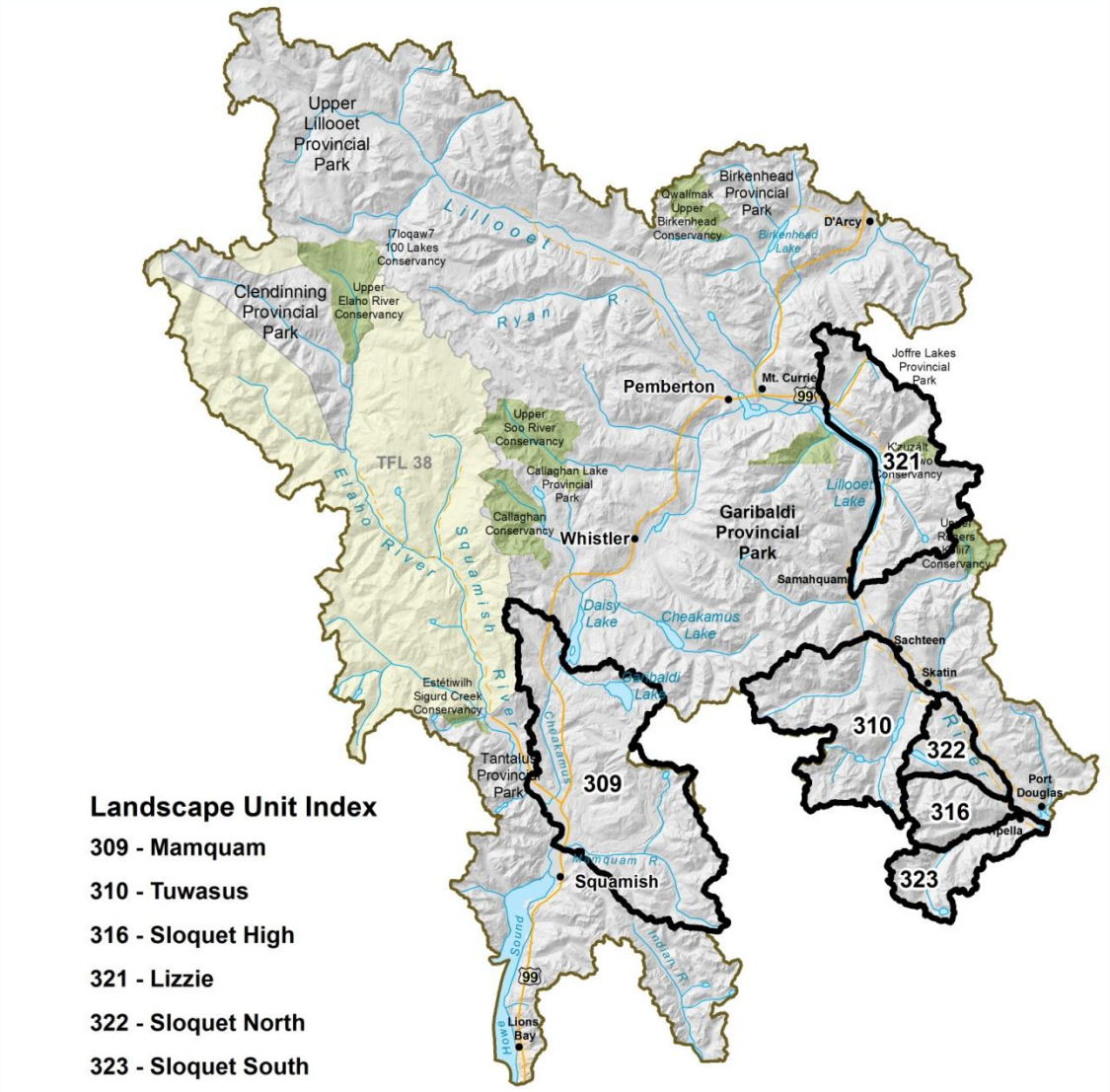
Landscape Unit Plan

for Old-Growth Management Areas



This plan supports the legal establishment of old-growth management areas for the following Landscape Units in the Soo Timber Supply Area: Lizzie, Mamquam, Sloquet High, Sloquet North, Sloquet South, and Tuwasus.

BRITISH COLUMBIA
Ministry of Forests, Lands and Natural Resource Operations

Sea to Sky Natural Resource District

South Coast Natural Resource Region

Executive Summary

This landscape unit plan (LUP) is a companion document to the Ministerial Order to establish Old-growth Management Areas (OGMAs) and land use objectives, enacted through the Land Use Objectives Regulation (LUOR) under Section 93.4 of the *Land Act*, supporting objectives in the *Forest and Range Practices Act* (FRPA).

OGMAs are established to ensure the preservation of a minimum area of old-growth forests in the Crown-managed forested land base are maintained in perpetuity, throughout each biogeoclimatic ecosystem classification (BEC) subzone variant in each landscape unit.

The Sea to Sky Natural Resource District is subdivided into Landscape Units, which are groups of entire watersheds (e.g. 50,000 to 100,000 hectares) each containing unique biodiversity features, wildlife habitat and resource utilization activities. Minimum thresholds to retain old-growth are established for each landscape unit. These targets are calculated from an analysis of available Crown Forested Land Base (CFLB). CFLB includes all forests available for timber harvesting, in addition to forests where timber harvesting is not allowed, such as provincial parks and protected areas, wildlife habitat areas, and First Nations cultural sites. CFLB does not include private land, Indian Reserves and long term recreational leases; old-growth targets and legal objectives do not apply in these areas.

Note: Maps contained in this LUP illustrate the general location of OGMAs in each Landscape Unit (LU). Please refer to Schedule A of the Ministerial Order to view the legal maps, or download geo-referenced shape files contained in the B.C. Geographic Warehouse[1] for precise location information.

Legal objectives contained in the Ministerial Order describe the management provisions to retain old-growth forests. These objectives must be followed by *Forest Act* tenure holders; they specify incursion limits for forest management activities including forest health, safety, and access where no other opportunities are practicable. First Nations traditional uses are exempt from these land use objectives. Proposed impacts to old-growth targets by other *Land Act* tenure holders (e.g. roads, power lines) may be mitigated on a case by case basis through discussions between proponents and Ministry of Forests, Lands and Natural Resource Operations (FLNR) where possible.

The content of this plan provides supplemental information for other plans, such as the Sea-to-Sky Land and Resource Management Plan, plans associated with wildlife habitat areas, park management plans, fire management plans, recreation plans, and other landscape level and site-specific operational plans. This plan contains recent updates to the Crown Forested Land Base (CFLB) with the best available and most current information. The intent of this plan is to retain forests for biodiversity and old-growth without unduly constraining forest harvesting. The plan supports the designation of old-growth management areas and is not intended to take the place of other plans developed for other purposes. Existing old-growth forests that are already constrained by other land use designations contribute to the old-growth targets.

[1] http://www.data.gov.bc.ca/

This landscape unit plan provides direction to manage for old-growth forests in the amounts stated in Table 1 below. 44% of the total LU area is comprised of Crown Forested Land Base (CFLB). 14% of the CFLB is spatially identified as Old-Growth Management Areas (OGMA).

Table 1.Summary of Old-Growth Management Areas, by Landscape Unit (LU)

LU Name	BEO	Total Area (ha)	CFLB Area (ha)	# of OGMAs	OGMA Area (ha)	Average Size (ha)	% of CFLB
Tuwasus	Intermediate	43,980	14,989	27	1,828	68	12%
Sloquet High	High	12,778	7,062	55	1,252	23	18%
Sloquet North	Intermediate	11,145	7,017	21	798	38	11%
Sloquet South	Intermediate	14,904	6,933	62	1,083	17	16%
Lizzie	Intermediate	43,108	16,268	38	1,868	49	11%
Mamquam	Low	75,854	38,319	126	5,287	42	14%
Total		**201,769**	**90,587**	**329**	**12,117**	**40**	**13%**

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1. Introduction

The purpose of this Landscape Unit Plan is to support the legal designation of Old-Growth Management Areas (OGMAs) in the Sea to Sky Natural Resource District. Planning for OGMAs is essential for implementation of the *Forest and Range Practices Act* (FRPA), which enables legal establishment of objectives for landscape level biodiversity.

OGMAs are legally designated to retain representative forest stands in old forest conditions, spatially distributed across each landscape unit (LU). Old forest retention is important to biodiversity, wildlife habitat, ecosystems, water quality and other values such as First Nations cultural heritage. OGMAs were not established in forest stands that were in approved blocks or where proposed logging or roads were planned. This follows the direction outlined in the Landscape Unit Planning Guide.

21 LUs are established within the Sea to Sky Natural Resource District. Each LU is assigned a Biodiversity Emphasis Option (BEO) of High, Intermediate or Low through a previously completed ranking process. This BEO designation determines the minimum required amount of old forest (as a percent of the Crown Forested Land Base) to maintain biodiversity values in each LU. The Crown Forested Land Base (CFLB) is a term used to define productive forest that remains under Provincial government jurisdiction.

After identifying draft OGMAs, the general public is invited to review and provide comments back to FLNR for a period of 60 days. First Nations are also invited to review and comment. OGMA establishment is a resource protection measure and is not intended to impact First Nations territorial rights or title. First Nations in the Sea to Sky Natural Resource District that hold forest tenure are invited to participate in the OGMA process through the Forest Management Leadership Team (FMLT). First Nations may be consulted in other ways such as notification through Forest Consultation and Revenue Sharing Agreements (FCRSA). Although active involvement by First Nations associated business interests may occur where they have forest tenure, the interests of a First Nations licensee are generally unrelated to First Nations constitutional land claims, traditional uses or treaty interests. Correspondence with First Nations licensees and their representatives do not constitute legally defined consultation.

This document should be read in conjunction with the Landscape Unit Planning Guide (LUPG), the Biodiversity Guidebook, the Sea-to-Sky Land and Resource Management Plan (2008), and the Vancouver Regional Landscape Unit Planning Strategy (1999). These documents provide an understanding of government policy, planning processes and biodiversity concepts that are associated with landscape unit planning.

The ministerial order accompanying this plan provides binding direction for resource management to those tenured under the *Forest Act*, but activities allowed by other acts should still consider this direction. Planning for objectives that are calculated as a percentage of the CFLB means that where the CFLB changes due to deletions, the target amounts must be changed to reflect the true CFLB amount.

2. Provincial old-growth Framework

OGMAs legalized by Ministerial Order through the Land Use Objectives Regulation replace the 2008 Provincial Non-spatial Old-Growth Order to manage for old-growth by setting targets for each LU in the Province. Licensee Forest Stewardship Plans that provide management objectives should be amended within two years in recognition of the legally established OGMAs.

OGMA planning ensures that a targeted amount of old-growth forests located throughout each LU will be identified to contribute to old-growth and biodiversity. OGMAs placed within or adjacent to wildlife management areas may effectively overlap constraints to timber harvesting on the land base and may increase OGMA size. These larger patches may then improve connectivity between habitats favourable to wildlife.

OGMAs were selected based on a review of stand attributes in an effort to maximize their value from a biodiversity standpoint while minimizing timber supply impact. In general, opportunities to recruit larger patches to provide for forest interior conditions were favoured over smaller patches. In this search, impact on the timber supply was minimized by combining areas in the non-contributing land base (parks, ecological reserves) with areas within the timber harvesting land base. In addition, a significant number of smaller remnant patches containing age class 9 (greater than 250 years old) were delineated in conformance with the Landscape Unit Planning Guidebook (LUPG).

2.2. Existing 'higher-level' plans

The Sea-to-Sky Land and Resource Management Plan (LRMP) is a sub-regional land use plan that covers the entire Sea to Sky Natural Resource District. The LRMP provides direction for future planning and management of natural resources, and provides a framework to resolve land use issues. The Sea-to-Sky LRMP is built upon the outcomes of government-to-government discussions between the Province and First Nations, and on recommendations put forward by a public planning forum representing a range of resource sectors and other local stakeholders. Many of the areas legally designated through the LRMP for purposes other than forest harvesting became prime candidates for old-growth target representation.

2.3. Natural Resource Values

The Sea to Sky Natural Resource District is rich in natural resources, with the vast majority of the significant resource values dependent on undisturbed forests and streams. The intent of defining OGMAs is not to address the individual needs of all natural resource values, such as individual wildlife species, but rather to provide a coarse filter to manage landscape level biodiversity. Through the conservation of OGMAs at the landscape level it is expected that the majority of old-growth dependent species can be accommodated. Individual species needs are met through a separate process under the Identified Wildlife Management Strategy (IWMS), through the designation of Wildlife Habitat Areas (WHAs) and Ungulate Winter Ranges (UWRs).

2.3.1. Wildlife and biodiversity

Twenty wildlife species of specific management concern are known to be, or may occur, in the Sea to Sky Natural Resource District. These include red-listed, blue-listed, and yellow-listed and regionally important species. Effective Landscape Unit planning retains (or recruits) a series of old forest habitat patches across probable movement corridors to allow wildlife dispersal and gene flow. For species such as deer, which are particularly susceptible to mortality in winter, connecting or aggregating OGMAs with areas designated for deer winter range effectively augments deer habitat, in addition to benefiting general biodiversity.

The intent of defining OGMAs is not to address the individual needs of all these species, but rather to provide a strong foundation for landscape level biodiversity management. The species of specific concern when identifying OGMAs are those species with established legal objectives, namely mountain goat, grizzly bear, goshawk, spotted owl, marbled murrelet, mule deer and moose. Coastal tailed frog is listed as a species of concern, and has no established legal objectives.

In establishing wildlife habitat areas, forest types in the District were thoroughly assessed utilizing Geographic Information System tools to identify forested polygons with characteristics associated with potential habitat requirements. The most important attributes that were considered in this assessment included species, stand age, tree height, crown closure, site index, and tree volume.

2.3.2. Wildlife management areas

There are two Wildlife Management Areas within the Sea to Sky Natural Resource District, listed in Table 2. The primary designation tool for conservation lands is the "Wildlife Management Area" (WMA) designation under section 4 of the BC *Wildlife Act*. Wildlife Management Areas may also provide important buffer zones, habitat corridors or linkages between core protected areas. Such linkages may be essential to enable movement of species during seasonal migrations or in response to short-term ecological variations or longer-term climate changes.

The ministry may authorize or restrict activities within a WMA or work with other statutory authorities to do so. A management plan, developed in consultation with partners, First Nations, agencies, stakeholders and the public is used to help guide activities in a WMA.

Table 2. Wildlife Management Areas

WILDLIFE MANAGEMENT AREA NAME	AREA (ha)
PEMBERTON WETLANDS WILDLIFE MANAGEMENT AREA	754
SKWELWIL'EM SQUAMISH ESTUARY	663
Total	**1,417**

While the priority for WMAs is to maintain or manage species and their habitats, limited resource use may be accommodated (e.g. forestry or mining). For this reason, WMAs are not considered "protected area". The protected area designation under the *Wildlife Act* and the *Parks Act* includes parks, protected areas, ecological reserves, recreation areas and conservancies.

2.3.3. Wildlife habitat areas

The Sea to Sky Natural Resource District is home to a number of wildlife species that require habitat to be maintained in undisturbed or managed conditions. Habitat becomes legally protected by Ministerial Order through the Government Actions Regulation (GAR).

In the District more than two hundred WHA polygons and over six hundred UWR polygons are legally designated to protect habitat for wildlife species. The forest habitat requirements of many of these species, e.g. spotted owl, mule deer, are representative of the characteristics most desirable for OGMAs. WHA and UWR areas frequently introduce considerable constraint to the managed forest and are excellent candidates for OGMA locations, where appropriate old forest conditions are present. A summary of the species included in WHA planning are provided below.

2.3.3.1. Marbled murrelet

Marbled Murrelets (*Brachyramphus marmoratus*) are small seabirds that live along the northern Pacific Coast of North America. They are listed as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and are on the provincial Red-list. Marbled murrelets nest in old-growth forests along the coast of British Columbia within 30 km of the Pacific coast. A few birds venture farther inland, up to 80 km from the coast.

In general, suitable habitat is old-growth coniferous forest, providing large trees with suitable platforms (limbs or deformities >15 cm diameter), and a variable canopy structure allowing access to the platforms. Areas that are designated for marbled murrelets are also appropriate OGMA candidates. WHAs located along the corridor of the Squamish River and adjacent to Garibaldi Provincial Park are legally established under GAR.

2.3.3.2. Northern spotted owl

The northern spotted owl (*Strix occidentalis caurina*) is a permanent resident along coastal-interior transitional old-growth forest from southwestern British Columbia to southern California, and along the southern Rocky Mountains from central Colorado to central Mexico.

The culmination of draft work (initiated in 1997) resulted in the legal establishment of nine areas in 2013 to protect habitat for the northern spotted owl. These areas total 63,250 hectares of Crown Land, mostly located in mature and old-growth forests across the District, in two categories – Long-Term Owl Habitat Area and Managed Future Habitat Areas - each providing general wildlife measure direction for retention of old-growth values. These areas provide old-growth representation opportunities for OGMA designation.

2.3.3.3. Grizzly bear

The Sea to Sky District overlaps 4 Grizzly Bear (*Ursus arctos horribilis)* Population Units (GBPU). They are all considered “threatened” meaning the grizzly populations occurring in each unit is well below the 50% population carrying capacity calculated through habitat availability modelling.

145 WHA’s have been established to protect grizzly bear habitat (98 in the Soo TSA and 47 in TFL 38) for a total of 38,047 ha of crown land. Grizzly bears are found in a wide range of habitats including;

floodplain, riparian areas, wetlands, avalanche tracks, berry producing areas and high elevation areas and the backs of drainages. Seasonal habitat use depends on food availability. These areas were considered for designation as OGMA where the protected habitat areas met the criteria for old growth forest types.

2.3.3.4. Deer and moose (ungulate) winter ranges

The Sea to Sky Natural Resource District represents a transitional boundary between two subspecies of deer: the mule deer, which is concentrated in the interior of the province, and the Columbian black-tailed deer (*Odocoileus hemionus*) which occurs more frequently in coastal areas. Moose (*Alces alces*) is predominantly an interior ungulate, with infrequent occurrences throughout coastal habitats.

Functional winter range is critical to maintaining deer and moose populations. Old-growth forests provide habitat attributes necessary for winter survival. Retention winter range is composed of forested habitat that usually consists of mature or old-growth forest stands. Rotation winter range is habitat in various stages of succession to provide winter habitat when the distance between retention winter ranges is usually more than 4 kilometres or in areas where there is a lower snow pack and known deer winter use. Some moose winter range zones are identified for the production of winter forage for moose. Areas providing appropriate habitat for deer and moose winter range were approved in 2005, with the most recent amendments occurring in 2013. These areas were considered for designation as OGMA where the protected habitat areas met the criteria for old growth forest types.

2.3.3.5. Mountain goat (ungulate) winter range

Forest cover with good snow interception cover adjacent to escape terrain is an important characteristic of mountain goat (*Oreamnos americanus*) winter ranges. These areas provide accessible forage during times of deep snow. During very severe winters, snow may make even low-elevation bluffs inaccessible, forcing goats into timbered stands far from preferred escape terrain, occasionally as low as sea level.

Old-growth forests with large diameter trees and multi-layered, closed canopies are most efficient at reducing the depth of snow on the ground. At snow depths greater than 50 cm, forbs and ferns become unavailable and goats forage on conifer leaves and lichens from standing trees and litterfall, and on mosses from substrates not covered by snow. Older forests are generally associated with more abundant arboreal lichens and litterfall. Areas providing appropriate habitat for goat winter range were approved in 2003. Some portions of this habitat were found to have appropriate old-growth characteristics for OGMA designation.

2.3.4. Parks and Conservancies

There are twelve Class A Provincial Parks and six conservancies within the Sea to Sky Natural Resource District. These designations prohibit the extraction of natural resources such as timber harvesting and mineral extraction, nor do they allow additional designation of Crown land tenures that could impact the intended management goals of these areas. The Ministry of Environment/BC Parks is responsible for parks and conservancies.

Forests within parks and conservancies are classed as non-contributing Crown Forested Land Base since they are still on Crown Land but are not considered part of the Timber Harvesting Land Base (THLB) and

do not contribute to Allowable Annual Cut calculations. These forests are included within LU areas and contribute to OGMA targets. OGMAs may be located in parks and conservancies; however they do not receive legal status under the Land Use Objectives Regulation (LUOR) since they are already fully protected.

Table 3. List of Provincial Parks in the Sea to Sky Natural Resource District.

PROTECTED LANDS NAME	AREA (ha)
ALICE LAKE PARK	412
BIRKENHEAD LAKE PARK	10,447
BLACKCOMB GLACIER PARK	221
BRACKENDALE EAGLES PARK	764
BRANDYWINE FALLS PARK	417
CALLAGHAN LAKE PARK	2,696
MURRIN PARK	31
NAIRN FALLS PARK	179
PORTEAU COVE PARK	58
SHANNON FALLS PARK	88
STAWAMUS CHIEF PARK	530
UPPER LILLOOET PARK	19,522
Total	**35,365**

Table 4. List of Conservancies in the Sea to Sky Natural Resource District.

CONSERVANCY AREA NAME	AREA (ha)
CALLAGHAN CONSERVANCY	8,087
ESTE-TIWILH/SIGURD CREEK CONSERVANCY	1,139
I7LOQAW7/100 LAKES PLATEAU CONSERVANCY	1,030
MKWAL'TS CONSERVANCY	3,862
UPPER ELAHO VALLEY CONSERVANCY	10,261
UPPER SOO CONSERVANCY	11,312
Total	**35,691**

3. OGMA Planning

3.1. Process Initiation

The planning process for OGMAs begins by identifying Crown land tenures that may be impacted by OGMA designation, since timber harvesting is not allowed in OGMAs. *Forest Act* tenures are administered by the Ministry of Forests, Lands and Natural Resource Operations (FLNR). For tenure holders other than those administered by FLNR, such as mineral claims, the intent is to avoid placement of OGMAs within existing tenures where possible. Other tenures, such as commercial recreation, are evaluated on the basis of their need to remove living trees for future infrastructure. Often tenure holders provide information to evaluate these areas.

Each LU contains varying amounts of a range of forest types, including mature and old forested habitat, which are constrained by the management of other values that are utilized for old seral representation. For example, wildlife habitat areas in the district contribute many areas for old-growth representation. Opportunities to co-locate OGMAs in old-growth forests already identified as WHAs assist in reducing the cumulative impact to forest licensees.

The location of OGMAs is also intended to ensure that separate planning processes complement each other. For example, OGMAs placed within or adjacent to spotted owl or marbled murrelet Wildlife Habitat Areas (WHAs) overlap constraints and increase OGMA patch size. These larger areas restricting forest harvesting may improve connectivity between patches of adjacent wildlife habitat.

Suitable forest stands are identified adjacent to high value wildlife and recreational features such as wetland, lakes and streams wherever possible to enhance these values. Environmentally Sensitive Areas (ESA) are included in OGMAs where they provide old or mature forest representation. Younger forest stands may be included within OGMA boundaries, reflecting operational constraints related to forest management while recruiting additional area. This approach increases the likelihood of sustaining ecosystems and well-distributed wildlife populations across their natural range.

3.1.1. Assessment and review of candidate forest stands

Within the list of candidate areas distributed across the land base, OGMAs are selected based on a review of stand attributes in an effort to maximize their value from a biodiversity standpoint while minimizing timber supply impact. Spatial distribution of OGMAs throughout each LU is also an important selection consideration. Larger patches of forest are selected as OGMAs to provide forest interior habitat conditions, although this is not possible in some BEC variants where the size of remaining old-growth areas is limited by other development activities. Smaller patches with natural edges containing old forest are also included.

OGMAs are distributed spatially and not concentrated in a particular area or mapsheet. This is in keeping with the “coarse filter” approach of biodiversity management, whereby representative old-growth stands are protected in order to maintain ecosystem processes and specific wildlife habitat requirements.

A review of the satellite imagery and inventory data confirmed alignment of forest cover attributes and suitability of each stand for OGMA inclusion. Numerous draft OGMAs that were identified through past efforts were checked in the field or by aerial surveys to verify the presence of desirable characteristics.

3.1.2. Mitigation of Timber Supply Impacts

This plan is intended to maximize the effectiveness of biodiversity requirements while minimizing impacts to the Soo Timber Supply Area. Impact to timber supply may be unavoidable because old-growth levels are already low due to extensive wildfire and harvesting history, and relatively low operability (ability to access timber). Specific measures adopted to minimize THLB impacts from OGMAs included the following:

1. Co-location of OGMAs with other protected values. Areas identified as Environmentally-Sensitive Areas (ESA) and areas where access is difficult were included within OGMAs where possible and where compatible with biodiversity strategies. Riparian management areas and stands within the floodplain containing backwater channels and wet areas were included where possible. OGMAs were also placed in legally established wildlife habitat where there was appropriate old-growth, such as in parts of mountain goat habitat, deer winter range, and long-term spotted owl habitat.

2. Operability. During the LU planning process, careful consideration was made to ensure that timber access was not cut off by OGMA delineation. Where possible, access corridors were left out of OGMAs with boundaries delineated to enable management of adjacent stands.

3. Age Class. Many non-contributing areas (Crown Forested Land Base but not Timber Harvesting Land Base) are not included in OGMAs, typically due to their young age class and absence of old-growth structural characteristics. As stands in these areas mature they may become suitable as an OGMA replacing those within the THLB. Riparian management over the course of many years may speed the progress of some stands to develop old-growth structural attributes. In order to assess this, periodic review and possible revision of OGMAs will be necessary.

4. Timber Supply Review Direction. Local licensees consulted during OGMA selection for their operational knowledge helped ensure that impacts to their AAC would be minimized. The FLNR Timber Supply Review (2011) produced maps of timber harvesting land base and non-contributing forest that are not intended to be accurate at the small scale of OGMA delineation. Involvement of licensee staff familiar with their chart areas ensured that impacts were minimized, as per TSR determination direction.

Short and long-term impacts on timber supply were addressed by first delineating OGMAs in the non-contributing forest land base; however, the non-contributing land base could not always satisfy old forest requirements and portions of the timber harvesting land base from most constrained to least constrained were assessed and included as OGMAs. Generally, more THLB was required to meet minimum targets in lower elevation variants due to a longer disturbance history and lower amounts of non-contributing forest land.

3.2. Determining Crown Forested Land Base status

Crown Forested Land Base (CFLB) is determined by calculating the amount of forested land (in hectares) where legal jurisdiction to manage the forest resources rests with the Crown (provincial government). Private Land is excluded from the Crown Forested Land Base and does not contribute to the OGMA targets.

Determining the actual amount of CFLB requires a complete knowledge of the land base, with access to the various layers that help inform the calculation. Some examples of land that are excluded from the CFLB calculation includes private land, Indian Reserves, municipal land, woodlots, long term Crown leases (e.g. resort development) and right-of-way tenures for infrastructure such as roads and power lines. Non-forested areas are excluded from CFLB calculations, and therefore do not contribute in the calculation for OGMA targets. Detailed information on the process to calculate the CFLB can be found in the Landscape Unit Planning Guide (1999).

3.2.1. First Nations

A number of First Nations hold traditional territory throughout the Sea to Sky Natural Resource District, with land management for several of these First Nations being guided by one or more agreements with the Provincial government. Table 2 lists each First Nation and corresponding Land Use Planning Agreements (LUPA) and/or Forest Consultation and Revenue Sharing Agreements (FCRSA), and the territory area (in hectares) overlapped by this landscape unit plan.

The completed Land Use Planning Agreements with First nations establish cultural areas on Crown land, through various legal tools (e.g. Land Use Objectives Regulation, *Land Act*), which set aside and restrict resource development on Crown Land. Many of these areas are considered good candidates for OGMA establishment as they often include old-growth forests and remain Crown land, with clear direction to restrict activities such as logging or access. Provisions in the legal orders designating these sites specifically exclude timber harvesting or other tenures, while allowing harvesting of non-timber forest products and other First Nations traditional cultural uses.

Table 5. First Nations, agreements, and territory area (ha) overlapped by this landscape unit plan.

First Nation – Agreement reference	Territory Area (ha)
Chehalis - FCRSA	134
Douglas (Xat'tsa) – FCRSA	42,481
In-SHUCK-ch – FCRSA, LUPA	104,916
Kwantlen First Nation - Interim Agreement on Forest Opportunities	51,011
Lil’wat – FCRSA, LUPA	55,284
N'Quatqua - FCRSA	7,983
Seabird Island First Nation - FCRSA	38,484
Shishalh - FCRSA	488

Skawahlook First Nation - FCRSA	38,484
Squamish Nation – FCRSA, LUPA	76,849
Tsleil-Waututh Nation – FCRSA, LUPA	53,303

3.2.2. Resource tenure holders

The planning process includes identification of tenures that are administered by agencies such as FLNRO and Ministry of Energy and Mines. The management intent is to avoid placement of OGMAs within existing tenure areas where resource extraction may impact old-growth structural characteristics.

3.2.2.1. Forest tenure holders

OGMAs are selected where they cause the least impact to approved or planned blocks and roads. All affected licensees are involved in the OGMA location process to ensure that the intent of this LU plan is conveyed, and any impacts to planned development activities are minimized.

A number of *Forest Act* tenure holders are responsible to manage for resource objectives, which includes managing objectives to maintain old-growth forests through Forest Stewardship Plans. Woodlots are small area-based tenures that manage old-growth specifically for their own chart areas, which are not available for OGMA selection. Table 3 outlines affected *Forest Act* tenure holders and identifies relevant Landscape Units for their respective chart areas:

Table 6. Forestry tenure holders

Tenure Holder	**Landscape Unit(s)**	**Chart Area Affected (ha)**
BC Timber Sales	Sloquet South, Sloquet High, Lizzie, Mamquam	128,427
Black Mount Logging Inc.	Mamquam	18,009
Lil'wat Construction Enterprises Inc.	Lizzie	8,629
In-SHUCK-ch Development Corporation	Lizzie	27,192
Tsetspa7 Forestry Limitied Partnership	Sloquet, Tuwasus	17,884
North West Squamish Forestry Ltd. Partnership	Mamquam	11,049
Pebble Creek Timber Ltd.	Lizzie	15,779
Squamish Mills Ltd.	Lizzie, Sloquet, Tuwasus	53,207

3.2.2.2. Mining tenure holders

Subsurface resources (minerals, coal, oil, gas and geothermal) and aggregate resources are valuable to the province, but are difficult to quantify due to their hidden nature. The Ministry of Energy and Mines (MEM) rate the industrial and metallic mineral potential across the district, 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.

Mineral tenures are located throughout the Sea to Sky Natural Resource District; when locating OGMAs these tenures are avoided where possible. Mineral tenure holders must apply to FLNR for a master license to cut to remove trees during mineral exploration or development of a mine site.

When established over an existing mineral and gas permit or tenure, an OGMA will not impact their status and will not prevent exploration and development activities. A tenure holder may 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.

3.2.2.3. Other tenure holders

Other tenures on Crown land that could impact forest designated as OGMA may include Land Act tenures such as power line rights of way, hydro power projects, and other infrastructure developments where forest areas are impacted. During the process to locate OGMAs, existing tenures and pending applications are avoided where possible.

3.2.3. Timber resources

Commercially valuable tree species in the Sea to Sky Natural Resource District consist mainly of Douglas-fir, western hemlock, amabilis fir, and western red-cedar in the lower elevations, and sub-alpine fir, mountain hemlock, and yellow cedar at the higher elevations.

Continued access to commercially valuable timber, including stands of second growth, is a significant concern to forest licensees. The principles guiding OGMA designation, as described in both the Landscape Unit Planning Guide (1999) and Biodiversity Guidebook (1995), are intended to ensure representative old-growth stands are distributed across each LU without unduly restricting timber harvesting opportunity. In order to meet biodiversity objectives in areas where prior timber harvesting has significantly reduced old-growth, some restrictions to the timber resources are inevitable.

Timber resources are defined as forest stands found throughout the Sea to Sky Natural Resource District that are available for economic harvest (“operable”). Timber resources are also described by their contribution to the Allowable Annual Cut, as detailed in Timber Supply Review documents, most recently the Timber Supply Review for the Soo Timber Supply Area (2011). Timber resources are often measured by operability, or the availability of the resource for timber harvesting based on characteristics such as slope, timber volume and soil stability.

3.2.4. Water

Water bodies provide both aquatic ecosystem habitat and habitat diversity in wetlands and uplands which supports a high degree of biodiversity. OGMAs are often linked to riparian areas to increase the size of the reserves to increase habitat diversity. The riparian areas also provide linkages between other reserves. Lakes, rivers and non-forested riparian ecosystems such as swamps and bogs are not included in the Crown Forested Land Base and do not contribute to OGMA targets.

A number of community watersheds are located close to communities along the corridor and are a source of drinking water for residents. Where Integrated Watershed Management Plans exist, standards for acceptable forest management practices within the watershed are set. Designating OGMAs within community watersheds where suitable old-growth forests are present is a preferred practice.

3.2.4.1. Fish habitat

The scope of OGMA planning is focused on maintaining old-growth forests and terrestrial biodiversity, while recognizing that maintaining water quality for fish habitat is an important strategy for overall forest management practices. OGMAs may be situated in riparian areas and along gullies to maintain forest types in sensitive ecosystems, which provide additional protection for fish habitat.

3.2.5. Recreation and tourism

The Sea to Sky Natural Resource District contains many well-developed outdoor recreation opportunities, ranging from motorized activities such as snowmobiling, motorcycling and ATV use to non-motorized activities such as hiking and camping, back country ski touring, mountain biking, climbing, and rafting. Most recreation activities occur along Highway 99, accessed by other connecting roads developed by the forest industry. Other provincial parks and recreation sites provide access and use for other opportunities such as boating, camping and angling.

Outdoor recreation activities range in type and intensity depending on the availability of natural features and accessibility. Most camping sites and recreation trails are most commonly maintained by a combination of provincial resources and partnerships with First Nations or local community groups. Where recreation features are known and old-growth forests are located in the same area, OGMAs may be established to recognize the contribution of old-growth forests to the user experience and to ensure old-growth forest structure is maintained over the long-term.

3.3. Selecting Old-Growth Management Areas

3.3.1. Boundary mapping

OGMA selection follows a procedure as outlined in the Landscape Unit Planning Guide. OGMAs are first selected from forest stands considered non-contributing to timber harvesting (NC), then if the OGMA target is not met, inoperable or constrained Timber Harvesting Landbase (THLB) and, finally, unconstrained THLB may be designated. To identify the OGMAs, all suitable forest types within the entire landscape unit are identified by a combination of satellite imagery and Vegetation Resource Inventory (VRI) information interpretation.

Old-growth forest stands were selected to ensure that OGMAs represent a range of forest types, including productivity indicators such as site index, volume, and species composition. Stands targeted as OGMAs may also be chosen to include other attributes, such as a significant component of ‘veteran’ trees or other old-growth structures, oldest available stands, mature stands in ecosystem complexes, or important wildlife habitat. Such stands were first selected from NC lands.

OGMA boundaries utilized natural features wherever possible to ensure they could be located on the ground. OGMA boundaries were delineated to include complete forest stands (forest cover polygons identified using the Vegetation Resource Inventory, or VRI) wherever possible. Georectified orthophotos and satellite imagery ensured that all boundaries followed clearly identifiable forest type features; these have been mapped at a range of scales to ensure accuracy to +/- 0.5 hectares. Due to the slight inaccuracies of the VRI boundaries compared to the actual stand boundaries as observed via satellite imagery, the reporting of OGMA seral structure may include small residual components of adjacent stand types, including wildlife tree patches and other inoperable areas. As young stands in NC forest progress in age and structure to become suitable old-growth candidates, they may be designated as an OGMA to replace a current OGMA within the THLB.

The selected polygons are evaluated for distribution by biogeoclimatic variant boundaries, and the resulting areas were reviewed by forest licensees operating in those areas. Licensees indicated which areas identified as OGMA-suitable were operable stands in order to select OGMAs that would minimize impacts to the THLB. OGMA-suitable area was then reduced to meet the representation targets. In many cases the amount of area selected for OGMA representation exceeds the minimum legal objective for biodiversity. This is intentional and is meant to account for potential mapping errors.

3.3.2. OGMA analysis

A broad range of information is available for analysis and reporting on forest characteristics and other features within OGMAs. Analysis on such details as tree species composition, seral stage (age class) distribution, site index (productivity), and crown closure. Where OGMAs overlap with other existing land value designations that limit forest harvesting (e.g. parks, wildlife habitat areas, First Nations cultural sites) these are reported in Appendix III – Landscape Unit OGMA Summary for each LU. Other overlapping land interests such as recreation and tourism values such as camping sites and trails can be measured and reported. This information helps inform stakeholders where their interests may be of concern because of potential impact to OGMAs, and also assist land managers in making informed decisions that consider all affected interests. Please note that detailed analysis information described above does not appear in this plan.

3.4. Review and comment

A key element of the planning process includes the opportunity for First Nations, local interest groups, stakeholders and the general public to review and provide feedback to land managers on OGMAs. This opportunity is provided during a sixty-day period after potential land and resource impacts are reviewed with tenure holders. Once the First Nations and public review and comment period has ended, any additional information brought forward that can inform and improve the OGMA locations, Landscape Unit plan and the Ministerial Order is considered prior to approval of the final version.

3.5. OGMA Monitoring

Ongoing improvements to land and resource information, including forest inventory and biodiversity data informed by scientific research and field sampling conducted by the Forest and Range Evaluation Program (FREP), are monitored by FLNR staff and may result in updates to the OGMA dataset over time. Any incursions that may occur will also be tracked by the Sea to Sky Natural Resource District office, to maintain landscape-level biodiversity and old-growth targets. Other policy developments at the regional and provincial levels may help inform and improve practices to manage OGMAs, and these changes will be communicated to licensees in a timely manner.

The district office is responsible for monitoring OGMA incursions from non-forestry tenures such as power lines and transportation. Statutory updates to the OGMA database is to occur periodically; forest licensees will be notified when OGMA boundaries have changed.

Changes include OGMA incursions from forest licensees that are allowed through the ministerial order for safety, forest health, or to facilitate necessary operational activities where there is no other practicable option. Incursions specified in the Ministerial Order are governed by professional reliance and do not require approval from the District Manager as long as the forest licensee adheres to the provisions listed in the Ministerial Order and the activities are consistent with their approved Forest Stewardship Plan (FSP).

A process to monitor these incursions is necessary to ensure old-growth targets continue to be met, and consists of steps taken by the tenure holder and by the district office. A general description of these steps is provided below:

Steps taken by the tenure holder (harvesting or road construction that impacts an OGMA):

1) Notify the district office and provide a brief rationale that supports the need for the OGMA incursion. All proposed amendments to OGMAs must be consistent with the Ministerial Order.
2) Summarize the forest types within incursion area and show that the proposed replacement area (if necessary) provides equal or better old-growth qualities and quantity.
3) Provide GIS shape files of the incursion area and replacement area.

Steps taken by the district office (to monitor OGMA incursions and administer database):

1) File the incursion notice.
2) Confirm the incursion and replacement areas are within the Crown forest and meet requirements for landscape-level old-growth and biodiversity.
3) Update the district OGMA database as soon as possible, and notify licensees.
4) Update the legal layer in the BC Geographic Warehouse.

In addition to the incursions described above, there may also be exceptional circumstances where a forest licensee finds that an established OGMA unintentionally restricts access or harvesting opportunity. This may occur where OGMA placement at the landscape scale does not reflect land features identified at the scale of operability; if the licensee finds that the OGMA in unduly restrictive, and equivalent or better structural biodiversity characteristics are present nearby, they may apply to the

District Manager to amend the OGMA. Proposals for these types of incursions lead to a decision to either amend the ministerial order and legal data layer, or to refuse the request. For such requests, the following steps are provided as an example of the process to be taken by the licensee and the District office:

Process steps in proposal to harvest within an OGMA, requiring decision by the District Manager:

1) Tenure holder requests OGMA amendment. Application includes:
    a. Supporting rationale to amend the ministerial order, e.g. no other practicable options to locate a road to access forest resources.
    b. Analysis of forested areas supporting the requirement that the replacement area provides equal or better old-growth and biodiversity characteristics than the original OGMA.
    c. GIS shape files of proposed amendment to the OGMA boundary.
    d. Photos, field notes, or other supporting documentation.
2) District staff reviews application and may need to discuss application with proponent. Review includes:
    a. Consider landscape-level biodiversity requirements; this may include analysis of CFLB to determine actual OGMA target amount and the current amount of established OGMA.
    b. Review forest types and determine whether OGMA features provide unique or irreplaceable old-growth biodiversity characteristics, and whether impact to those features can be mitigated, or replaced by a new OGMA.
    c. Review other resource values or Crown land status for impediments that might restrict the proposed change.
    d. Site visit if necessary to view current and proposed OGMA areas.
    e. Compile information and provide options for District Manager consideration.
    f. If approved, update the local database and legal data layers.

Past regional policies provide administrative direction similar to the above for forest licensees who apply to amend an OGMA. These policy documents provide good general directions but may not always be applicable given unique circumstances and landbase changes since the Ministerial Order was written. When in doubt, proponents who wish to amend an OGMA should contact the district office.

4. Landscape Unit Descriptions and Old-Growth Targets

This section provides summaries for each Landscape Unit, including Crown land ownership, contributions to old-growth targets from the Crown Forested Land Base, and a summary table reporting Old-Growth Management Area distribution among BEC variants. Key maps, analysis and reports of overlaps with other values are provided for each OGMA in Appendix III – Landscape Unit OGMA Summary.

Landscape Units (LUs) in the Sea to Sky Natural Resource District lie within the Southern Pacific Ranges Ecosection. Climate here is best described by elevational gradient. At low elevations summers are warm

and dry, while winters are mild and moist with short-lived or intermittent snow packs. Mid elevations are characterized by cool and relatively dry summers and cool moist winters with moderate snowfall. Higher elevations have long moist, cold winters with high snowfall and short, cool, moist summers.

For the LUs included in this plan, OGMAs are located in the following nine BEC units: Coastal Western Hemlock zone, 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), Moist warm Engelmann Spruce – Subalpine Fir Subzone (ESSFmw), Wet Warm Interior Douglas-fir Subzone (IDFww), Windward Moist Maritme Mountain Hemlock Variant (MHmm1), and Leeward Moist Maritme Mountain Hemlock Variant (MHmm2).

These nine BEC units represent three different Natural Disturbance Types (NDTs), with CWHvm1, CWHvm2, and MHmm1 in NDT1 (rare stand initiating events), CWHdm, CWHds1, and CWHms1 in NDT 2 (infrequent stand-initiating events), and IDFww in NDT4 (ecosystems with frequent stand maintaining fires). Alpine tundra and subalpine parkland ecosystems are classed as NDT5.

Forests in NDT1 historically were generally multi-storied and uneven-aged, with regeneration occurring in gaps created by the death of individual trees or small patches of trees. Approximately 32% of the planning area is within NDT1. NDT2 forest ecosystems are influenced by infrequent stand-initiating events and historically were usually even-aged, but extended post-fire regeneration periods produced some stands with uneven-aged characteristics. Approximately 36% of the District is within NDT2. Ecosystems in the NDT5 are not considered productive forest since they occur above or immediately below the alpine tree line and are characterised by short and harsh growing seasons. Approximately 30% of the District is within NDT5. NDT4 types are typically forest stands originating from wildfires, and make up approximately 3% of the District.

Substantial timber harvesting has occurred in the valleys and lower elevations (CWHdm, CWHds1, CWHms1 and CWHvm1). In addition, the fire history associated with the drier Landscape Units has resulted in significant old seral deficits (relative to the minimum targets) in the CWHdm and CWHvm1 BEC variants. Recruitment OGMAs have been delineated in these areas. Otherwise, sufficient old-growth representation targets in the other BEC variants can be met predominantly from the non-contributing land base.

4.1. Lizzie Landscape Unit

The Lizzie Landscape Unit covers 43,107 hectares, located on the east side of Lillooet Lake, from the lake shoreline to the height of land that also delineates the Sea to Sky Natural Resource District boundary. Birkenhead and Gates LUs are adjacent to the north side, and Rogers LU is adjacent on the south side. Lizzie LU is ranked as an intermediate Biodiversity Emphasis Option, meaning previously assessment biodiversity values are higher than average, and retention targets for old-growth are also higher.

As illustrated by Table 7 below, of the total LU area, 16,268 ha (38%) is within the Crown Forested Land Base, with 4,512 ha of Crown forest contributing to the Timber Harvesting Land Base (THLB). The remaining 26,839 ha (62%) is non-forested (rock, alpine tundra, water) and non-Crown (private land, Indian reserve) and have been excluded from any OGMA contributions and calculations.

Table 7. Lizzie LU – Total land ownership summary (areas in hectares)

	Crown Forested Land base (CFLB)				
Landscape Unit	**Contributing**	**Non-Contributing**	**Total**	**Excluded**	**Total Area**
Crown – Forest Management Unit	4,512.2	10,776.2	15,288.4	24,110.6	39,399.0
Crown – misc lease >100ha	0.0	0.8	0.8	4.4	5.2
Crown - Plantation Forest Reserve > 100ha	0.0	37.0	37.0	5.0	42.0
Crown – Provincial Park Equivalent or Reserves	0.0	690.1	690.1	1,388.7	2,078.8
Crown – Provincial Parks	0.0	240.9	240.9	1,250.6	1,491.5
Crown - UREP >100ha	0.0	10.9	10.9	10.9	21.8
Federal Reserve	0.0	0.0	0.0	1.2	1.2
Indian Reserve	0.0	0.0	0.0	1.9	1.9
Private – Crown Grant	0.0	0.0	0.0	66.2	66.2
Lizzie Total	**4,512.2**	**11,755.9**	**16,268.1**	**26,839.6**	**43,107.7**

As illustrated by Table 8, significant portion of the CFLB for Lizzie LU is considered non-contributing, with more than 11,000 ha located in LRMP Wildland Zones and Provincial Park. These areas are generally higher elevation ecosystems. The distribution of CFLB age classes among OGMA location includes portions of mature and early seral stage forest areas. This is a reflection of the extensive harvesting activity that occurred prior to setting targets to maintain old-growth forests. A summary of the age class distribution for the CFLB is provided in Appendix III, which shows 25% old, 49% mature, 6% mid, and 20% early.

Table 8. Lizzie LU - CFLB summary of BEC variants and Old-growth targets (areas in hectares).

	Crown Forested Land Base (CFLB)				
BEC Variant	**Contributing**	**Non-Contributing**	**Total Area**	**OGMA Target %**	**OGMA Target**
CWHds1	1,682.8	2,944.2	4,626.9	9%	416.4
CWHms1	1,730.4	2,598.3	4,328.7	9%	389.6
MHmm2	318.1	2,235.3	2,553.4	19%	485.1
ESSFmw	369.6	1,868.1	2,237.8	9%	201.4
ESSFmwp	0.2	113.6	113.8	0%	0.0
IDFww	411.1	1,670.1	2,081.3	13%	270.6
CMAunp	0.0	4.9	4.9	0%	0.0

MHmmp2	0.0	321.3	321.3	0%	0.0
Lizzie Total	**4,512.2**	**11,755.9**	**16,268.1**	**0%**	**1,763.1**

Table 9 provides a summary of the actual distribution of OGMAs throughout the Lizzie LU, for each BEC variant, for a total of more than 1,800 ha. Further analysis is provided in Appendix III, which shows that 60% of the area designated for OGMA includes other values that are protected by other measures. Given the disproportion of age classes, the average old-growth forests captured within OGMAs is only 55%. The area amount of OGMA that includes old and mature forests is 98%, indicating that the process to locate OGMAs in primarily old and mature forests and avoiding early and mid seral staged forests was successful.

Table 9.Lizzie LU – OGMA target summary of BEC variants by CFLB (areas in hectares)

	Crown Forested Land Base (CFLB)			
BEC Unit	**CFLB Area (ha)**	**Target Area (ha)**	**OGMA Area (ha)**	**Surplus Area (ha)**
CWHds1	4,627.0	416.0	465.8	49.3
CWHms1	4,329.0	390.0	398.7	9.2
MHmm2	2,554.0	485.0	490.9	5.6
ESSFmw	2,238.0	201.0	225.5	24.1
ESSFmwp	114.0	0.0	0.0	0.0
IDFww	2,081.0	271.0	286.9	16.3
CMAunp	5.0	0.0	0.0	0.0
MHmmp2	321.0	0.0	0.0	0.0
TOTAL	**16,268.1**	**1,763.2**	**1,867.8**	**104.6**

4.2. Mamquam Landscape Unit

The Mamquam LU covers a total area of 75,853 ha, encompassing the Mamquam River and Cheekeye River watersheds as well a several smaller drainages in the north and west of the LU. The Cheakamus River flows through the western portion of the LU to its confluence with the Squamish River near the community of Squamish. As illustrated by Table 10, of the total LU area 38,319 ha (50%) is within the Crown Forested Land Base, and 19,062 ha of Crown forest is within the THLB. The remaining 37,534 ha (49%) is non-forested or non-Crown.

The Mamquam LU is within the Soo Timber Supply Area (TSA). Crown forest is allocated to several chart areas, with BC Timber Sales, Black Mount Logging and Northwest Squamish Forestry operating in the LU. One Woodlot License is located north of Brackendale, just west of Alice Lake Park. Another is located southeast of Squamish, south of the Mamquam River. OGMAs have not been placed in either Woodlot Licence.

Table 10. Mamquam LU - Total land ownership summary

Landscape Unit	Crown Forested Landbase (CFLB) Contributing	Non-Contributing	Total	Excluded	Total Area
Mamquam					
Crown – Active Timber Licence in TSA	6,544.7	1,200.9	7,745.6	716.3	8,461.9
Crown – Christmas Tree Permit	3.2	0.0	3.2	44.0	47.2
Crown - Ecological Reserve	7.9	531.9	539.8	28.0	567.8
Crown – Forest Management Unit	12,464.0	11,505.2	23,969.3	11,574.4	35,543.7
Crown – misc lease >100ha	7.8	3.0	10.8	27.1	37.9
Crown - Plantation Forest Reserve > 100ha	32.9	96.7	129.6	71.5	201.1
Crown – Provincial Park Equivalent or Reserves	0.0	0.0	0.0	13.1	13.1
Crown – Provincial Parks	0.3	5,800.2	5,800.5	19,520.9	25,321.4
Crown - Schedule B Land TFL	0.0	0.1	0.1	14.1	14.2
Crown - UREP >100ha	1.4	115.3	116.7	7.1	123.8
Crown – Woodlot Licence Schedule B	0.6	0.0	0.6	1,028.6	1,029.2
Federal Reserve	0.0	0.3	0.3	1.9	2.2
Indian Reserve	0.0	0.0	0.0	951.7	951.7
Private – Crown Grant	0.0	2.7	2.7	3,535.7	3,538.4
Mamquam Total	**19,062.7**	**19,256.4**	**38,319.1**	**37,534.6**	**75,853.6**

The Mamquam LU lies within the Southern Pacific Ranges Ecosection. Its climate is best described by elevational gradient. At low elevations summers are warm and dry, while winters are mild and moist with short-lived or intermittent snow packs. Mid elevations are characterized by cool and relatively dry summers and cool moist winters with moderate snowfall. Higher elevations have long moist, cold winters with high snowfall and short, cool, moist summers.

Substantial harvesting has occurred in the valleys and lower elevations (CWHdm, CWHds1, CWHms1 and CWHvm1) of the Mamquam LU. In addition, the fire history associated with the drier parts of this LU has resulted in significant old seral deficits in the CWH dm and CWHvm1 BEC variants. Recruitment OGMAs have been delineated in these areas. Otherwise, sufficient old-growth representation targets in the other BEC variants can be met predominantly from the non-contributing (NC) land base.

As illustrated by Table 11, the target of OGMA amounts to just over 5000 ha.

Table 11. Mamquam LU - - CFLB summary of BEC variants and Old-growth targets

BEC Variant	Crown Forested Land Base (CFLB) Contributing	Non-Contributing	Total Area	OGMA Target %	OGMA Target

BEC Variant	Crown Forested Land Base (CFLB)			OGMA Target %	OGMA Target
	Contributing	Non-Contributing	Total Area		
CWHdm	4,648.0	2,878.4	7,526.4	9%	677.4
CWHds1	1,330.6	2,043.3	3,373.9	9%	303.6
CWHms1	1,833.8	2,274.7	4,108.5	9%	369.8
CWHvm2	7,102.0	3,351.3	10,453.3	13%	1,358.9
MHmm2	448.1	2,593.6	3,041.8	19%	577.9
MHmm1	3,638.2	5,607.3	9,245.5	19%	1,756.7
CMAunp	0.0	104.7	104.7	0%	0.0
MHmmp1	61.8	360.9	422.7	0%	0.0
MHmmp2	0.0	42.4	42.4	0%	0.0
Total	**19,062.7**	**19,256.4**	**38,319.1**	**0%**	**5,044.3**

Approximately 50% of the productive forest in the Mamquam LU is early seral or early mature forest (<80 years). Mature forests (81-250 years) occupy about 19%, and old forests (>250 years) occupy approximately 31% of the productive forest in the LU. Additional analysis provided in Appendix III further describes the results illustrated in Table 12, below. 61% of the OGMAs are located with existing protected values, 67% of the OGMAs are located in old forest types, with 94% of the OGMAs protecting a combination of mature and old forest types.

Table 12. Mamquam LU – OGMA target summary of BEC variants by CFLB

BEC Variant	Crown Forested Land Base (CFLB)			
	CFLB Area (ha)	Target Area (ha)	OGMA Area (ha)	Surplus Area (ha)
CWHdm	7,526.0	677.0	749.0	71.0
CWHds1	3,374.0	304.0	348.0	45.0
CWHms1	4,108.0	370.0	392.0	22.0
CWHvm2	10,453.0	1,359.0	1,376.0	17.0
MHmm2	3,042.0	578.0	631.0	53.0
MHmm1	9,246.0	1,757.0	1,792.0	35.0
CMAunp	105.0	0.0	0.0	0.0
MHmmp1	423.0	0.0	0.0	0.0
MHmmp2	42.0	0.0	0.0	0.0
TOTAL	**38,319.1**	**5,044.3**	**5,287.2**	**243.9**

4.3. Sloquet High Landscape Unit Description

The biodiversity value ranking process partitioned the original Sloquet LU and applied two BEOs across three LUs; a high BEO area in the centre (high), with intermediate BEO areas on either side (north and south). The BEO designations along with the BEC variants determine the percentage of the Crown Forested Land Base that will be designated as OGMA. Tables in each LU chapter outline the total amount of OGMA required and established in each BEO area and by each variant and corresponding Crown forest category.

The Sloquet high LU encompasses the area between Sloquet Creek and Fire Creek watersheds. As detailed in Table 13, the Sloquet High LU covers a total area of 12,778 ha; 7,061 ha is Crown forest, with the remaining 5,716 ha excluded due to non-forested, private land or Indian Reserve land.

Table 13. Sloquet high LU - Total land ownership summary

	Crown Forested Landbase (CFLB)				
Landscape Unit	**Contributing**	**Non-Contributing**	**Total**	**Excluded**	**Total Area**
Sloquet - High					
Crown – Active Timber Licence in TSA	0.0	0.0	0.0	183.4	183.4
Crown – Forest Management Unit	2,750.3	2,668.5	5,418.7	2,981.8	8,400.5
Crown – Provincial Parks	0.0	1,642.9	1,642.9	2,551.4	4,194.2
Indian Reserve	0.0	0.0	0.0	0.1	0.1
Private – Crown Grant	0.0	0.0	0.0	0.0	0.0
Sloquet - High Total	**2,750.3**	**4,311.3**	**7,061.6**	**5,716.7**	**12,778.2**

Table 14 summarizes the CFLB by BEC subzone, with a total forested area contributing to the old-growth targets of 7,061 ha. Further analysis in Appendix III shows the CFLB forest types are distributed into 59% old, 7% mature, 20% mid and 14% early age categories.

Table 14. Sloquet high LU - CFLB summary of BEC variants and Old-growth targets

	Crown Forested Land Base (CFLB)				
BEC Variant	**Contributing**	**Non-Contributing**	**Total Area**	**OGMA Target %**	**OGMA Target**
CWHds1	760.8	363.9	1,124.7	13%	146.2
CWHms1	1,901.5	1,530.3	3,431.8	13%	446.1
MHmm2	88.0	1,731.5	1,819.5	28%	509.5
CMAunp	0.0	632.7	632.7	0%	0.0
MHmmp2	0.0	52.9	52.9	0%	0.0
Total	**2,750.3**	**4,311.3**	**7,061.6**	**0%**	**1,101.8**

Old seral representation targets have been achieved through locating OGMAs in forests throughout the LU from the Crown forested land base in addition to forests in parks, as illustrated in Table 15. 83% of the OGMAs are in the old forest category. When the mature age class is included, the total amount of old forest types in OGMA increases to 88%, with 69% of the total OGMA amount located in existing protected values.

Table 15. Sloquet high LU – OGMA target summary of BEC variants by CFLB

	Crown Forested Land Base (CFLB)			
BEC Variant	CFLB Area (ha)	Target Area (ha)	OGMA Area (ha)	Surplus Area (ha)
CWHds1	1,125.0	146.0	185.0	39.0
CWHms1	3,432.0	446.0	481.0	34.0
MHmm2	1,819.0	509.0	587.0	77.0
CMAunp	633.0	0.0	0.0	0.0
MHmmp2	53.0	0.0	0.0	0.0
TOTAL	**7,061.6**	**1,101.8**	**1,252.1**	**150.3**

4.4. Sloquet North Landscape Unit

The Sloquet north LU includes all land between Fire Creek and Lillooet River, including Fire Lake, up to the height of land adjacent to the Tuwasus LU. Fire Lake is a fairly high-elevation lake that offers excellent recreational opportunities for boating and fishing in the summer months. As detailed in Table 16, the total area of 11,144 ha includes Crown forest of 7,017 ha and 4,126 ha of non-forested and non-Crown land.

Table 16. Sloquet north LU - Land ownership summary

	Crown Forested Landbase (CFLB)				
Landscape Unit	Contributing	Non-Contributing	Total	Excluded	Total Area
Sloquet North					
Crown – Forest Management Unit	2,808.7	3,348.2	6,156.9	4,075.4	10,232.3
Crown – Provincial Parks	0.0	860.0	860.1	48.2	908.3
Indian Reserve	0.0	0.0	0.0	3.2	3.2
Private – Crown Grant	0.0	0.0	0.0	0.9	0.9
Sloquet North Total	**2,809.0**	**4,208.9**	**7,017.9**	**4,126.8**	**11,144.7**

A summary of the CFLB is provided in Table 17, with a total forested area contributing to the old-growth target of 7,017 ha; further analysis provided in Appendix III for the Sloquet north LU shows that 55% of the total OGMA amount is old, 16% mature, 20% mid, and 9% early. The lower amounts of old age class distribution in the LU, combined with changes to CFLB designation in the CWHds1, made OGMA location in old-growth forest more challenging.

Table 17. Sloquet north LU - CFLB summary of BEC variants and Old-growth targets

	Crown Forested Land Base (CFLB)				
BEC Variant	Contributing	Non-Contributing	Total Area	OGMA Target %	OGMA Target
CWHds1	1,642.6	968.4	2,611.0	9%	235.0
CWHms1	970.5	1,633.6	2,604.1	9%	234.4
MHmm2	195.4	1,145.1	1,340.4	19%	254.7
CMAunp	0.0	435.8	435.8	0%	0.0
MHmmp2	0.2	25.3	25.5	0%	0.0
Total	**2,808.7**	**4,208.3**	**7,017.0**	**0%**	**724.1**

Table 18 provides a summary of OGMA for each BEC variant. The Sloquet North has a total of 21 OGMAs distributed in 798 hectares, with approximately 74% of the OGMAs located in areas designated for other values. Further analysis is provided in Appendix III provides a summary of the OGMA age classes, showing that 83% of the OGMAs are in old forest types; when combined with the mature category, 96% of OGMAs are in these two categories.

Table 18. Sloquet north LU – OGMA target summary of BEC variants by CFLB

	Crown Forested Land Base (CFLB)			
BEC Variant	CFLB Area (ha)	Target Area (ha)	OGMA Area (ha)	Surplus Area (ha)
CWHds1	2,611.0	235.0	273.0	38.0
CWHms1	2,604.0	234.0	261.0	26.0
MHmm2	1,340.0	255.0	265.0	10.0
CMAunp	436.0	0.0	0.0	0.0
MHmmp2	26.0	0.0	0.0	0.0
TOTAL	**7,017.0**	**724.1**	**798.4**	**74.3**

4.5. Sloquet South Landscape Unit

Sloquet South LU is comprised of land on the south bank of Sloquet Creek, down to the southern-most portion of Lillooet River to Harrison Lake, to the upper reaches of Sloquet Creek that extend into

Garibaldi Provincial Park. A small recreation site located at natural hot springs exists along the main channel of Sloquet Creek, approximately 7.3 km upstream from the creek's confluence with the Lillooet River. It is an attraction to a growing number of campers.

As illustrated in Table 19, the Sloquet south LU covers a total area of 14,904 ha, with total Crown forest amounting to 6,932 ha and non-forested (rock, alpine tundra, water) and non-Crown (private land etc.) of 7,971 ha excluded from OGMA contributions and calculations.

Table 19. Sloquet south LU - Total land ownership summary

	Crown Forested Landbase (CFLB)				
Landscape Unit	**Contributing**	**Non-Contributing**	**Total**	**Excluded**	**Total Area**
Sloquet - South					
Crown – Active Timber Licence in TSA	31.9	0.0	31.9	43.9	75.8
Crown – Forest Management Unit	2,784.4	3,599.2	6,383.6	6,584.7	12,968.3
Crown – Provincial Parks	0.0	517.0	517.0	1,118.1	1,635.1
Federal Reserve	0.0	0.3	0.3	38.2	38.4
Indian Reserve	0.0	0.0	0.0	169.5	169.5
Private – Crown Grant	0.0	0.0	0.0	17.2	17.2
Sloquet - South Total	**2,816.4**	**4,116.5**	**6,932.7**	**7,971.6**	**14,904.3**

The Sloquet south LU is within the Eastern Pacific Ranges Ecosection of the Pacific Ranges Ecoregion. Climate in the lower elevation areas along the main Lillooet River valley is moderately dry with warm summers and cold winters featuring moderate snowfall. In the lower-elevation variants, the CWHds1 and the CWHms1, the Sloquet south LU has sustained substantial levels of disturbance. Forested stands on lower elevation productive sites (typically on slopes with low to moderate gradient) have been disturbed by past timber harvesting, natural wildfire or other natural disturbance. Table 20 provides a summary of the CFLB by BEC variant.

Table 20. Sloquet south LU - CFLB summary of BEC variants and Old-growth targets

	Crown Forested Land Base (CFLB)				
BEC Variant	**Contributing**	**Non-Contributing**	**Total Area**	**OGMA Target %**	**OGMA Target**
CWHds1	834.6	230.8	1,065.4	9%	95.9
CWHms1	831.6	293.5	1,125.0	9%	101.3
CWHvm1	602.6	597.2	1,199.9	13%	156.0
CWHvm2	447.7	1,216.7	1,664.4	13%	216.4
MHmm2	96.7	563.3	660.0	19%	125.4
MHmm1	3.0	929.3	932.2	19%	177.1
CMAunp	0.0	223.8	223.8	0%	0.0

BEC Variant	Crown Forested Land Base (CFLB)			OGMA Target %	OGMA Target
	Contributing	Non-Contributing	Total Area		
MHmmp1	0.0	57.7	57.7	0%	0.0
MHmmp2	0.0	4.3	4.3	0%	0.0
Total	**2,816.3**	**4,116.5**	**6,932.7**	**0%**	**872.0**

As illustrated in Table 21, the Sloquet south LU has 63 OGMAs comprising over 1,083 hectares. 45% of the OGMAs are located on CFLB where designations have been identified for other values, such as ungulate winter range and Provincial Parks. Other non-contributing BEC variants are included for comparison to show that although some of the unproductive alpine areas are forested, they do not represent suitable candidates for OGMA designation.

The Crown Forested Land Base of the Sloquet south LU is comprised of 60% old-growth, 9% mature, 20% mid, and 11% early aged forests. In comparison, old-growth forests comprise 82% of the OGMAs; when combined with mature forests this amount increases to 89%. About 5% of OGMAs are in mid and 6% in early aged forests.

Table 21. Sloquet south LU – OGMA target summary of BEC variants by CFLB

BEC Variant	Crown Forested Land Base (CFLB)			
	CFLB Area (ha)	Target Area (ha)	OGMA Area (ha)	Surplus Area (ha)
CWHds1	1,065.0	96.0	105.3	9.5
CWHms1	1,125.0	101.0	108.9	7.7
CWHvm1	1,200.0	156.0	204.2	48.2
CWHvm2	1,664.0	216.0	274.8	58.4
MHmm2	660.0	125.0	159.9	34.5
MHmm1	932.0	177.0	230.0	52.9
CMAunp	224.0	0.0	0.0	0.0
MHmmp1	58.0	0.0	0.0	0.0
MHmmp2	4.0	0.0	0.0	0.0
TOTAL	**6,932.7**	**872.0**	**1,083.2**	**211.2**

4.6. Tuwasus Landscape Unit

The Tuwasus LU encompasses the entire Tuwasus Creek and Snowcap Creek watersheds, which are situated approximately 25 km Northwest of Harrison Lake, and are both tributaries to the Lillooet River. The Tuwasus LU is located between the Sloquet north LU and the Billygoat LU, which already contains legally established OGMAs.

The Tuwasus LU is within the Eastern Pacific Ranges Ecosection of the Pacific Ranges Ecoregion. Climatic conditions vary most prominently by elevation. Climate in the Landscape Unit is transitional between coastal and interior. Lower elevation areas along the Lillooet River Valley contains the Interior Douglas-fir *warm wet* (IDFww) Biogeoclimatic (BEC) Subzone variant. The landscape unit also contains Coastal Western Hemlock subzones. In total the Tuwasus LU has five forested BEC subzones or variants, which include three natural disturbance types (NDT); The Mountain Hemlock variant *–Leeward Moist Maritime* (MHmm2) lies within NDT 1. The two Coastal Western Hemlock variants *–Southern Dry Submaritime* (CWHds1) and *Southern Moist Submaritime* (CWHms1) and the ESSFmw are within NDT2. The IDFww falls within NDT4. The landscape unit also has substantial amounts of high elevation, non-forested area in Alpine Tundra, which is NDT5.

Table 22 provides a description of the total LU area. The gross area of the Tuwasus Landscape Unit is 43,980 ha, with only 14,989 ha of that amount classed as Crown Forested Land Base. The remaining 28,991 ha are non-forested or non-Crown (rock, alpine tundra, water, private land etc.) and have been excluded from OGMA contributions and calculations.

Table 22. Tuwasus LU - Total land ownership summary

	Crown Forested Landbase (CFLB)				
Landscape Unit	**Contributing**	**Non-Contributing**	**Total**	**Excluded**	**Total Area**
Tuwasus					
Crown – Active Timber Licence in TSA	37.7	12.1	49.8	32.5	82.3
Crown – Christmas Tree Permit	0.0	0.0	0.0	0.6	0.6
Crown – Forest Management Unit	1,501.9	4,305.4	5,807.3	4,029.4	9,836.7
Crown – Provincial Parks	0.0	9,131.7	9,131.7	24,752.4	33,884.1
Federal Reserve	0.0	0.0	0.0	7.5	7.5
Indian Reserve	0.0	0.0	0.0	168.7	168.8
Private – Crown Grant	0.0	0.0	0.0	0.1	0.1
Tuwasus Total	**1,539.7**	**13,449.1**	**14,988.8**	**28,991.2**	**43,980.0**

Table 23 provides an area breakdown of each BEC variant, for a total OGMA target of 1,722 ha.

Table 23. Tuwasus LU - CFLB summary of BEC variants and Old-growth targets

	Crown Forested Land Base (CFLB)				
BEC Variant	**Contributing Area (ha)**	**Non-Contributing Area (ha)**	**Total Area (Ha)**	**OGMA Target %**	**OGMA Target (Ha)**
CWHds1	893.1	2,206.9	3,099.9	9%	279.0
CWHms1	505.9	6,054.4	6,560.3	9%	590.4
MHmm2	81.9	4,320.8	4,402.7	19%	836.5

ESSFmw	0.0	97.4	97.4	9%	8.8
IDFww	58.9	4.2	63.0	13%	8.2
CMAunp	0.0	738.8	738.8	0%	0.0
MHmmp2	0.0	26.7	26.7	0%	0.0
Total	**1,539.7**	**13,449.1**	**14,988.8**	**0%**	**1,722.9**

Table 24 provides an area breakdown of the OGMAs within each BEC variant. Further analysis may be found in Appendix III, which summarizes each OGMA and provides age class distributions. Within the lower elevation variants, IDFww and CWHds1, the Tuwasus LU has sustained moderate levels of disturbance.

Much of the terrain is very rocky and timber harvesting access is difficult. Forested stands on lower elevation productive sites that have easier access have been disturbed by past timber harvesting, natural wildfire or other natural disturbance. Finding quality candidate old-growth areas proved more difficult, with only 66% of the LU's CFLB in the old category. 76% of the OGMAs are in the old category, however when combined with the mature category this amount increases to 99%. In addition, more than 89% of the OGMAs are located in other value areas throughout the CFLB that already have some form of protection, such as wildlife habitat areas or Provincial Park.

Table 24. Tuwasus LU – OGMA target summary of BEC variants by CFLB

	Crown Forested Land Base (CFLB)			
BEC Variant	**CFLB Area (ha)**	**Target Area (ha)**	**OGMA Area (ha)**	**Surplus Area (ha)**
CWHds1	3,100.0	279.0	303.0	24.0
CWHms1	6,560.0	590.0	624.0	34.0
MHmm2	4,403.0	837.0	866.0	30.0
ESSFmw	97.0	9.0	22.0	13.0
IDFww	63.0	8.0	12.0	4.0
CMAunp	739.0	0.0	0.0	0.0
MHmmp2	27.0	0.0	0.0	0.0
Total	**14,988.8**	**1,722.9**	**1,827.9**	**105.0**

5. Appendix I – First Nations and Public Review

As directed by the Land Use Objectives Regulation, First Nations and the general public are notified of the draft OGMAs and comments are requested during a 60-day review period. Comments received during this period (May 22 to July 25) are summarized below.

Letters informing First Nations of the project were mailed January 29 2014. Letters informing First Nations of the 60-day review were mailed May 14 2014. The following First Nations were notified: In-SHUCK-ch, Kwantlen, Lil'wat, NQuatqua, Seabird Island, Sechelt, Skawahlook, Squamish, Sto:lo, Sts ailes, Tsleil-Waututh, Xa xtsa.

Notice of the public review period was published in the BC Gazette May 22 2014 and advertised in the following media publications:

Date	**Community**	**Publication**
May 22, 2014	Squamish	The Chief
May 22, 2014	Sea to Sky Corridor (Whistler, Pemberton, Squamish)	The Pique
May 20, 2014	Sea to Sky Corridor (Whistler, Pemberton, Squamish)	Whistler Question

Table 25. Comments from the First Nations and Public Review.

No.	Stakeholder	Comment (summarized)	Response
1	Tsleil-Waututh First Nation	July 7 letter. Supports the proposed OGMA locations. Expects meaningful consultation & compliance with Stewardship Policy.	Responded by email thanking Tsleil-Waututh for their letter.
2	Lil'wat First Nation	July 9 letter. Have reviewed OGMAs and have no concerns. Requested additional priority for protection on OGMAs overlapping identified traditional use and cultural areas.	Responded by email, recommended editing the Ministerial Order to exempt OGMAs that overlap with identified cultural areas from incursion provisions. This was acceptable to Lil'wat First Nation.
3	General Public	Two members of the public inquired about the OGMAs in person at the Sea to Sky District Office.	Discussed the process and reviewed map of the Mamquam LU. No written comments were received.
4	General Public/ Squamish Nation member	July 24 letter. Inquiry regarding Squamish Nation's review of archaeological sites.	Responded by email, explained process and referred further questions to Squamish Nation representative.
5	Squamish Nation forestry representative	Provided mapped operability information showing potential interest areas for harvesting.	Made adjustments to five OGMAs totalling less than 20 hectares.

6. Appendix II – Acronyms/Glossary

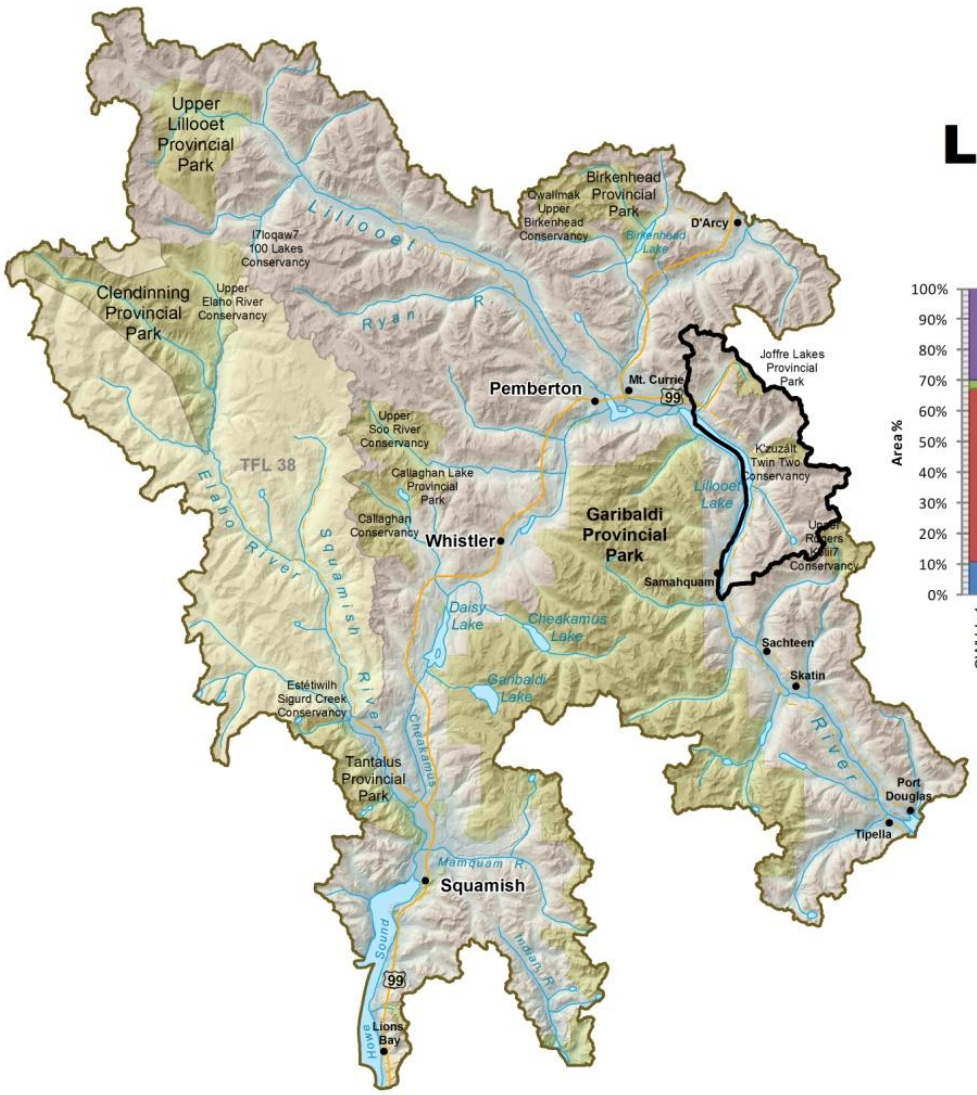
AAC	Allowable Annual Cut
BEC	Biogeoclimatic Ecosystem Classification
BEO	Biodiversity Emphasis Option
CFLB	Crown Forested Land Base
FDP	Forest Development Plan
FPC	Forest Practices Code of British Columbia Act
FRPA	Forest and Range Practices Act
ILMB	Integrated Land Management Bureau
IWMS	Identified Wildlife Management Strategy
LU	Landscape Unit
LUOR	Land Use Objectives Regulation
LUPG	Landscape Unit Planning Guide
MOE	Ministry of Environment
NDT	Natural Disturbance Type
FLNR	Ministry of Forests, Lands and Natural Resource Operations
NDT	Natural Disturbance Type, see Biodiversity Guidebook
OGMA	Old-Growth Management Area
RLUP	Regional Land Use Plan
S2S LRMP	Sea-to-Sky Land and Resource Management Plan
SRMP	Sustainable Resource Management Plan
TEM	Terrestrial Ecosystem Mapping
THLB	Timber Harvesting Land Base
UWR	Ungulate Winter Range
WHA	Wildlife Habitat Area

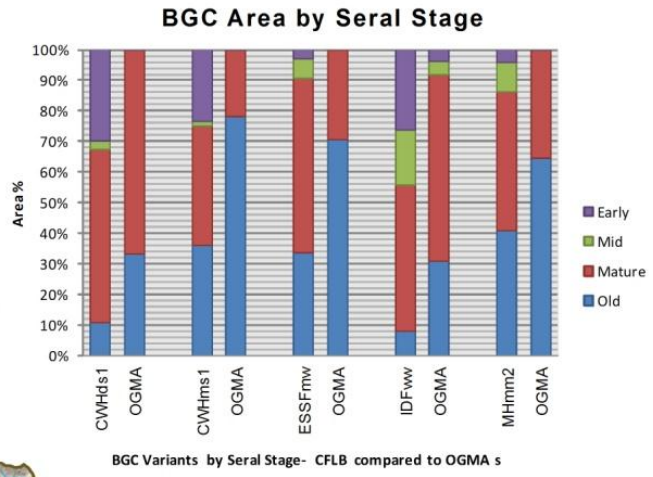
7. Appendix III – Landscape Unit OGMA Summary

This section provides a key map for each Landscape Unit (LU), with tabular and graphical summaries for Old-Growth Management Areas (OGMAs) in each LU. Detailed maps of OGMA locations are attached to the Ministerial Order as Schedule A, and are also available as shape files for use in GIS software in addition to the Google Earth application.

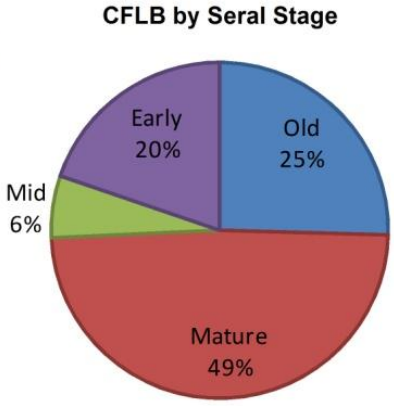
The following tables for each LU provide additional information to summarize the area where other legally established protected values (e.g. WHAs, parks) are located within each OGMA. These are identified in each table summary as 'constraints' because they constrain forestry activities such as logging.

Lizzie Landscape Unit





BGC Variants by Seral Stage- CFLB compared to OGMA s



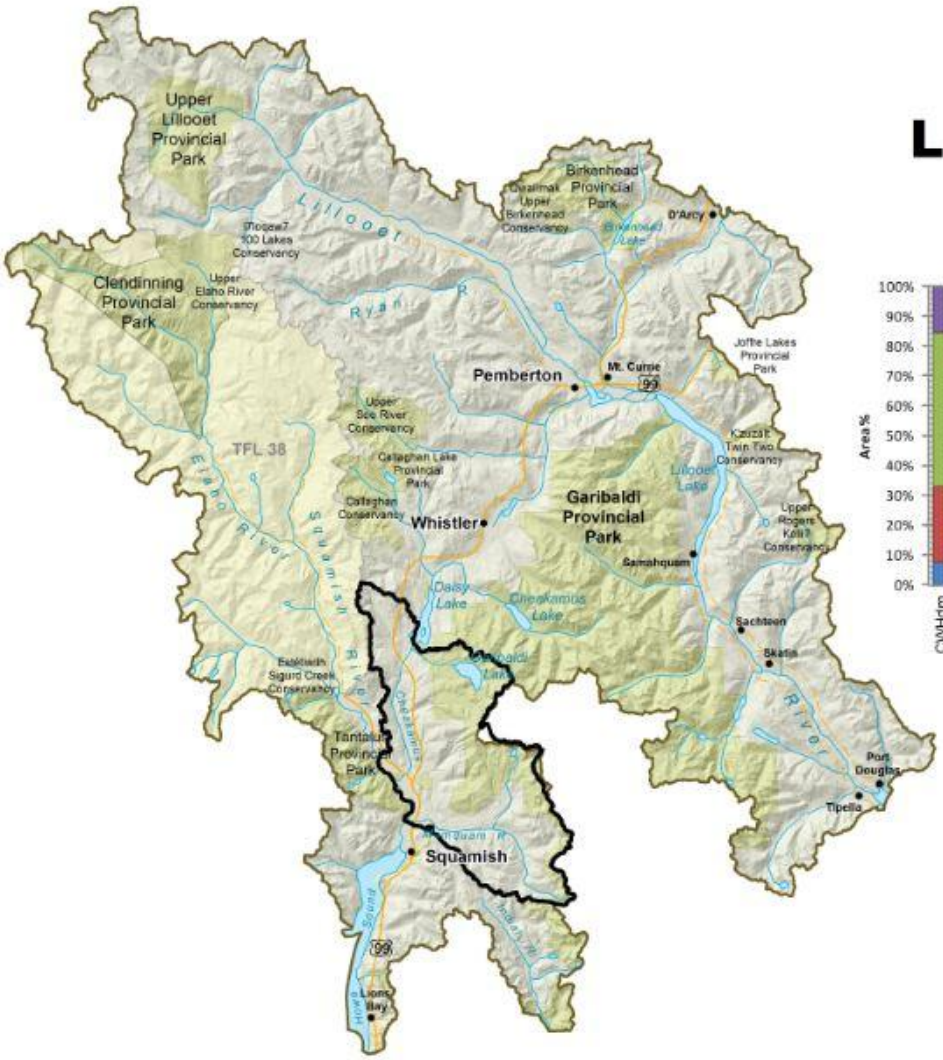
BEC Variant	CFLB HA	Target	OGMA	Diff
CWHds1	4627	416	466	49
CWHms1	4329	390	399	9
MHmm2	2554	485	491	6
ESSFmw	2238	201	225	24
IDFww	2081	271	287	16
CMAunp	5	0		0
MHmmp2	321	0		0
ESSFmwp	114	0		0
TOTAL	**16268**	**1763**	**1868**	**105**

OGMA		OGMA	No OGMA				No OGMA	
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total	Grand Total
396	70	466	1471	799	1891	0	4161	4627
261	137	399	518	1558	1806	48	3930	4329
170	321	491	521	1188	300	53	2063	2554
14	212	225	712	979	321	0	2012	2238
287	0	287	1226	207	360	0	1794	2081
0	0	0	2	0	0	3	5	5
0	0	0	177	68	0	76	321	321
0	0	0	101	13	0	0	114	114
1128	**740**	**1868**	**4728**	**4812**	**4679**	**180**	**14400**	**16268**

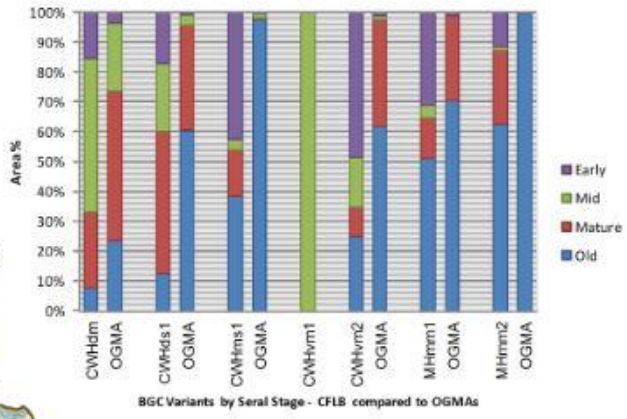
	BEC Variant (Ha)						Forest Age Class (Ha)									
Lizzie	CWHds1	CWHms1	ESSFmw	IDFww	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_321_001	117	13	0	15	0	144	0	12	132	0	**0%**	WHA	144	100%	0	144
SRY_321_002	67	22	0	171	10	270	0	0	119	151	**56%**	WHA	253	94%	17	270
SRY_321_003	0	0	0	39	0	39	11	0	28	0	**0%**	WHA	39	100%	0	39
SRY_321_004	0	0	0	36	0	36	0	0	0	36	**100%**	WHA	36	100%	0	36
SRY_321_005	0	0	0	13	0	13	0	0	13	0	**0%**	WHA	13	100%	0	13
SRY_321_006	24	3	0	13	0	41	1	1	39	0	**0%**	UWR	41	100%	0	41
SRY_321_007	73	0	0	0	0	73	0	0	66	7	**10%**	WHA	73	100%	0	73
SRY_321_008	18	6	0	0	0	24	0	0	2	21	**91%**		0	0%	24	24
SRY_321_010	0	13	0	0	0	13	0	0	0	13	**100%**		0	0%	13	13
SRY_321_011	52	1	0	0	0	53	0	0	21	31	**59%**		0	0%	53	53
SRY_321_012	51	8	0	0	0	60	0	0	60	0	**0%**	WHA	60	100%	0	60
SRY_321_013	0	10	0	0	0	10	0	0	10	0	**0%**	WHA	10	100%	0	10
SRY_321_014	0	19	0	0	0	19	0	0	3	16	**82%**		0	0%	19	19
SRY_321_015	0	31	0	0	0	31	0	0	19	12	**39%**		0	0%	31	31
SRY_321_016	0	10	0	0	0	10	0	0	10	0	**0%**	WHA UWR	10	100%	0	10
SRY_321_017	0	17	0	0	0	17	0	0	17	0	**0%**	WHA UWR	17	100%	0	17
SRY_321_018	0	32	0	0	0	32	0	0	0	32	**100%**		0	0%	32	32
SRY_321_020	0	13	0	0	0	13	0	0	0	13	**100%**		0	0%	13	13
SRY_321_021	0	0	0	0	39	39	0	0	5	34	**88%**	PARK-CONS	39	100%	0	39
SRY_321_022	0	2	67	0	0	69	0	0	38	31	**45%**		0	0%	69	69
SRY_321_023	0	2	54	0	0	56	0	0	0	56	**100%**		0	0%	56	56
SRY_321_024	0	2	0	0	77	79	0	0	38	41	**52%**		0	0%	79	79
SRY_321_025	0	59	0	0	9	68	0	0	0	68	**100%**	PARK-CONS	61	90%	7	68
SRY_321_026	0	0	0	0	18	18	0	0	18	0	**0%**		0	0%	18	18
SRY_321_027	0	0	0	0	11	11	0	0	0	11	**100%**	PARK-CONS	11	100%	0	11
SRY_321_028	0	0	0	0	41	41	0	0	18	23	**56%**		0	0%	41	41
SRY_321_029	0	0	0	0	52	52	0	0	51	1	**2%**		0	0%	52	52

	BEC Variant (Ha)						Forest Age Class (Ha)									
Lizzie	**CWHds1**	**CWHms1**	**ESSFmw**	**IDFww**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**OGMA Area (Ha)**
SRY_321_030	0	0	59	0	0	59	0	0	0	59	**100%**	PARK-CONS	7	12%	52	59
SRY_321_031	0	0	22	0	0	22	0	0	18	4	**18%**	PARK-CONS	1	7%	20	22
SRY_321_032	0	0	24	0	0	24	0	0	13	11	**46%**	UWR	5	21%	19	24
SRY_321_033	18	0	0	0	0	18	0	0	18	0	**0%**	WHA	18	100%	0	18
SRY_321_034	0	0	0	0	22	22	0	0	15	7	**32%**		0	0%	22	22
SRY_321_035	0	0	0	0	52	52	0	0	25	27	**53%**	PARK-CONS	20	39%	32	52
SRY_321_036	0	0	0	0	18	18	0	0	0	18	**100%**		0	0%	18	18
SRY_321_037	0	0	0	0	12	12	0	0	0	12	**100%**		0	0%	12	12
SRY_321_038	0	10	0	0	0	10	0	0	0	10	**100%**	LRMP	7	73%	3	10
SRY_321_039	46	127	0	0	91	264	0	0	11	253	**96%**	PARK-CONS	264	100%	0	264
SRY_321_040	0	0	0	0	39	39	0	0	6	34	**85%**		0	0%	39	39
Lizzie Total	**466**	**399**	**226**	**287**	**491**	**1868**	**12**	**13**	**811**	**1032**	**55%**	**0**	**1128**	**60%**	**740**	**1868**

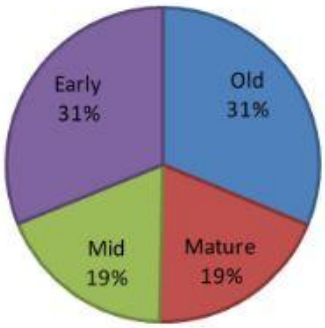
Mamquam Landscape Unit



BGC Area by Seral Stage



CFLB by Seral Stage



BEC Variant	CFLB HA	Target	OGMA	Diff
CWHdm	7526	677	749	71
CWHds1	3374	304	348	45
CWHms1	4108	370	392	22
CWHvm1	0	0		0
CWHvm2	10453	1359	1376	17
MHmm2	3042	578	631	53
MHmm1	9246	1757	1792	35
CMAunp	105	0		0
MHmmp2	42	0	0	0
MHmmp1	423	0		0
TOTAL	**38319**	**5044**	**5287**	**243**

OGMA		OGMA	No OGMA				No OGMA
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total
263	485	749	58	1779	4591	350	6778
133	215	348	241	1275	1474	35	3026
277	115	392	229	1021	2142	324	3717
0	0	0	0	0	0	0	0
909	467	1376	586	919	7113	459	9077
352	279	631	115	920	459	918	2411
1288	503	1792	350	2263	3645	1195	7454
0	0	0	0	0	1	103	105
0	0	0	0	41	0	1	42
0	0	0	40	325	59	0	423
3224	**2063**	**5287**	**1618**	**8543**	**19485**	**3386**	**33032**

	BEC Variant (Ha)							Forest Age Class (Ha)									
Mamquam	CWHdm	CWHds1	CWHms1	CWHvm2	MHmm1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_309_001	0	0	0	163	155	0	319	1	1	127	189	59%	PARK-CONS	314	98%	5	319
SRY_309_002	0	0	0	47	46	0	93	0	0	70	23	25%	PARK-CONS	93	100%	0	93
SRY_309_003	0	0	0	0	9	0	9	0	0	0	9	100%		0	0%	9	9
SRY_309_004	0	0	0	0	68	0	69	0	0	0	68	99%	WHA	22	32%	47	69
SRY_309_005	0	0	0	0	10	0	10	0	0	0	10	100%		0	0%	10	10
SRY_309_006	0	0	0	49	0	0	49	2	0	0	47	96%	LRMP	8	17%	40	49
SRY_309_007	0	0	0	0	15	0	15	1	0	0	14	93%		0	0%	15	15
SRY_309_008	0	0	0	0	4	0	4	0	0	0	4	100%	WHA	1	25%	3	4
SRY_309_009	0	0	0	0	12	0	12	0	0	0	12	100%	UWR	11	89%	1	12
SRY_309_010	0	0	0	0	38	0	38	0	0	0	38	100%	PARK-CONS	38	100%	0	38
SRY_309_011	0	0	0	0	44	0	44	0	0	0	44	100%		0	0%	44	44
SRY_309_012	0	0	0	0	38	0	38	0	0	0	37	97%	UWR	38	100%	0	38
SRY_309_013	0	0	0	3	45	0	48	0	0	18	30	63%	UWR	48	100%	0	48
SRY_309_014	0	0	0	2	25	0	26	1	0	0	25	96%		0	0%	26	26
SRY_309_015	0	0	0	0	5	0	5	0	0	0	5	100%		0	0%	5	5
SRY_309_016	0	0	0	21	0	0	21	0	1	0	21	100%		0	0%	21	21
SRY_309_017	16	0	0	0	0	0	16	2	14	0	0	0%		0	0%	16	16
SRY_309_018	29	0	0	0	0	0	29	0	4	25	0	0%		0	0%	29	29
SRY_309_019	89	0	0	0	0	0	89	1	1	88	0	0%	PARK-CONS	80	90%	9	89
SRY_309_020	0	0	0	0	29	0	29	1	0	5	23	79%		0	0%	29	29
SRY_309_021	0	0	0	67	50	0	118	0	0	100	18	15%	PARK-CONS	100	85%	18	118
SRY_309_022	15	0	0	0	0	0	15	0	0	15	0	0%	PARK-CONS	15	100%	0	15
SRY_309_023	22	0	0	0	0	0	22	0	2	20	0	0%		0	0%	22	22
SRY_309_024	7	0	0	0	0	0	7	0	0	0	7	100%		0	0%	7	7
SRY_309_025	0	0	0	39	0	0	39	2	0	10	27	69%		0	0%	39	39

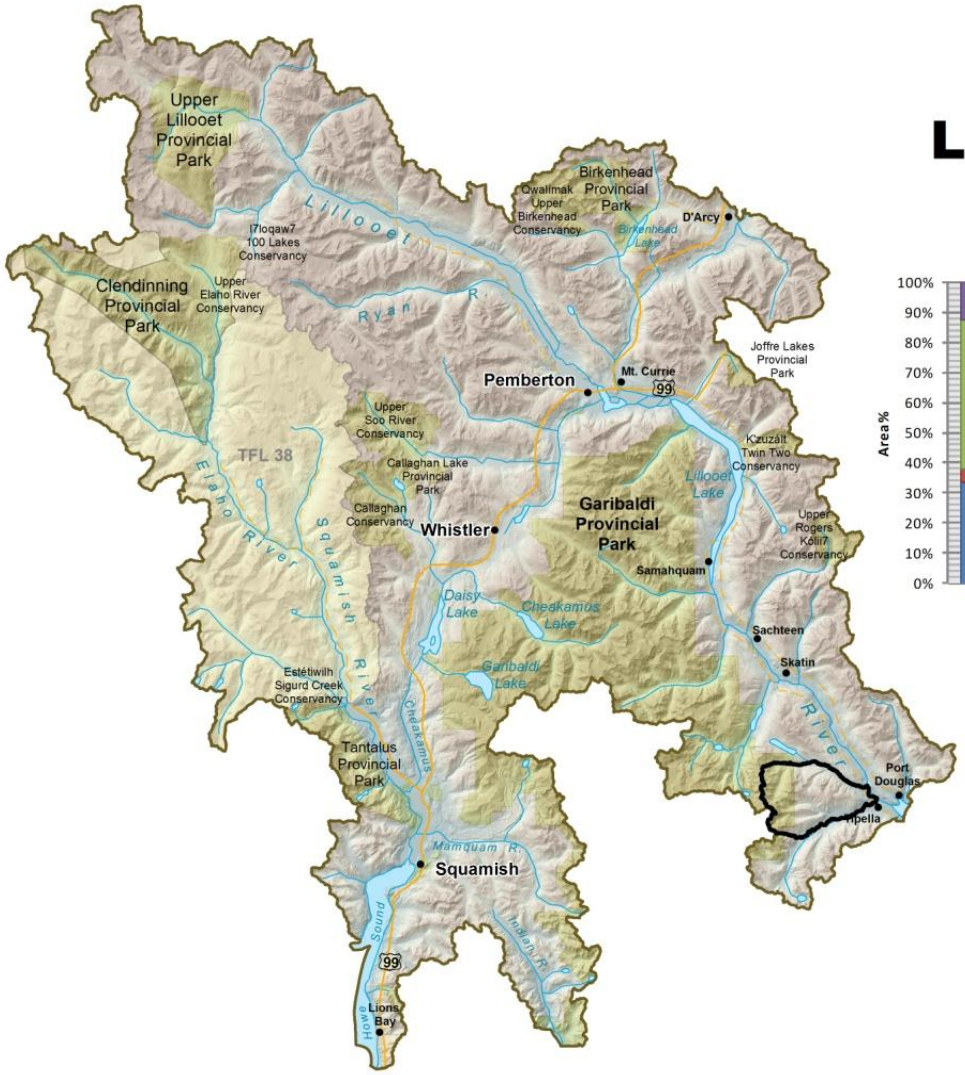
	BEC Variant (Ha)							Forest Age Class (Ha)									
Mamquam	CWHdm	CWHds1	CWHms1	CWHvm2	MHmm1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_309_026	0	0	0	0	17	0	17	0	0	0	17	100%	PARK-CONS	14	86%	2	17
SRY_309_027	0	0	0	14	0	0	14	0	0	0	14	100%		0	0%	14	14
SRY_309_028	0	0	0	12	13	0	25	1	0	0	24	96%		0	0%	25	25
SRY_309_029	0	0	0	57	0	0	57	2	0	0	56	98%		0	0%	57	57
SRY_309_030	0	0	0	31	0	0	31	0	0	0	30	97%		0	0%	31	31
SRY_309_031	0	0	0	0	18	0	18	0	0	0	17	94%		0	0%	18	18
SRY_309_032	0	0	0	0	23	0	23	0	0	0	23	100%		0	0%	23	23
SRY_309_033	49	0	0	0	0	0	49	0	49	0	0	0%	PARK-CONS	49	100%	0	49
SRY_309_034	7	0	0	0	0	0	7	0	0	7	0	0%		0	0%	7	7
SRY_309_035	13	7	0	0	0	0	20	0	1	19	0	0%	LRMP	2	11%	17	20
SRY_309_036	0	0	0	39	2	0	41	1	0	0	40	98%		0	0%	41	41
SRY_309_037	0	0	0	107	128	0	235	6	0	138	91	39%	PARK-CONS	235	100%	0	235
SRY_309_038	0	0	0	27	9	0	36	0	0	0	36	100%	UWR PARK-CONS	33	94%	2	36
SRY_309_039	49	0	0	0	0	0	49	0	22	27	0	0%	PARK-CONS	36	72%	14	49
SRY_309_040	0	0	0	3	124	0	127	0	0	114	13	10%	PARK-CONS	121	95%	6	127
SRY_309_041	35	0	0	0	0	0	35	0	1	8	26	74%		0	0%	35	35
SRY_309_042	28	0	0	0	0	0	28	0	2	26	0	0%		0	0%	28	28
SRY_309_043	10	0	0	0	0	0	10	0	10	0	0	0%		0	0%	10	10
SRY_309_044	0	0	0	0	14	0	14	0	1	0	13	93%	UWR	14	99%	0	14
SRY_309_045	0	0	0	7	0	0	7	0	0	0	7	100%	WHA	7	100%	0	7
SRY_309_046	0	0	0	0	6	0	6	0	0	0	6	100%		0	0%	6	6
SRY_309_047	0	0	0	0	20	0	20	0	0	0	20	100%	WHA PARK-CONS	5	27%	15	20
SRY_309_048	29	0	0	0	0	0	29	0	0	21	8	28%		0	0%	29	29
SRY_309_049	17	0	0	0	0	0	17	0	1	16	0	0%		0	0%	17	17
SRY_309_050	0	0	0	13	0	0	13	0	0	0	12	92%		0	0%	13	13
SRY_309_051	0	0	0	0	22	0	22	0	0	0	22	100%	UWR	22	100%	0	22
SRY_309_052	29	0	0	106	82	0	217	3	1	7	206	95%	WHA UWR	217	100%	0	217

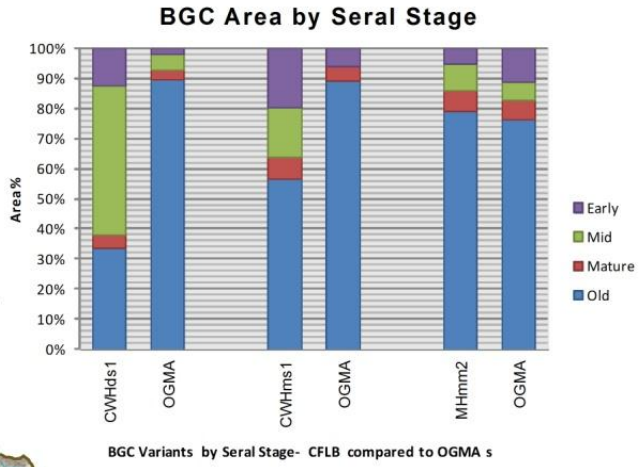
	BEC Variant (Ha)							Forest Age Class (Ha)									
Mamquam	CWHdm	CWHds1	CWHms1	CWHvm2	MHmm1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_309_053	21	0	0	0	0	0	21	1	18	2	0	0%		0	0%	21	21
SRY_309_054	0	0	0	0	11	0	11	0	0	0	10	91%		0	0%	11	11
SRY_309_055	64	0	0	0	0	0	64	14	35	0	15	23%	LRMP	51	80%	13	64
SRY_309_056	0	0	0	8	0	0	8	0	0	0	8	100%		0	0%	8	8
SRY_309_057	0	0	0	3	17	0	20	3	0	0	17	85%		0	0%	20	20
SRY_309_058	0	0	0	0	12	0	12	0	0	0	12	100%		0	0%	12	12
SRY_309_059	0	0	0	0	7	0	7	0	0	0	7	100%		0	0%	7	7
SRY_309_060	0	0	0	0	18	0	18	0	0	0	18	100%	PARK-CONS	18	100%	0	18
SRY_309_061	0	0	0	0	7	0	7	0	0	0	6	86%		0	0%	7	7
SRY_309_062	0	0	0	17	87	0	105	0	0	0	105	100%	PARK-CONS	104	99%	1	105
SRY_309_063	0	0	0	0	7	0	7	0	0	0	7	100%		0	0%	7	7
SRY_309_064	0	0	0	0	6	0	6	0	0	0	5	83%		0	0%	6	6
SRY_309_065	0	0	0	4	0	0	4	0	0	4	0	0%		0	0%	4	4
SRY_309_066	0	0	0	0	58	0	58	0	0	0	58	100%	UWR PARK-CONS	58	100%	0	58
SRY_309_067	0	0	0	68	16	0	83	0	0	58	25	30%	PARK-CONS	57	68%	26	83
SRY_309_068	0	0	0	0	104	0	104	0	1	1	102	98%	PARK-CONS	16	16%	87	104
SRY_309_069	4	0	0	3	0	0	7	0	0	0	7	100%		0	0%	7	7
SRY_309_070	0	0	0	0	26	0	26	0	0	0	26	100%		0	0%	26	26
SRY_309_071	0	0	0	10	8	0	18	0	0	0	18	100%		0	0%	18	18
SRY_309_072	0	0	0	5	0	0	5	0	0	0	5	100%		0	0%	5	5
SRY_309_073	0	0	0	12	0	0	12	0	0	0	12	100%		0	0%	12	12
SRY_309_074	0	0	0	0	17	0	17	0	0	0	17	100%	UWR PARK-CONS	17	100%	0	17
SRY_309_075	11	0	0	14	0	0	26	3	0	0	22	85%		0	0%	26	26
SRY_309_076	0	0	0	20	14	0	34	1	0	0	33	97%		0	0%	34	34
SRY_309_077	0	0	0	27	0	0	27	0	0	0	26	96%	WHA LRMP	25	92%	2	27
SRY_309_078	0	0	0	1	2	0	3	0	0	0	3	100%		0	0%	3	3
SRY_309_079	0	0	0	0	15	0	15	0	0	0	15	100%		0	0%	15	15

	BEC Variant (Ha)							Forest Age Class (Ha)									
Mamquam	CWHdm	CWHds1	CWHms1	CWHvm2	MHmm1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_309_080	3	0	0	14	0	0	16	0	16	0	0	0%	UWR	16	100%	0	16
SRY_309_081	45	0	0	0	0	0	45	0	3	41	0	0%		0	0%	45	45
SRY_309_082	0	0	0	0	46	0	46	0	0	46	0	0%	PARK-CONS	46	100%	0	46
SRY_309_083	0	0	0	11	0	0	11	0	0	0	10	91%		0	0%	11	11
SRY_309_084	0	0	0	286	144	0	430	0	0	311	119	28%	PARK-CONS	430	100%	0	430
SRY_309_085	0	0	0	0	21	0	21	0	0	0	21	100%	PARK-CONS	21	100%	0	21
SRY_309_086	0	0	0	9	1	0	10	0	0	0	9	90%		0	0%	10	10
SRY_309_087	0	0	0	9	0	0	9	0	0	0	8	89%		0	0%	9	9
SRY_309_088	0	0	0	0	8	0	8	0	0	0	8	100%		0	0%	8	8
SRY_309_089	0	0	0	16	14	0	30	0	0	0	29	97%	WHA	24	81%	6	30
SRY_309_090	0	0	0	9	0	0	9	0	0	0	8	89%		0	0%	9	9
SRY_309_091	0	0	0	9	0	0	9	1	0	0	8	89%		0	0%	9	9
SRY_309_092	0	0	0	12	0	0	12	0	0	0	11	92%		0	0%	12	12
SRY_309_093	0	0	0	4	32	0	36	0	0	0	36	100%	UWR PARK-CONS	36	100%	0	36
SRY_309_094	52	0	0	0	0	0	52	2	3	47	0	0%		0	0%	52	52
SRY_309_095	24	0	0	0	0	0	24	0	2	5	17	71%		0	0%	24	24
SRY_309_096	0	0	0	0	0	27	27	0	0	0	27	100%		0	0%	27	27
SRY_309_097	0	0	4	0	0	21	25	0	0	0	25	100%		0	0%	25	25
SRY_309_098	0	0	21	0	0	83	104	0	0	0	104	100%		0	0%	104	104
SRY_309_099	0	4	0	0	0	0	4	0	0	0	4	100%		0	0%	4	4
SRY_309_100	0	4	0	0	0	0	4	0	0	1	2	50%		0	0%	4	4
SRY_309_101	0	0	41	0	0	0	41	0	0	0	41	100%	UWR	40	98%	1	41
SRY_309_102	0	41	0	0	0	0	41	0	12	29	0	0%	LRMP	41	100%	0	41
SRY_309_103	0	0	26	0	0	10	35	0	6	1	28	80%	UWR	2	6%	33	35
SRY_309_104	0	59	0	0	0	0	59	0	0	34	24	41%		0	0%	59	59
SRY_309_105	0	26	1	0	0	0	27	0	0	27	0	0%		0	0%	27	27
SRY_309_106	0	22	0	0	0	0	22	1	0	9	12	55%		0	0%	22	22

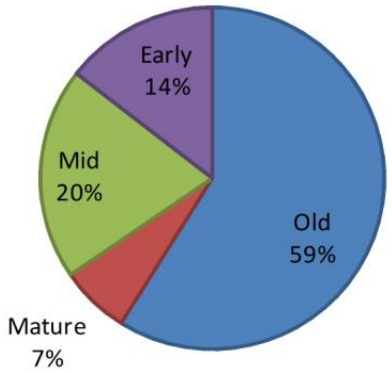
	BEC Variant (Ha)							Forest Age Class (Ha)						Constrained	Constrained	Crown Forest	OGMA Area
Mamquam	CWHdm	CWHds1	CWHms1	CWHvm2	MHmm1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	(Ha)	Area (%)	(Ha)	(Ha)
SRY_309_107	0	3	0	0	0	0	3	0	0	0	3	100%		0	0%	3	3
SRY_309_108	0	9	0	0	0	0	9	0	0	9	0	0%		0	0%	9	9
SRY_309_109	0	0	11	0	0	4	15	0	0	0	15	100%		0	0%	15	15
SRY_309_110	0	22	0	0	0	0	22	0	0	0	22	100%	LRMP	21	97%	1	22
SRY_309_111	0	3	0	0	0	0	3	0	0	0	3	100%		0	0%	3	3
SRY_309_112	0	57	0	0	0	0	57	0	0	0	57	100%	LRMP	35	62%	22	57
SRY_309_113	14	0	0	0	0	0	14	0	0	10	3	21%		0	0%	14	14
SRY_309_114	0	0	7	0	0	0	7	0	0	0	7	100%		0	0%	7	7
SRY_309_115	66	0	0	0	0	0	66	0	0	0	66	100%		0	0%	66	66
SRY_309_116	0	0	251	0	0	409	660	0	0	0	660	100%	UWR PARK-CONS	529	80%	131	660
SRY_309_117	0	13	0	0	0	0	13	0	0	0	13	100%		0	0%	13	13
SRY_309_118	0	12	0	0	0	0	12	0	0	0	12	100%		0	0%	12	12
SRY_309_119	0	0	0	0	0	50	50	0	0	0	50	100%	PARK-CONS	42	84%	8	50
SRY_309_120	0	33	17	0	0	0	50	0	0	0	50	100%	PARK-CONS	50	100%	0	50
SRY_309_121	0	0	0	0	0	6	6	0	0	0	6	100%		0	0%	6	6
SRY_309_122	0	0	0	0	0	21	21	0	0	0	21	100%		0	0%	21	21
SRY_309_123	0	0	0	0	22	0	22	0	0	0	22	100%	WHA	22	100%	0	22
SRY_309_124	0	1	3	0	0	0	4	0	0	0	4	100%		0	0%	4	4
SRY_309_125	0	33	0	0	0	0	33	2	0	7	24	73%		0	0%	33	33
SRY_309_126	0	0	11	0	0	0	11	1	0	0	10	91%		0	0%	11	11
Mamquam TOTAL	**749**	**349**	**392**	**1376**	**1792**	**631**	**5287**	**60**	**209**	**1504**	**3514**	**66%**		**3224**	**61%**	**2063**	**5287**

Sloquet High Landscape Unit





BGC Variants by Seral Stage- CFLB compared to OGMA s



BEC Variant	CFLB HA	Target	OGMA	Diff
CWHds1	1125	146	185	39
CWHms1	3432	446	481	34
MHmm2	1819	509	587	77
CMAunp	633	0		0
MHmmp2	53	0		0
TOTAL	**7062**	**1102**	**1252**	**150**

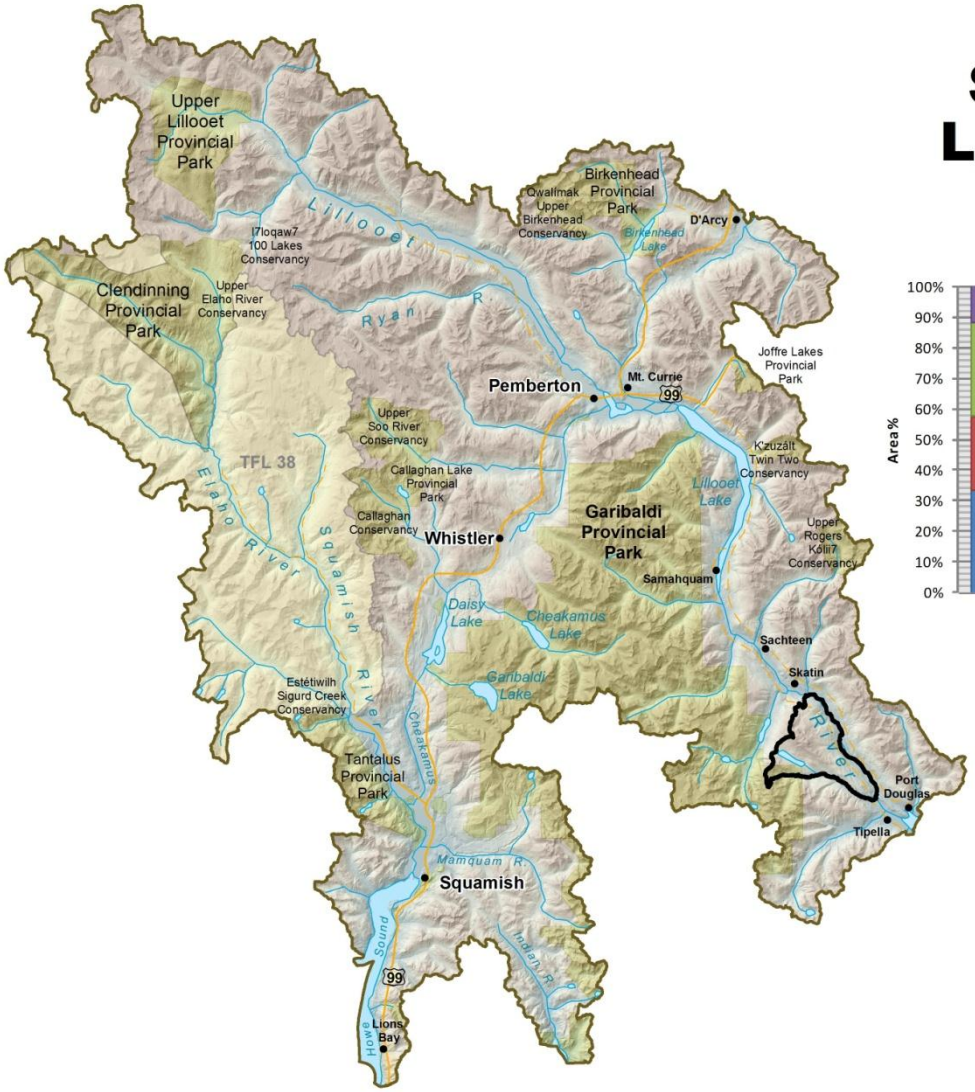
OGMA		OGMA	No OGMA				No OGMA	
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total	Grand Total
46	139	185	38	146	756	0	940	1125
412	68	481	237	710	1901	104	2951	3432
406	181	587	40	847	79	267	1233	1819
0	0	0	0	12	0	621	633	633
0	0	0	11	41	0	1	53	53
864	**388**	**1252**	**326**	**1755**	**2736**	**992**	**5809**	**7062**

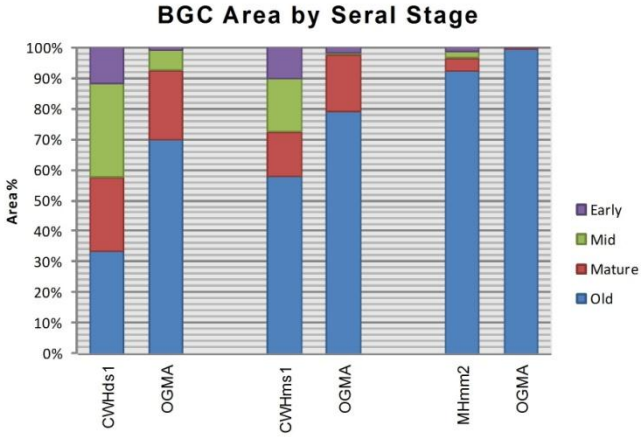
	BEC Variant (Ha)				Forest Age Class (Ha)									
Sloquet - High	**CWHds1**	**CWHms1**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**OGMA Area (Ha)**
SRY_316_001	8	0	0	**8**	0	0	0	8	**100%**		0	0%	8	**8**
SRY_316_002	5	0	0	**5**	0	0	2	3	**60%**		0	0%	5	**5**
SRY_316_003	0	226	103	**329**	11	2	0	315	**96%**	PARK-CONS	329	100%	0	**329**
SRY_316_004	9	0	0	**9**	0	0	3	6	**67%**		0	0%	9	**9**
SRY_316_005	0	6	0	**6**	0	0	0	6	**100%**	PARK-CONS	6	100%	0	**6**
SRY_316_006	0	60	10	**70**	1	3	1	66	**94%**	PARK-CONS	70	100%	0	**70**
SRY_316_007	11	0	0	**11**	1	0	0	10	**91%**		0	0%	11	**11**
SRY_316_008	0	3	1	**4**	0	0	0	3	**75%**		0	0%	4	**4**
SRY_316_009	0	2	9	**11**	1	0	0	10	**91%**		0	0%	11	**11**
SRY_316_010	1	61	61	**124**	11	0	2	111	**90%**	UWR	83	67%	40	**124**
SRY_316_011	0	29	2	**31**	1	2	12	16	**52%**	PARK-CONS	31	100%	0	**31**
SRY_316_012	0	1	7	**9**	0	7	1	0	**0%**	PARK-CONS	9	100%	0	**9**
SRY_316_013	13	4	0	**18**	2	0	0	15	**83%**	UWR	10	56%	8	**18**
SRY_316_014	0	3	2	**5**	1	2	2	0	**0%**	PARK-CONS	5	100%	0	**5**
SRY_316_015	0	0	3	**4**	0	3	0	0	**0%**	PARK-CONS	4	100%	0	**4**
SRY_316_016	0	6	0	**6**	0	0	6	0	**0%**	PARK-CONS	6	100%	0	**6**
SRY_316_017	0	0	35	**35**	28	7	0	0	**0%**	PARK-CONS	35	100%	0	**35**
SRY_316_018	0	4	0	**4**	2	0	1	0	**0%**	PARK-CONS	4	100%	0	**4**
SRY_316_019	15	1	0	**17**	0	1	1	15	**88%**		0	0%	17	**17**
SRY_316_020	0	5	3	**8**	0	0	0	8	**100%**		0	0%	8	**8**
SRY_316_021	0	14	42	**55**	27	3	0	25	**45%**	PARK-CONS	55	100%	0	**55**
SRY_316_022	0	1	5	**6**	0	0	1	5	**83%**		0	0%	6	**6**
SRY_316_023	0	0	6	**6**	0	0	0	6	**100%**		0	0%	6	**6**
SRY_316_024	0	0	5	**5**	1	4	0	0	**0%**	PARK-CONS	5	100%	0	**5**
SRY_316_025	3	0	0	**3**	0	0	0	3	**100%**		0	0%	3	**3**
SRY_316_026	30	1	0	**31**	0	1	0	30	**97%**		0	0%	31	**31**
SRY_316_027	0	0	14	**14**	0	0	0	14	**100%**		0	0%	14	**14**

	BEC Variant (Ha)				Forest Age Class (Ha)									
Sloquet - High	CWHds1	CWHms1	MHmm2	Total	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	OGMA Area (Ha)
SRY_316_028	0	0	5	**5**	1	0	0	4	**80%**	PARK-CONS	5	100%	0	**5**
SRY_316_029	7	0	0	**7**	0	3	0	5	**71%**		0	0%	7	**7**
SRY_316_030	0	0	3	**3**	2	0	0	1	**33%**	PARK-CONS	3	100%	0	**3**
SRY_316_031	0	0	2	**2**	0	0	0	2	**100%**	PARK-CONS	2	100%	0	**2**
SRY_316_032	0	1	2	**3**	0	0	0	3	**100%**		0	0%	3	**3**
SRY_316_033	0	5	1	**6**	0	0	0	6	**100%**		0	0%	6	**6**
SRY_316_034	0	5	0	**5**	0	0	0	5	**100%**	UWR	0	3%	5	**5**
SRY_316_035	0	3	0	**3**	0	0	0	3	**100%**	UWR	1	39%	2	**3**
SRY_316_036	35	1	0	**36**	0	1	0	35	**97%**	UWR	34	94%	2	**36**
SRY_316_037	6	1	0	**7**	0	1	0	6	**86%**		0	0%	7	**7**
SRY_316_038	0	2	0	**2**	0	0	0	2	**100%**		0	0%	2	**2**
SRY_316_039	0	17	53	**70**	3	0	29	38	**54%**	PARK-CONS	30	43%	40	**70**
SRY_316_040	0	5	5	**10**	1	0	0	10	**100%**		0	0%	10	**10**
SRY_316_041	7	0	0	**7**	0	0	0	7	**100%**	UWR	7	100%	0	**7**
SRY_316_042	0	0	16	**16**	2	0	0	14	**88%**	PARK-CONS	16	100%	0	**16**
SRY_316_043	0	0	27	**27**	1	0	0	26	**96%**	PARK-CONS	27	100%	0	**27**
SRY_316_044	0	0	4	**4**	0	1	0	4	**100%**	PARK-CONS	4	100%	0	**4**
SRY_316_045	0	11	19	**30**	1	0	0	29	**97%**	PARK-CONS	5	16%	26	**30**
SRY_316_046	0	0	4	**4**	0	0	0	4	**100%**		0	0%	4	**4**
SRY_316_047	0	0	4	**4**	0	0	0	4	**100%**	UWR	4	100%	0	**4**
SRY_316_048	0	0	17	**17**	0	0	0	17	**100%**	UWR	17	100%	0	**17**
SRY_316_049	0	0	8	**8**	0	0	1	7	**88%**	UWR	8	100%	0	**8**
SRY_316_050	0	0	50	**50**	0	0	5	45	**90%**	UWR	49	98%	1	**50**
SRY_316_051	0	0	34	**34**	0	0	0	34	**100%**		0	0%	34	**34**
SRY_316_052	0	0	24	**24**	0	0	0	24	**100%**		0	0%	24	**24**
SRY_316_053	3	0	0	**3**	0	0	0	3	**100%**		0	0%	3	**3**
SRY_316_054	8	0	0	**8**	0	2	0	7	**88%**		0	0%	8	**8**

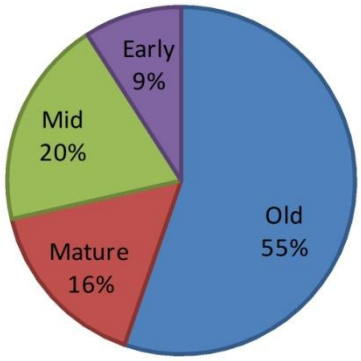
	BEC Variant (Ha)				Forest Age Class (Ha)									
Sloquet - High	**CWHds1**	**CWHms1**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**OGMA Area (Ha)**
SRY_316_055	22	1	0	**23**	0	1	0	21	**91%**		0	0%	23	**23**
Sloquet High Total	**185**	**481**	**587**	**1252**	**100**	**45**	**69**	**1039**	**83%**		**864**	**69%**	**388**	**1252**

Sloquet North Landscape Unit





BGC Variants by Seral Stage- CFLB compared to OGMA s

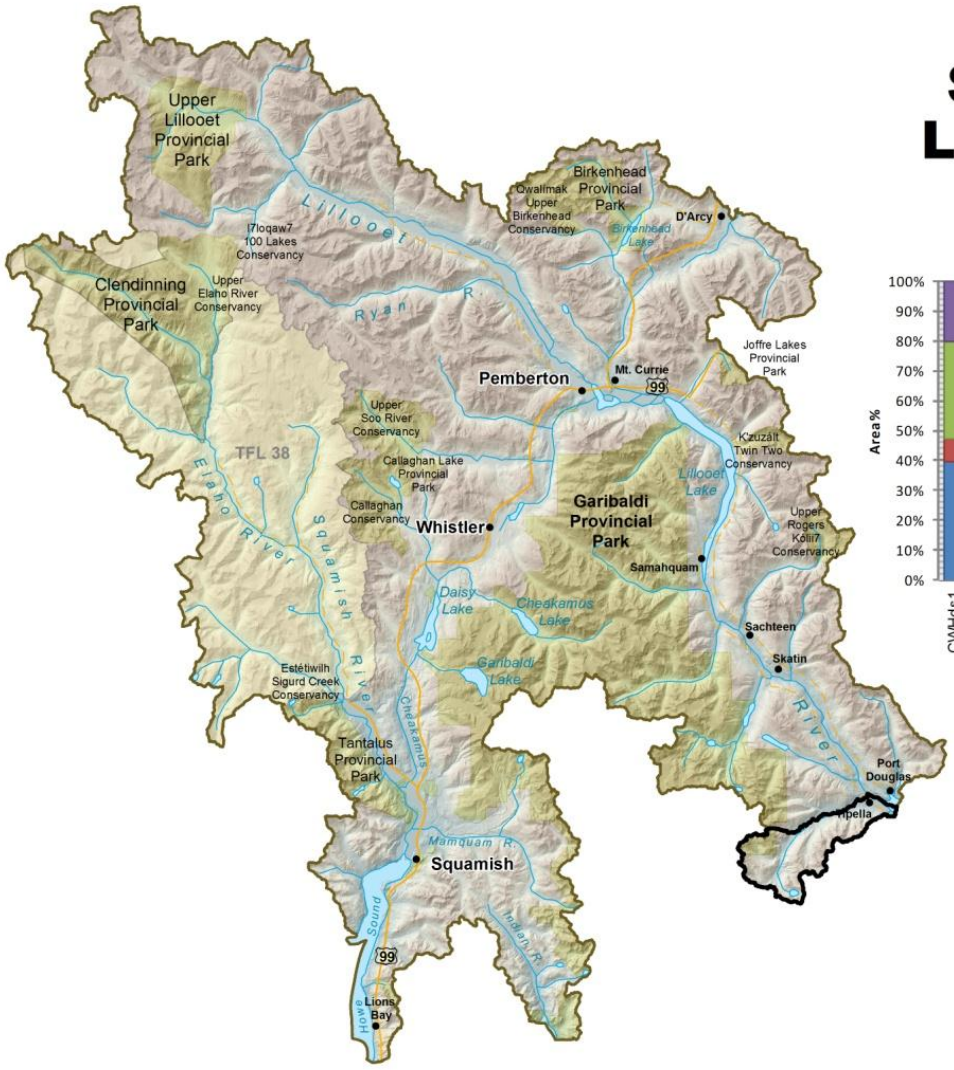


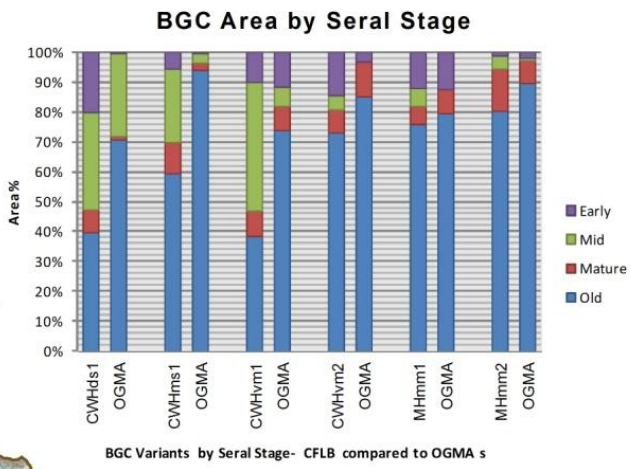
BEC Variant	CFLB HA	Target	OGMA	Diff
CWHds1	2611	235	273	38
CWHms1	2604	234	261	26
MHmm2	1340	255	265	10
CMAunp	436	0		0
MHmmp2	26	0		0
Total	**7017**	**724**	**798**	**74**

OGMA		OGMA	No OGMA				No OGMA	
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total	Grand Total
137	136	273	896	357	1085	0	2338	2611
210	51	261	850	555	818	120	2343	2604
244	21	265	414	410	182	70	1076	1340
0	0	0	0	0	0	436	436	436
0	0	0	2	24	0	0	26	26
590	**208**	**798**	**2163**	**1346**	**2085**	**626**	**6219**	**7017**

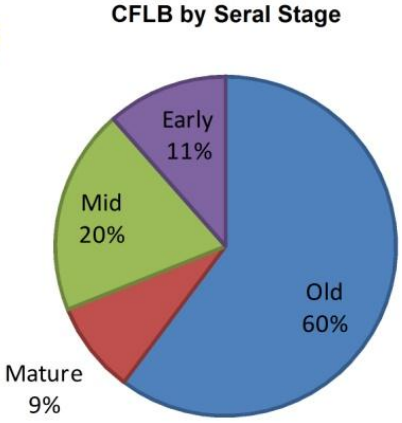
	BEC Variant (Ha)				Forest Age Class (Ha)									
Sloquet - North	**CWHds1**	**CWHms1**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**OGMA Area (Ha)**
SRY_322_001	29	0	0	29	0	0	29	0	0%	WHA	28	98%	1	29
SRY_322_002	15	0	0	16	0	0	1	15	94%	WHA	16	100%	0	16
SRY_322_003	83	95	16	193	3	1	13	177	92%	WHA	193	100%	0	193
SRY_322_004	0	0	80	80	0	0	0	80	100%	WHA	63	78%	17	80
SRY_322_005	2	0	0	2	0	0	0	2	100%	WHA	0	2%	2	2
SRY_322_006	3	0	0	3	0	0	0	3	100%	WHA	2	57%	1	3
SRY_322_007	4	9	0	13	2	1	0	10	77%		0	0%	13	13
SRY_322_008	55	32	0	87	0	13	33	41	47%		0	0%	87	87
SRY_322_009	0	0	20	20	0	0	0	20	100%	WHA	17	84%	3	20
SRY_322_010	0	114	40	154	1	0	3	149	97%	PARK-CONS	153	100%	0	154
SRY_322_011	4	5	0	9	1	0	7	1	11%		0	0%	9	9
SRY_322_012	34	0	0	34	0	1	6	26	76%		0	0%	34	34
SRY_322_013	2	0	0	2	0	2	0	0	0%		0	0%	2	2
SRY_322_014	20	0	0	20	0	0	12	8	40%		0	0%	20	20
SRY_322_015	9	0	0	9	0	0	0	9	100%	UWR	9	100%	0	9
SRY_322_016	7	0	0	7	0	1	0	6	86%		0	0%	7	7
SRY_322_017	3	0	0	3	0	0	3	0	0%		0	0%	3	3
SRY_322_018	4	0	0	4	0	0	0	4	100%		0	0%	4	4
SRY_322_019	0	0	29	29	0	0	0	29	100%	WHA	29	100%	0	29
SRY_322_020	0	1	81	81	0	0	0	81	100%	PARK-CONS	81	100%	0	81
SRY_322_021	0	4	0	4	0	0	4	0	0%		0	0%	4	4
Sloquet North Total	**273**	**261**	**265**	**798**	**8**	**19**	**110**	**662**	**83%**		**590**	**74%**	**208**	**798**

Sloquet South Landscape Unit





BGC Variants by Seral Stage- CFLB compared to OGMA s



BEC Variant	CFLB HA	Target	OGMA	Diff
CWHds1	1065	96	105	9
CWHms1	1125	101	109	8
CWHvm1	1200	156	204	48
CWHvm2	1664	216	275	58
MHmm2	660	125	160	35
MHmm1	932	177	230	53
CMAunp	224	0		0
MHmmp2	4	0		0
MHmmp1	58	0		0
TOTAL	**6933**	**872**	**1083**	**211**

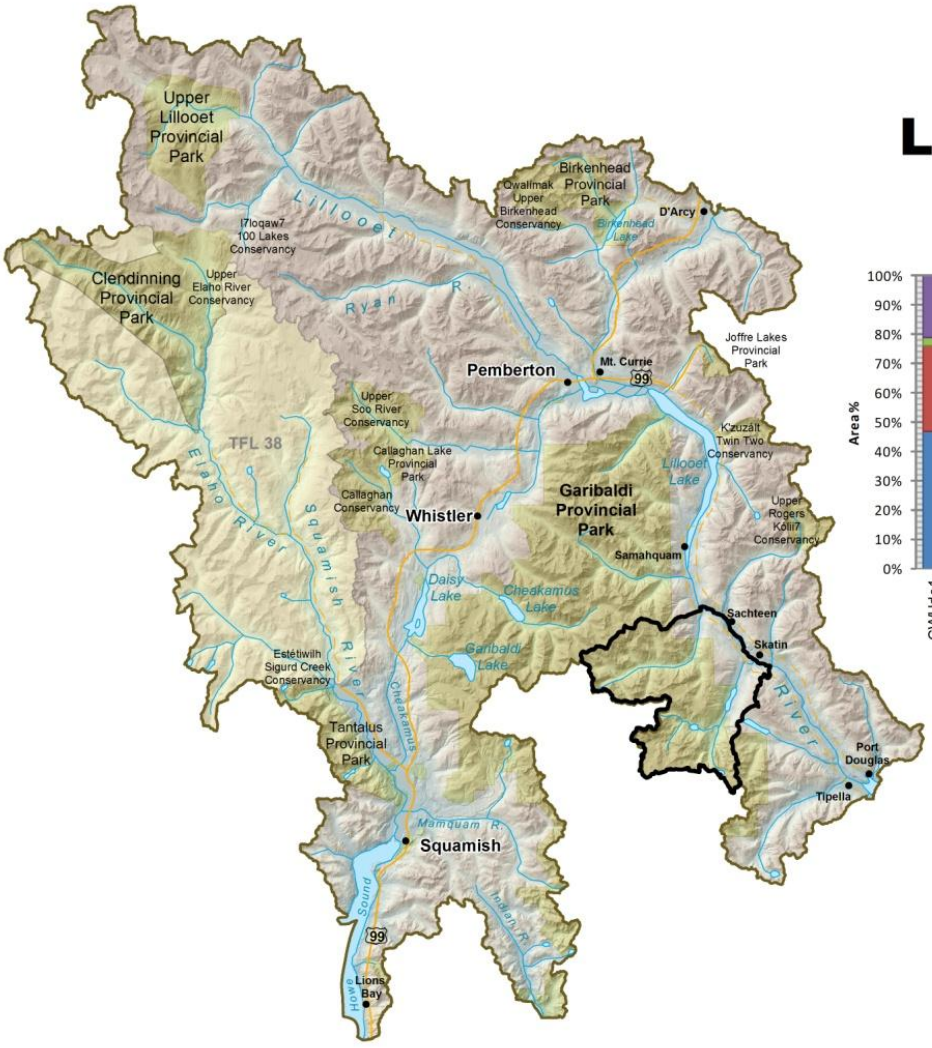
OGMA		OGMA	No OGMA				No OGMA	
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total	Grand Total
0	105	105	0	150	810	0	960	1065
0	109	109	1	206	809	0	1016	1125
123	81	204	47	340	606	2	996	1200
161	114	275	139	699	447	105	1390	1664
23	137	160	4	400	97	0	500	660
180	50	230	157	401	3	141	702	932
0	0	0	2	0	0	222	224	224
0	0	0	0	4	0	0	4	4
0	0	0	54	4	0	0	58	58
487	**597**	**1083**	**403**	**2204**	**2773**	**470**	**5850**	**6933**

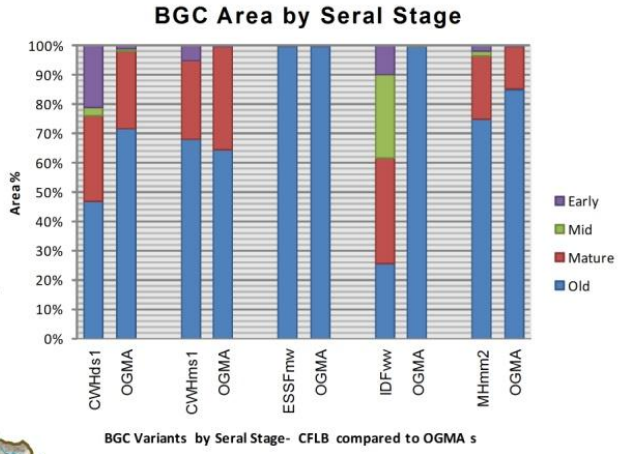
	BEC Variant (Ha)							Forest Age Class (Ha)						Constrained	Constrained	Crown Forest (Ha)	Total OGMA Area (Ha)
Sloquet - South	CWHds 1	CWHms 1	CWHvm 1	CWHvm 2	MHmm 1	MHmm 2	Total (Ha)	Early	Mid	Mature	Old	Old %	Constraint Comment	(Ha)	Area (%)		
SRY_323_001	8	0	0	0	0	0	8	0	8	0	0	0%		0	0%	8	8
SRY_323_002	2	0	0	0	0	0	2	0	2	0	0	0%		0	0%	2	2
SRY_323_003	21	0	0	0	0	0	21	0	18	0	4	19%		0	0%	21	21
SRY_323_004	16	0	0	0	0	0	16	0	2	0	14	88%		0	0%	16	16
SRY_323_005	0	0	0	0	0	6	6	0	0	0	6	100%		0	0%	6	6
SRY_323_006	0	0	0	0	0	6	6	0	0	0	6	100%		0	0%	6	6
SRY_323_007	0	4	0	0	0	0	4	0	4	1	0	0%		0	0%	4	4
SRY_323_008	0	0	0	0	3	0	3	0	0	0	3	100%		0	0%	3	3
SRY_323_009	0	0	0	0	0	6	6	1	0	1	5	83%		0	0%	6	6
SRY_323_010	0	0	39	41	0	0	80	3	0	1	75	94%	UWR	68	85%	12	80
SRY_323_011	0	0	0	0	0	6	6	0	0	0	5	83%		0	0%	6	6
SRY_323_012	0	0	0	0	0	3	3	0	0	1	2	67%		0	0%	3	3
SRY_323_013	0	0	0	0	0	18	18	1	1	1	14	78%		0	0%	18	18
SRY_323_014	0	0	0	0	0	27	27	0	0	4	23	85%	UWR	22	83%	5	27
SRY_323_015	0	0	0	4	0	0	4	0	0	0	3	75%		0	0%	4	4
SRY_323_016	0	0	0	0	0	4	4	0	0	4	0	0%		0	0%	4	4
SRY_323_017	0	0	0	0	0	4	4	0	0	1	2	50%		0	0%	4	4
SRY_323_018	0	0	0	14	0	0	14	1	0	0	14	100%		0	0%	14	14
SRY_323_019	0	0	6	6	3	0	15	0	0	3	12	80%	UWR	14	89%	2	15
SRY_323_020	0	0	6	8	3	0	17	1	0	2	15	88%	UWR	17	100%	0	17
SRY_323_021	0	0	0	0	0	3	3	1	0	0	3	100%	UWR	1	20%	3	3
SRY_323_022	0	0	3	0	0	0	3	0	1	0	3	100%	UWR	0	14%	3	3
SRY_323_023	0	0	0	3	9	0	12	0	0	0	12	100%		0	0%	12	12
SRY_323_024	0	0	0	6	0	0	6	1	0	0	6	100%		0	0%	6	6
SRY_323_025	0	0	0	0	11	0	11	7	0	0	4	36%	UWR PARK-CONS	11	100%	0	11
SRY_323_026	0	0	9	0	0	0	9	0	0	0	8	89%	UWR	1	10%	8	9

	BEC Variant (Ha)							Forest Age Class (Ha)									
Sloquet - South	CWHds 1	CWHms 1	CWHvm 1	CWHvm 2	MHmm 1	MHmm 2	Total (Ha)	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	Total OGMA Area (Ha)
SRY_323_027	0	0	13	0	0	0	13	2	0	1	11	**85%**		0	0%	13	13
SRY_323_028	0	0	0	0	7	0	7	6	0	0	0	**0%**	UWR PARK-CONS	**7**	100%	0	7
SRY_323_029	0	0	2	10	11	0	23	12	0	7	3	**13%**	UWR PARK-CONS	23	100%	0	23
SRY_323_030	0	0	3	2	0	0	6	1	0	0	5	**83%**	UWR PARK-CONS	6	100%	0	6
SRY_323_031	0	0	10	0	0	0	10	0	5	6	0	**0%**		0	0%	10	10
SRY_323_032	0	0	2	4	0	0	6	1	0	0	5	**83%**	UWR PARK-CONS	6	100%	0	6
SRY_323_033	0	0	8	0	0	0	8	1	0	1	6	**75%**	PARK-CONS	8	100%	0	8
SRY_323_034	0	0	15	1	0	0	16	1	0	1	14	**88%**	PARK-CONS	16	100%	0	16
SRY_323_035	0	0	6	0	0	0	6	0	1	0	5	**83%**		0	0%	6	6
SRY_323_036	0	0	0	1	7	0	8	1	0	5	2	**25%**	PARK-CONS	7	94%	0	8
SRY_323_037	0	0	12	48	19	0	79	0	0	24	55	**70%**	UWR PARK-CONS	74	94%	5	79
SRY_323_038	0	0	9	10	0	0	19	0	0	2	17	**89%**		0	0%	19	19
SRY_323_039	0	0	0	12	13	0	26	0	0	0	26	**100%**	PARK-CONS	9	35%	17	26
SRY_323_040	0	0	27	0	0	0	27	0	6	0	21	**78%**		0	0%	27	27
SRY_323_041	0	0	0	3	0	0	3	0	0	0	3	**100%**	PARK-CONS	3	96%	0	3
SRY_323_042	0	0	0	0	3	0	3	0	0	0	2	**67%**	PARK-CONS	3	100%	0	3
SRY_323_043	0	0	0	18	27	0	45	1	0	0	44	**98%**	PARK-CONS	45	100%	0	45
SRY_323_044	0	0	0	0	14	0	14	0	0	0	14	**100%**	PARK-CONS	14	100%	0	14
SRY_323_045	0	0	0	42	25	0	68	0	0	0	68	**100%**		0	0%	68	68
SRY_323_046	0	0	0	10	5	0	15	0	0	0	15	**100%**		0	0%	15	15
SRY_323_047	0	0	0	29	0	0	29	0	0	0	29	**100%**	PARK-CONS	29	100%	0	29
SRY_323_048	0	0	0	0	2	0	2	0	0	0	2	**100%**	PARK-CONS	2	100%	0	2
SRY_323_049	0	0	0	0	34	0	34	0	0	1	32	**94%**	PARK-CONS	34	100%	0	34
SRY_323_050	0	0	0	0	7	0	7	0	0	2	5	**71%**	PARK-CONS	7	100%	0	7
SRY_323_051	0	0	0	0	15	0	15	0	0	9	6	**40%**	PARK-CONS	15	100%	0	15
SRY_323_052	0	0	0	0	5	0	5	2	0	0	3	**60%**	PARK-CONS	5	100%	0	5

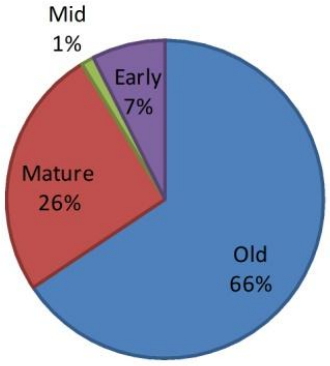
	BEC Variant (Ha)							Forest Age Class (Ha)									
Sloquet - South	CWHds 1	CWHms 1	CWHvm 1	CWHvm 2	MHmm 1	MHmm 2	Total (Ha)	Early	Mid	Mature	Old	Old %	Constraint Comment	Constrained (Ha)	Constrained Area (%)	Crown Forest (Ha)	Total OGMA Area (Ha)
SRY_323_053	0	0	0	0	7	0	7	0	0	0	7	**100%**	PARK-CONS	7	100%	0	7
SRY_323_054	0	16	0	0	0	18	34	0	0	0	34	**100%**		0	0%	34	34
SRY_323_055	0	0	0	0	0	18	18	0	0	0	18	**100%**		0	0%	18	18
SRY_323_056	0	0	0	0	0	34	34	0	0	0	34	**100%**		0	0%	34	34
SRY_323_057	0	20	0	0	0	2	22	0	0	0	22	**100%**		0	0%	22	22
SRY_323_058	0	57	0	0	0	4	61	0	0	2	59	**97%**		0	0%	61	61
SRY_323_060	33	11	0	0	0	0	44	0	0	0	44	**100%**		0	0%	44	44
SRY_323_061	13	1	0	0	0	0	14	0	0	0	14	**100%**		0	0%	14	14
SRY_323_062	12	0	0	0	0	0	12	0	0	1	11	**92%**		0	0%	12	12
SRY_323_063	0	0	34	0	0	0	34	20	0	0	13	**38%**	PARK-CONS	34	100%	0	34
Sloquet South Total	**105**	**109**	**204**	**275**	**230**	**160**	**1083**	**65**	**49**	**83**	**886**	**82%**		**487**	**45%**	**597**	**1083**

Tuwasus Landscape Unit





BGC Variants by Seral Stage- CFLB compared to OGMA s



BEC Variant	CFLB HA	Target	OGMA	Diff
CWHds1	3100	279	303	24
CWHms1	6560	590	624	34
MHmm2	4403	837	866	30
ESSFmw	97	9	22	13
IDFww	63	8	12	4
CMAunp	739	0		0
MHmmp2	27	0		0
TOTAL	**14989**	**1723**	**1828**	**105**

OGMA		OGMA	No OGMA				No OGMA	
Constrained	Crown Forest	TOTAL	Constrained	Inoperable	Crown Forest	Park	Total	Grand Total
283	21	303	727	235	735	1099	2797	3100
561	63	624	731	359	1047	3799	5936	6560
758	108	866	373	465	246	2452	3536	4403
22	0	22	0	0	0	75	75	97
12	0	12	50	0	0	0	51	63
0	0	0	1	0	0	738	739	739
0	0	0	7	20	0	0	27	27
1636	**192**	**1828**	**1889**	**1079**	**2029**	**8163**	**13161**	**14989**

	BEC Variant (Ha)						Forest Age Class (Ha)									
Tuwasus	**CWH ds1**	**CWHms1**	**ESSFmw**	**IDFww**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**Total OGMA Area (Ha)**
SRY_310_001	0	0	0	0	8	8	0	0	2	6	81%		0	0%	8	**8**
SRY_310_002	0	5	0	0	0	5	1	0	0	5	92%		0	0%	5	5
SRY_310_003	0	0	0	0	7	7	1	0	0	6	90%		0	0%	7	7
SRY_310_004	0	0	0	0	11	11	0	0	8	3	31%	UWR	11	100%	0	11
SRY_310_005	0	1	0	0	4	5	1	0	4	0	0%	UWR	5	100%	0	5
SRY_310_006	6	136	0	0	0	142	0	0	87	55	39%	WHA	142	100%	0	142
SRY_310_007	9	0	0	12	0	21	0	0	6	15	71%	WHA	21	100%	0	21
SRY_310_008	2	1	0	0	0	3	0	0	0	3	95%		0	0%	3	3
SRY_310_009	3	0	0	0	0	3	0	0	0	3	85%		0	0%	3	3
SRY_310_010	71	49	0	0	0	120	1	0	65	54	45%	UWR	120	100%	0	120
SRY_310_011	46	21	0	0	0	66	0	0	42	24	36%	WHA	66	100%	0	66
SRY_310_012	0	58	0	0	0	58	0	0	58	0	0%	UWR	10	17%	49	58
SRY_310_013	0	0	0	0	64	64	0	0	26	38	60%	WHA	64	100%	0	64
SRY_310_014	0	2	0	0	84	86	0	0	64	22	26%	WHA	86	100%	0	86
SRY_310_015	0	0	0	0	31	31	0	0	4	27	87%	WHA	31	100%	0	31
SRY_310_016	0	0	0	0	10	10	0	0	0	10	99%	UWR	10	100%	0	10
SRY_310_017	0	0	0	0	33	33	0	0	16	18	54%	UWR	13	40%	20	33
SRY_310_018	0	0	0	0	73	73	0	0	2	71	97%		0	0%	73	73
SRY_310_019	0	184	0	0	44	228	0	0	0	228	100%	PARK-CONS	228	100%	0	228
SRY_310_020	0	100	0	0	0	100	0	0	0	100	100%	PARK-CONS	100	100%	0	100
SRY_310_021	0	7	0	0	300	307	0	0	0	307	100%	PARK-CONS Other	307	100%	0	307
SRY_310_022	0	0	0	0	171	171	0	0	3	168	98%	PARK-CONS	171	100%	0	171
SRY_310_023	0	14	22	0	0	36	0	0	0	36	101%	PARK-CONS	36	100%	0	36
SRY_310_024	126	0	0	0	0	126	0	0	0	126	100%		126	100%	0	126
SRY_310_025	22	30	0	0	0	53	2	1	15	34	65%	UWR	29	55%	24	53
SRY_310_026	18	11	0	0	0	29	1	0	27	2	7%	WHA	29	100%	0	29
SRY_310_027	0	5	0	0	24	30	0	0	0	30	98%	WHA	30	100%	0	30

	BEC Variant (Ha)						Forest Age Class (Ha)									
Tuwasus	**CWH ds1**	**CWHms1**	**ESSFmw**	**IDFww**	**MHmm2**	**Total**	**Early**	**Mid**	**Mature**	**Old**	**Old %**	**Constraint Comment**	**Constrained (Ha)**	**Constrained Area (%)**	**Crown Forest (Ha)**	**Total OGMA Area (Ha)**
Tuwasus Total	**303**	**624**	**22**	**12**	**866**	**1828**	**6**	**1**	**430**	**1390**	76%		**1636**	**89%**	**192**	**1828**