	CWH vm 2	220	4.5	1.5	9	324	367.0	24.5	9.0	H60B30YC10	P		N		slidetrack/stream riparian, spotted owl LTOH
65	MH mm 1	220	4.5	3.1	9	324	367.0	24.5	9.0	H60B30YC10	P		N		slidetrack/stream riparian, spotted owl LTOH
				18.7											
66	CWH vm 2	203	23.2	12.6	9	324	377.5	24.7	8.2	B60HW400			N	Tantalus	slidetrack/stream riparian, spotted owl LTOH
66	MH mm 1	203	23.2	0.2	9	324	377.5	24.7	8.2	B60HW400			N	Tantalus	slidetrack/stream riparian, spotted owl LTOH
66	MH mm 1	203	23.2	2.6	9	324	377.5	24.7	8.2	B60HW400			N	Tantalus	slidetrack/stream riparian, spotted owl LTOH
66	MH mm 1	203	23.2	2.2	9	324	377.5	24.7	8.2	B60HW400			N	Tantalus	slidetrack/stream riparian, spotted owl LTOH
66	MH mm 1	203	23.2	5.6	9	324	377.5	24.7	8.2	B60HW400			N	Tantalus	slidetrack/stream riparian, spotted owl LTOH
				23.3											
67	MH mm 1	215	17.5	8.4	9	284	501.1	28.1	10.0	BA70HW300	S		N		stream riparian, spotted owl LTOH
67	MH mm 1	218	28.3	8.5	9	324	547.8	31.5	10.7	B60H400			N		stream riparian, spotted owl LTOH
67	MH mm 1	217	1.4	1.4	9	324	547.8	31.5	10.7	B60H400	P		N		stream riparian, spotted owl LTOH
67	MH mm 1	213	8.3	5.6	9	324	394.3	24.7	8.2	B60H30YC10	P		N		stream riparian, spotted owl LTOH
67	CWH vm 2	215	17.5	0.1	9	284	501.1	28.1	10.0	BA70HW300	S		N		stream riparian, spotted owl LTOH
67	CWH vm 2	218	28.3	14.9	9	324	547.8	31.5	10.7	B60H400			N		stream riparian, spotted owl LTOH
67	MH mm 1	218	28.3	4.5	9	324	547.8	31.5	10.7	B60H400			N		stream riparian, spotted owl LTOH
67	CWH vm 2	218	28.3	0.2	9	324	547.8	31.5	10.7	B60H400			N	Tantalus	stream riparian, spotted owl LTOH

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
				43.7											
68	MH mm 1	178	16.2	6.7	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
68	MH mm 1	733	32.3	1.0	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
68	MH mm 1	178	16.2	0.1	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
68	MH mm 1	733	32.3	25.3	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
68	CWH vm 2	733	32.3	0.3	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
68	CWH vm 2	733	32.3	0.6	9	284	501.1	28.1	10.0	BA70HW300	S		N		goat WR, spotted owl LTOH
				33.9											
69	MH mm 2	125	65.8	11.8	9	259	466.1	28.5	10.7	BA60HW30FD10	S		N		goat WR
69	MH mm 2	125	65.8	1.5	9	259	466.1	28.5	10.7	BA60HW30FD10	S		N		goat WR
69	MH mm 2	125	65.8	3.2	9	259	466.1	28.5	10.7	BA60HW30FD10	S		N		goat WR
69	CWH ms 1	125	65.8	4.7	9	259	466.1	28.5	10.7	BA60HW30FD10	S		N		goat WR
				21.2											
70	CWH ms 1	93	69.5	47.4	9	324	730.3	39.6	14.4	BA50HW40YC10			N		large patch
70	CWH ms 1	93	69.5	3.9	9	324	730.3	39.6	14.4	BA50HW40YC10			N		large patch
				51.3											
71	CWH ms 1	116	28.8	0.7	6	106	517.5	30.1	21.8	FD73HW15CW6			C		
71	CWH ds 1	116	28.8	5.6	6	106	517.5	30.1	21.8	FD73HW15CW6			C		
71	CWH ds 1	115	5.6	0.5	9	259	575.7	35.3	19.3	FD60HW30CW10			C		
71	CWH ds 1	114	7.9	0.6	5	83	29.8	13.9	10.9	PL87FD130			N		
71	CWH ds 1	115	5.6	0.4	9	259	575.7	35.3	19.3	FD60HW30CW10			C		
71	CWH ds 1	115	5.6	0.9	9	259	575.7	35.3	19.3	FD60HW30CW10			C		
71	CWH ds 1	114	7.9	0.1	5	83	29.8	13.9	10.9	PL87FD130			N		
71	CWH ds 1	115	5.6	2.9	9	259	575.7	35.3	19.3	FD60HW30CW10			C		
71	CWH ds 1	114	7.9	0.0	5	83	29.8	13.9	10.9	PL87FD130			N		
71	CWH ds 1	115	5.6	0.0	9	259	575.7	35.3	19.3	FD60HW30CW10			C		
				11.8											
72	CWH ds 1	200	3.5	1.4	9	259	443.3	34.3	18.7	FD40PL30HW20	R	W	P		stream riparian/lake riparian
72	CWH ds 1	203	4.4	1.0	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
72	CWH ds 1	439	6.1	0.1	9	273	792.1	42.7	19.6	CW60H30FD10			C		stream riparian/lake riparian
72	CWH ds 1	439	6.1	5.7	9	273	792.1	42.7	19.6	CW60H30FD10			C		stream riparian/lake riparian
72	CWH ds 1	437	9.3	5.5	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
72	CWH ds 1	437	9.3	1.0	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
72	CWH ds 1	434	11.6	2.5	9	259	443.3	34.3	18.7	FD40PL30HW20	R	W	P		stream riparian/lake riparian
72	CWH ds 1	434	11.6	8.2	9	259	443.3	34.3	18.7	FD40PL30HW20	R	W	P		stream riparian/lake riparian
72	CWH ds 1	439	6.1	0.2	9	273	792.1	42.7	19.6	CW60H30FD10			C		stream riparian/lake riparian
72	CWH ds 1	437	9.3	0.0	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
72	CWH ds 1	434	11.6	0.1	9	259	443.3	34.3	18.7	FD40PL30HW20	R	W	P		stream riparian/lake riparian
72	CWH ds 1	437	9.3	0.1	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
72	CWH ds 1	437	9.3	0.1	8	169	376.2	27.4	17.2	PL60FD30HW10	R	W	N		stream riparian/lake riparian
				25.9											
73	CWH dm	419	33.5	15.7	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH ds 1	419	33.5	1.4	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	13.5	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH ds 1	419	33.5	1.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
73	CWH dm	419	33.5	0.1	9	324	200.4	24.4	12.8	FD60PL400			N		
				32.3											
74	CWH ds 1	460	3.0	2.5	9	324	212.2	24.4	12.8	FD60PL30H10			N		
74	CWH ds 1	460	3.0	0.5	9	324	212.2	24.4	12.8	FD60PL30H10			N		
				3.0											
75	CWH dm	201	1.7	1.7	9	324	309.9	24.4	12.8	FD60H400			N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	46.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.9	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.9	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.2	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	465	13.5	5.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	465	13.5	0.1	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	465	13.5	5.0	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.4	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH dm	465	13.5	2.9	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	385	49.5	0.1	9	324	309.9	24.4	12.8	FD60H400	SP		N		large patch/x-elev. link/lake riparian
75	CWH ds 1	751	19.3	3.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	1.9	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	487	13.7	8.0	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	465	13.5	0.3	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	1.5	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH ds 1	751	19.3	0.5	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	8.7	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	2.1	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	0.7	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.3	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.6	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	0.1	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	0.1	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	0.2	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.8	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	0.3	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian

Appendix IV: OGMA Summary and Rationale Description for Lower Squamish

OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
75	CWH vm 2	487	13.7	1.9	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	0.0	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	1.6	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	0.7	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	487	13.7	0.1	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	1.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	1.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	0.0	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	0.3	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	0.5	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	1.2	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH dm	489	13.5	0.1	9	324	449.8	31.0	16.2	FD60H400			C		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	0.2	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.1	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.0	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	5.5	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH vm 2	487	13.7	0.3	9	324	303.6	24.5	9.0	H60FD400			N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.1	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	751	19.3	0.0	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	478	4.2	0.8	9	324	303.6	24.5	9.0	H60FD400	W		N		large patch/x-elev. link/lake riparian
75	CWH vm 2	478	4.2	0.3	9	324	303.6	24.5	9.0	H60FD400	W		N		large patch/x-elev. link/lake riparian
75	CWH dm	478	4.2	0.4	9	324	303.6	24.5	9.0	H60FD400	W		N		large patch/x-elev. link/lake riparian
75	CWH vm 2	751	19.3	0.1	9	324	328.3	24.5	9.0	H60FD400	R	W	N		large patch/x-elev. link/lake riparian
75	CWH dm	479	23.4	0.1	8	149	433.0	28.6	18.3	FD60CW20HW20		S	P		large patch/x-elev. link/lake riparian
75	CWH vm 2	479	23.4	0.1	8	149	433.0	28.6	18.3	FD60CW20HW20		S	P		large patch/x-elev. link/lake riparian
				110.2											
76	CWH dm	485	1.6	1.2	9	324	303.6	24.5	9.0	H60FD400			N		
76	CWH dm	485	1.6	0.4	9	324	303.6	24.5	9.0	H60FD400			N		
				1.6											
77	CWH dm	604	44.1	0.3	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	33.4	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	0.5	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	0.5	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	1.3	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	4.2	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	0.2	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH dm	604	44.1	0.4	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
77	CWH vm 2	604	44.1	0.2	9	324	333.0	31.0	16.2	FD60PL30H10			N		large patch, DWR
				41.0											
78	CWH dm	599	29.3	21.8	9	324	336.2	31.0	16.2	FD50PL30H20		R	N		large patch
78	CWH dm	599	29.3	0.1	9	324	336.2	31.0	16.2	FD50PL30H20		R	C		large patch
78	CWH dm	599	29.3	0.1	9	324	336.2	31.0	16.2	FD50PL30H20		R	C		large patch
				22.0											
79	CWH dm	661	5.2	5.2	8	210	389.0	30.4	17.5	FD90PL100		R	N		

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OGMA #	BEC Variant	Poly. #	Poly. Area	Area in OGMA	Age Class	Proj. Age	Total Vol.	Proj. Height	Site Index	Species Composition	ESA 1	ESA 2	Cont. Class	Protected Area	Additional Comments
79	CWH dm	826	0.2	0.2	8	209	388.7	30.4	17.5	FD90PL100		R	N		
				5.4											
80	CWH dm	660	21.1	7.4	8	210	389.0	30.4	17.5	FD90PL100		R	N		
				7.4											

Notes:

Note that OGMAs 19 and 20 are directly adjacent and that info for these OGMAs is combined.
Note that OGMA 59 is missing from this summary having been deleted from an earlier map with the numbering scheme not updated.

ESA codes:

ESA1 - S	extremely fragile or unstable soils
ESA2 - S	significantly fragile or unstable soils, but less than ESA1 - S
ESA1 - W	of critical importance to wildlife
ESA2 - W	high value for wildife but less than for ESA1 - W
ESA1 - P	severe regeneration problems caused by geoclimatic factors
ESA2 - R	high recreational values, but less than ESA1 - R

Contribution class codes:

N	noncontributing
P	partially contributing
C	fully contributing

Additional Comments on OGMAs

Comments provided are for the entire OGMA, primarily in regards to biological values.
The following describes the abbreviated terms and other OGMA descriptions provided to these comments:

pot. MAMU	large patch with potential marbled murrelet nesting habitat (based on general stand characteristics and patch size)
CWS	community watershed (designated under the Forest Practices Code)
x-elev. link	notable cross-elevational linkage, generally providing linkage over 1 km (map distance, actual distance greater) and across BEC lines
slidetrack	notable slidetrack feature, with apparent wildlife forage values, associated with OGMA (i.e. within or adjacent to)
stream riparian	OGMA includes riparian forests adjacent to a significant stream (fish bearing stream, S1 to S4, or large S5 or)
lake riparian	OGMA includes riparian forests adjacent to a lake
FSZ	known fisheries sensitive zone values (floodplain offchannel fish habitats)
goat WR	OGMA overlaps with an area identified by WLAP as mountain goat winter range
spotted owl FMA	spotted owl forest management area
spow LTOH	spotted owl long term owl habitat