Prince George Area (Forest District)
Sustainable Resource Management Plan

Old Seral Chapter

Background Report for:

The plan area for this document is made up of the following Landscape Units:

Dome Landscape Unit
Slim Landscape Unit

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Background Report – Prince George Sustainable Resource Management Plan

1.0 Introduction

This report provides background information used during the preparation of the Slim and Dome old growth management areas and legal objectives. This report also explains the rationale used during the planning stage.

Sustainable Resource Management (SRM) Planning is being undertaken in high priority areas of the province, and is an important component of the *Forest Practices Code* (FPC) which allows legal establishment of objectives to address landscape level biodiversity values. Biological diversity or biodiversity is defined as: *'the diversity of plants, animals and other living organisms in all their forms and levels of organization, and includes the diversity of genes, species and ecosystems as well as the evolutionary and functional processes that link them'*.

One of the goals of implementation of SRM Planning is to help maintain biodiversity values. Retention of biodiversity provides important benefits such as, protection of water quality, habitat conservation and preservation of other natural resources. The distribution of Old Growth Management Areas (OGMAs) will be reviewed periodically to ensure their ecological suitability through time.

The Prince George Forest District had completed draft Landscape Units (LU) boundaries and established draft Biodiversity Emphasis Options (BEO) in accordance with the direction provided by government. There are 45 LUs within the Prince George Forest District.

Delineation of old growth management areas was undertaken by Ministry of Sustainable Resource Management (MSRM) with information provided by Ministry of Forests (MOF) and Ministry of Water, Land and Air Protection (MWLAP) staff. Input was also received from forest licensees and interested public. Refer to the attached maps for the location of OGMAs.

2.0 Business Case / Purpose

The Dome and Slim landscape units have been identified as a priority for establishment of old growth management areas due to several related resource use initiatives.

In the Prince George Timber Supply Area – *Rationale for Allowable Annual Cut (AAC) Determination* – Effective June 1, 2002, Larry Pedersen, Chief Forester stated: "I encourage staff to complete landscape unit planning objectives for the ICH (Interior Cedar Hemlock biogeoclimatic zone) to ensure that rare biogeoclimatic site series are identified and protected in OGMAs."

Forest Practice Board stated in Complaint investigation 010287 – *Timber Salvage Near Ptarmigan Creek East of Prince George – July 2001,* in their conclusions "6. The plan (forest development plan) covers somewhat controversial operations in a relatively poorly-understood forest association. The timber supply and landscape-level management are currently under review. The next forest development plan should consider the best information available on sound forest management in the old stand in the interior cedar-hemlock association."

Also, in September of 2000 a conference was held by the University of Northern BC that was titled *Interior Cedar Hemlock – Stewardship Conference "Challenges of a Unique Ecosystem"*. The opening address by Jayme Buckmaster, Darwyn Coxson and Susan Stevenson states:
"Over time, some wet ICH stands develop special structural attributes associated with very old forests, such as large-diameter standing trees and coarse woody debris, hollow trees, very old woody substrates, and a high level of structural diversity on both horizontal and vertical dimensions. … Goward (1994) noted that the species diversity in some old growth ICH forest stands implies a continuity of forest cover that may reach millennia. Species such as pin lichens, which occupy the surface of bark on the lower trunks of old growth trees, may provide valuable indicators of "antique" forests."

3.0 Summary of Benefits and Impacts

Within the context of Ministry of Sustainable Resource Management and SRM Planning, the underlying purpose of establishment of these OGMAs is to help produce greater certainty and yield increased economic and social benefits while maintaining environmental values.

The benefits and impacts of the establishment of OGMAs in Dome and Slim landscape units are summarized as follows:

- improved certainty about the management of old growth and old growth dependant species
- improved certainty for forest licensees and the Ministry of Forests when preparing and approving Forest Development Plans
- increased operating costs and loss of harvesting opportunity in certain sites for non-replaceable cedar / hemlock forest licensee
- reduces the timber harvesting land base (THLB) by 6035 hectares (total THLB for TSA is 3,388,145 hectares); provides greater certainty in the remaining 46,100 hectares of THLB in the Dome and Slim landscape units.
- no short term impact to the timber supply of the Prince George Timber Supply Area (TSA); very small mid and long term impact to the timber supply
- social benefits include support and confidence from the local community (Dome Creek) and the scientific community (UNBC)
- provides an opportunity for tourism and education in the very old sites adjacent to Highway 16
- no impact on existing mineral, aggregate and gas permits or tenures; nor, exploration and development activities

4.0 Landscape Unit Objectives

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

It is the intention that the Regional Director will establish the Objectives as Higher Level Plan under Section 4 of the *Forest Practices Code of B.C. Act.* The Strategies are intended to guide other Statutory Decision Makers, such as the District Manager of Ministry of Forests, when reviewing or approving operational plan.

OGMA objectives apply only to provincial forest lands. While park and Crown forest lands outside of provincial forest may contribute to old seral representation, LU objectives do not apply to these areas (e.g. Ptarmigan Creek, Erg Mountain, Sugarbowl / Grizzly Creek and Slim Creek Protected Areas). BC Parks' Staff indicated that "it is acceptable to consider the forested area in Slim Creek Provincial Park as contributing to the old growth target for the subzone variant, *providing BC Parks management options remain unfettered.* I am far less comfortable agreeing to have the other three parks considered as contributing to old growth targets. As Slim Creek is small and has always been an ER proposal, there is a justification to support it. For the others, I am fairly confident that in the future BC Parks will be undertaking management actions in the future which will potentially affect, in one way or other, old growth values." Therefore, Slim Creek Protected Area's old forests contribute to the OGMA target; however, the other protected areas do not.

OGMAs were established in each Biogeoclimatic variant throughout each LU, as shown by the attached maps. This follows the coarse filter approach to biodiversity management whereby representative old growth stands are protected to maintain ecosystem processes and wildlife habitat requirements.

5.0 OGMA Planning Considerations and Rationale

This section is intended to provide information regarding LU planning considerations and to explain the rationale used during OGMA delineation.

5.1 Ecosystem Management: Wildlife habitat information was used, where available, for caribou and grizzly bear. Each LU contains varying amounts of wildlife habitat from which to build on for ecosystem management. The FPC ungulate winter range process, once completed, will also help provide a better foundation for ecosystem management. In addition, Wildlife Habitat Areas that may be established in the future will add to the foundation, and the establishment of riparian reserve zones will contribute to ecosystem integrity. The habitat provided by these various processes together with OGMAs provides the fundamental backbone for which to achieve a functioning ecosystem.

An important part of the OGMA planning exercise was to ensure that these separate processes complemented each other. Larger patches of old growth provide core areas and allow greater opportunity to improve connectivity. The intent is to maintain a series of old forest habitat patches across probable movement corridors to allow wildlife dispersal and gene flow. Using this approach along with stand level biodiversity measures will increase the likelihood of sustaining viable wildlife populations that are well distributed across their natural range.

It should also be noted that natural processes such as insect feeding or disease will be allowed to occur within OGMAs provided that they do not pose a significant threat to forested areas outside OGMAs. These activities at endemic levels are considered a natural part of ecosystem variability and are expected to have varying effects on biodiversity. It is anticipated that delineation of OGMAs across the landscape reduces the likelihood of losing all OGMA in one catastrophic event.

5.2 Timber Supply and Mitigation: During delineation of OGMAs for priority biodiversity provisions an attempt was made to mitigate the short and long-term impacts on timber supply. For example, OGMAs were considered first in the non-contributing forest land base. Since representation must be at the variant level, the non-contributing land base could not always satisfy old forest requirements. Some public and scientific community input was received which suggested significant old growth attributes in areas identified as timber harvesting land base. These were also considered and sometimes included as old growth management areas. Land base that was constrained due to other land uses, such as visual quality management or mountain caribou management, was also considered in the selection of OGMAs. Generally, more THLB was required in lower elevation variants to capture significant old growth attributes, while in the higher elevations less THLB was required due to the larger amount of non-contributing land base.

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

A non-replaceable cedar/hemlock tenure holder has expressed concern that there are impacts to them, in addition to the general timber supply impacts indicated for the other Forest Licensees. In order to assist in assessing some of the impact to FL A61216, the following information is offered:

> The data indicates that we have captured 8% of the leading cedar and hemlock available to the non-replaceable licensees (in the PG TSA THLB) (10% of the cedar and 3% of the hemlock). FL A61216 indicates that the Dome and Slim have a significant portion of the most economical cedar and hemlock for harvesting opportunity. The data shows that the OGMAs in Slim and Dome make-up 22% of the THLB for leading cedar and hemlock in the LUs (23% of the cedar in the THLB and 19% of the hemlock). Therefore conversely, 78% of the THLB leading cedar and hemlock is available to the cedar/hemlock licensee.

Where forest or mining roads must be constructed within OGMAs, they should be temporary and permanent road deactivation should occur upon completion of operational activities. Deactivation should prevent motorized access (i.e. 4WD, ATV, motorcycle) and should include re-contouring the right-of-way as well as replanting. This reclamation may prevent moving the OGMA. However, where impacts from roads can not be mitigated, replacement OGMAs should be established.

Cone gathering is permitted within OGMAs provided it can be done without felling the tree.

5.3 OGMA Age Classes*:* In the Engelmann Spruce - Subalpine Fir (ESSF) variants there was insufficient old forest (250+ years) to meet OGMA targets. Therefore, it was necessary to designate younger aged mature stands (i.e. age 141-250 years) as OGMAs.

5.4 OGMA Assessment Process and Selection Criteria: Individual OGMA polygons were assessed by forest cover information, aerial photograph interpretation, aerial reconnaissance and/or field inspections, in an attempt to evaluate stand attributes and biodiversity values/attributes. During helicopter reconnaissance physical parameters such as stocking density, tree size, presence of snags and multi-layered canopies were used to assess the suitability of a given site as an OGMA. More hectares than were needed to meet OGMA targets were originally assessed so that the most suitable candidate areas could be selected from draft maps. Following the helicopter flight and after discussions with licensees, candidate areas were adjusted to the approximate OGMA target by variant. See Table 3 in Appendices 1 and 2 for a more detailed description of OGMA attributes specific to each LU.

In the selection process an attempt was made to select OGMAs that provided connectivity and provided a variety of aspects, slope positions and tree species.

Some non-contributing forest land such as riparian reserve zones could not be assessed or included in OGMAs at this time. As more stand level data becomes available it may be possible to include this information into OGMA discussions, in the future.

5.5 OGMA Monitoring and Review

Ministry of Sustainable Resource Management will monitor activities within OGMAs, as issues are identified. It is the intention to review this plan and assess any changes to the OGMAs at least every 5 years.

The OGMAs in the leading cedar stands are anticipated to be stable for a significant period of time. The OGMAs in stand types that are more susceptible to stand level disturbance may be subject to review and change more frequently.

If forest harvesting or a natural disturbance is considered to have impacted the integrity and/or function of an OGMA, than an assessment will take place to determine whether the affected portion should be replaced by an equivalent area, or whether the entire OGMA should be replaced.

5.6 OGMA Boundary Mapping: OGMA boundaries used natural features wherever possible to ensure they could be located on the ground. OGMAs were also delineated to include complete forest stands (forest cover polygons) wherever possible to reduce operational uncertainty and increase ease of OGMA mapping.

OGMA boundaries do not have to be legally surveyed. Potential trespass across OGMA boundaries will be enforced to a reasonable standard of measurement. This means that a licensee's proposed harvest area can only be expected to be in or outside of an OGMA as it is shown on the map. Therefore if a licensee submitted a plan showing proposed development outside the mapped OGMA boundary that would be taken as correct. However, the licensee is responsible for ensuring due diligence in locating their cutblock boundaries to the accuracy shown on the map. OGMAs will be mapped at 1:50,000 scale.

Further, to deal with potential operational overlap between OGMAs and cutblocks, the following may be necessary. Where Category A approved or future cutblocks are located or proposed in close proximity (within 100m) to established OGMAs, the OGMA boundary may be modified to conform to the cutblock boundary. This would be undertaken to avoid isolating timber and create a more defined boundary for future reference. This provision is not a substitute for accurate mapping and block layout.

6.0 Other Biodiversity Provisions

The *Landscape Unit Planning Guide* makes reference to comprehensive biodiversity planning which includes elements such as: seral stage distribution, landscape connectivity, species composition, and temporal and spatial distribution of cutblocks (patch size), forest interior habitat and wildlife tree retention. While old seral connectivity, old seral species composition, and old seral interior forest habitat are address through the establishment of the OGMAs, these other elements may be considered in future Sustainable Resource Management Planning.

7.0 Link to the Land and Resource Management Plan (LRMP)

The Prince George LRMP was approved in January 1999. Within that plan there are relevant sections to consider and guide OGMA establishment.

A relevant objective is to "manage for biodiversity by maintaining a pattern of mature and old growth forest at the landscape level." Relating strategies are:

- "Mimic natural patterns of connectivity to provide for movement corridors across disturbed landscapes.
- Manage for a sustainable seral stage distribution, including old growth and deciduous leading stands, at a landscape level."

Also within the Interior Cedar Hemlock variant, a relevant objective is to "maintain rare and uncommon habitats, plants and/or animal species." Relating strategies are:

- "BC Environment or designate will identify rare and uncommon habitats, plants and/or animal species and plant associations.
- BC Environment or designate will consult with other users and resource agencies to develop and implement management plans to protect rare and uncommon habitats, plants and/or animal species and plant associations."

The Dome and Slim LUs are with several Resource Management Zones (RMZs), as identified in the LRMP. They include:

RMZ number	RMZ name	RMZ category
45	Sugarbowl / Grizzly Creek	Protection
46	Bowron Valley	General Resource Management
47	Haggen Creek	Special Resource Management – Natural Habitat
49	Ptarmigan Creek	Protection
50	Erg Mountain	Protection
51	Slim Creek	Protection
52	Fraser Valley East	Settlement - Agriculture

8.0 Appendices

Appendix 1 – Dome Landscape Unit
Appendix 2 – Slim Landscape Unit

(It is anticipated that OGMA objectives for the Humbug Landscape Unit, will be advertized for the public comment, in the Fall of 2002.)

Appendix 1– Dome Landscape Unit

1.0 Dome Landscape Unit Description

The Dome LU encompasses 51,780 ha, which includes Dome and Ptarmigan Creek. Both creeks flow into the Fraser River, which is the northern boundary of the LU. Of the total area, 31,780 ha (61.4%) is within the Crown forest land base, and 17,028 ha of Crown forest land is within the Timber Harvesting Land Base (THLB). The remaining 20,000 ha (38.6%) are non-forested or non-Crown (e.g. rock, alpine tundra, water, private land) and have been excluded from any OGMA contributions and calculations.

The entire LU is situated within the Southern Interior Mountains Ecoprovince, and the Upper Fraser Trench and the Northern Columbia Mountains Ecosections. The landscape unit is comprised of 5 Biogeoclimatic Ecosystem Classification (BEC) subzones/variants ranging from low elevation Sub-Boreal Spruce (SBS) and Interior Cedar - Hemlock (ICH) adjacent to the Fraser River to high elevation Alpine Tundra.

2.0 Significant Resource Values

2.1 Fish, Wildlife and Biodiversity: Wildlife resources of primary management concern (as identified through the LRMP) in the Dome LU include: caribou (red-listed), grizzly bear (blue-listed), marten, moose, deer and elk. Many other species are present including forest birds, raptors, small mammals, amphibians and furbearers (including blue-listed wolverine) but their habitat requirements are generally managed within habitat provisions provided for primary species.

Dome and Ptarmigan Creek support resident salmon populations (DFO 1995). Riparian reserve zones established (as per the FPC) adjacent to these fish streams will help maintain fish habitat. In addition, Dome Creek and some up-stream lakes, contain bull trout (blue-listed)

2.2 Timber Resources: The Dome LU has a variety of logging history from early periods where sawmills were developed along the railway, to more recent logging in the lower elevation spruce stands, to most recent logging of the cedar in the ICH. The presence of a substantial timber harvesting land base establishes the importance of timber resource values. Continued access to commercially valuable timber, including future second growth, is a significant concern.

The dominant commercially valuable tree species in the Dome LU are spruce, sub-alpine fir, and cedar. Hemlock is also present but the current market for hemlock does not make it economically desirable. Based on forest cover information, Table 1 shows the age composition of forests in the Dome LU.

When harvesting is required within an OGMA, the Ministry of Forests should raise the issue with the Ministry of Sustainable Resource Management.

Table 1. Age distribution of forests within the Dome Landscape Unit.

Age	% of Crown Forested Landbase
1-60	9
61-100	2
101-140	5
141-250	55
250+	29

Two licensees have forest tenures in this landscape unit. The Small Business Forest Enterprise Program (SBFEP) is operated by the Ministry of Forests. Timber sales issued by SBFEP are sold to registered small business operators. Carrier Lumber also has an operating area within Dome LU. In addition, TRC Cedar Ltd. is a non-renewable licensee which operates within the LU.

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

2.3 Private Land: A small portion of the Dome LU is private land, all of which is adjacent to the northern boundary of the LU (also adjacent to the Fraser River). Much of the private land has been altered from its natural state for housing and agriculture.

2.4 First Nations: The Dome LU is located within the traditional territory of the Lheidli T'enneh First Nation.

An Archaeological Overview Assessment model was developed by MOF to indicate where archaeological sites are most likely located. This was done to minimize potential impacts by forestry operations on culturally important areas. The model indicates high potential adjacent to the Fraser River.

During consultation with Lheidli T'enneh First Nation an attempt will be made to determine if there are values which should be considered for OGMA establishment and other components of SRM Planning. In general, land use plans and designations (such as old growth management area establishment) will not limit treaty negotiations or settlements.

2.5 Mining and Mineral Exploration: Subsurface resources (minerals, coal, oil, gas and geothermal) and aggregates are significant to the province. OGMAs have been located to avoid existing tenures wherever possible. It is important to note that establishment of old growth management areas will not impact the status of existing mineral, aggregate and gas permits or tenures; exploration and development activities are permitted. The preference is to proceed with exploration and development in a way that is sensitive to the old growth values of the OGMA; however if exploration and development proceeds to the point of significantly impacting old growth values, then the OGMA will be relocated.

2.6 Recreation: Recreational opportunities in the Dome LU focus on the backcountry and Fraser River. Hiking, residential hunting, berry and mushroom picking and wildlife viewing/sight seeing occurs. The LU is some distance from a major population centre, but has Highway 16 transecting it. Highway 16 is a major travel and tourist route. The residents of Dome Creek and Crescent Spur probably use the areas for a variety of recreational pursuits.

There is one Forest Service Recreation Site in the Dome LU, according to a Recreation Map dated 1994. It is located at Ptarmigan Creek and is identified as a small, semi-open site next to the creek used mostly as a staging area for hikers to Erg Mountain. There are two provincial parks (Erg Mountain and Ptarmigan Creek) within the Dome LU, established through the LRMP in 1999.

Recreational activities are permitted in the OGMAs. The opportunity to develop new trails will be considered at when a new trail is proposed. The anticipated impact to old growth values should be considered in the approval process.

2.7 Trapping and Guiding: Trapping and guiding tenures overlap this LU. OGMAs are not anticipated to impact these tenures. It is intended that Trappers would be able to build trapline cabins within OGMAs. The trapper would be expected to minimize site disturbance and minimize impact to old growth attributes.

3.0 Dome Landscape Unit Objectives

Legal objectives established under the Landscape Unit plan will be Higher Level Plan objectives.

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

To ensure that landscape level biodiversity values were represented across the landscape, OGMAs were established to the target in each BEC variant. The attached Dome LU map visually shows their distribution.

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

Table 2. Old growth management area (OGMA) requirements, Dome Landscape Unit.

BEC Variant & Natural Disturbance Type	Crown Forested Landbase	Full OGMA Target		Established OGMAs	OGMAs in Non-Contributing (NC)		OGMAs in Contributing (THLB)	
	Ha	%	Ha	Ha	Ha	%	Ha	%
ESSFwk1	14,260	28	3993	3990	3127	78	863	22
ICHvk2	2584	19	491	498	264	53	234	47
ICH wk3	11,558	19	2196	2245	1058	47	1187	53
SBSvk	3378	13	439	474	154	32	320	68
Total	31,780		7119	7207	4603	64	2604	36

Table 3. Timber harvesting land base information, Dome Landscape Unit.

BEC Variant	Crown Forested Landbase	Timber Harvesting Land Base (before OGMA establishment)	OGMAs in THLB		Remaining THLB	
	Ha	Ha	Ha	%	Ha	%
ESSFwk1	14,260	5440	863	16	4577	84
ICHvk2	2584	1654	234	14	1420	86
ICH wk3	11,558	7136	1187	17	5949	83
SBSvk	3378	2798	320	11	2478	89
Total	31,780	17,028	2604	15	14,424	85

ESSFwk1: Engelmann Spruce – Subalpine Fir, wet cool
ICHvk2: Interior Cedar – Hemlock, very wet, cool
ICHwk3: Interior Cedar – Hemlock, wet, cool
SBSvk: Sub-Boreal Spruce, very wet, cool

4.0 Dome OGMA Planning Results

4.1 Timber Harvesting Land Base Impact: In the Dome LU, most of the old growth targets are met within the non-contributing land base. In total, ha of OGMA are identified in the THLB to meet old growth retention targets. The estimated impact to short term timber supply is none (based on a comparison to a sensitivity analysis in the PG TSA Analysis Report September 2001). The mid and long term impact to timber supply is anticipated to be proportionate to the percent of OGMAs which are established in the THLB.

4.2 OGMA Age Classes: In the Dome Landscape Unit there is insufficient old forest in the ESSFwk1 variants to meet the old growth targets. The lack of age class 9 is probably an indication that the inventory is not accurate or that these stands do not naturally attain the age suggested in the Biodiversity Guidebook. This is an issue for the ESSF in most LUs in the Prince George Forest District. Most OGMAs were identified in age class 8. Age class 8 indicates adequate old growth attributes for the ESSF.

4.2 OGMA Summary: An area summary by OGMA is provided in Table 4 on the following pages.

Appendix 2 – Slim Landscape Unit

1.0 Slim Landscape Unit Description

The Slim LU covers a total area of 66,526 ha and includes the Slim, Everette, and Driscoll Creeks. Everette flows into Slim Creek. Slim and Driscoll flow directly into the Fraser River. Of the total area, 56,310 ha (84.6%) is within the Crown forest land base, and 29,073 ha of Crown forest land is included in the Timber Harvesting Land Base (THLB). The remaining 10,216 ha (15.4%) are non-forested or non-Crown (e.g. rock, alpine tundra, water, private land) and have been excluded from any OGMA contributions and calculations.

The entire LU is situated within the Southern Interior Mountains Ecoprovince, and the Upper Fraser Trench and the Northern Columbia Mountains Ecosections. The landscape unit is comprised of 4 Biogeoclimatic Ecosystem Classification (BEC) subzones/variants ranging from low elevation Sub-Boreal Spruce and Interior Cedar - Hemlock (ICH) adjacent to the Fraser River to high elevation Alpine Tundra.

2.0 Significant Resource Values

2.1 Fish, Wildlife and Biodiversity: Wildlife resources of primary management concern (as identified through the LRMP) in the Dome LU include: caribou (red-listed), grizzly bear (blue-listed), marten, moose, deer and elk. Many other species are present including forest birds, raptors, small mammals, amphibians and furbearers (including blue-listed wolverine) but their habitat requirements are generally managed within habitat provisions provided for primary species.

Slim Creek supports a resident salmon population (DFO 1995). Riparian reserve zones established (as per the FPC) adjacent to these fish streams will help maintain fish habitat.

2.2 Timber Resources: The Slim LU has a variety of logging history from early periods where sawmills were developed along the railway, to more recent logging in the lower elevation spruce stands, to most recently logging of the cedar in the ICH. Of particular significance is a portion of the Slim Creek drainage which was part of the large Bowron clear-cut of the 1980s which occurred in response to a spruce bark beetle infestation. More recently, in the 1990s, there was a hemlock looper outbreak which defoliated hemlock, cedar and spruce stands.

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

The dominant commercially valuable tree species in the Slim LU are spruce, sub-alpine fir, and cedar. Hemlock is also present but the current market for hemlock does not make is economically desirable. Based on forest cover information, Table 1 shows the age composition of forests in the Slim LU.

Table 1. Age distribution of forests within the Slim Landscape Unit.

Age	% of Crown Forested Landbase
1-60	20
61-100	2
101-140	4
141-250	56
250+	18

Two licensees have forest tenures in this landscape unit. The Small Business Forest Enterprise Program (SBFEP), operated by the Ministry of Forests. Timber sales issued by SBFEP are sold to registered small business operators. Canadian Forest Products LTD. (CanFor) also has operating area within Slim LU. In addition, TRC Cedar Ltd. is a non-renewable licensee which operates with the LU.

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

2.3 Private Land: A small portion of the Slim LU is private land, all of which is adjacent to the northern boundary of the LU (also adjacent to the Fraser River). Much of the private land has been altered from its natural state for housing and agriculture.

2.4 First Nations: The Slim LU is located within the traditional territory of the Lheidli T'enneh First Nation.

An Archaeological Overview Assessment model was developed by MOF to indicate where archaeological sites are most likely located. This was done to minimize potential impacts by forestry operations on culturally important areas. The model indicates high potential adjacent to the Fraser River.

During consultation with Lheidli T'enneh First Nation an attempt will be made to determine if there are values which should be considered for OGMA establishment and other components of SRM Planning. . In general, land use plans and designations (such as old growth management area establishment) will not limit treaty negotiations or settlements.

2.5 Mining and Mineral Exploration: Subsurface resources (minerals, coal, oil, gas and geothermal) and aggregates are significant to the province. OGMAs have been located to avoid existing tenures wherever possible. It is important to note that establishment of old growth management areas will not impact the status of existing mineral, aggregate and gas permits or tenures; exploration and development activities are permitted. The preference is to proceed with exploration and development in a way that is sensitive to the old growth values of the OGMA; however if exploration and development proceeds to the point of significantly impacting old growth values, then the OGMA will be relocated.

2.6 Recreation: Recreational opportunities in the Slim LU focus on the backcountry and Fraser River. Hiking, residential hunting, berry and mushroom picking and wildlife viewing/sight seeing occurs. The LU is some distance from a major population centre, but has Highway 16 transecting it. Highway 16 is a major travel and tourist route. The residents of Dome Creek and Crescent Spur probably use the areas for a variety of recreational pursuits.

There are no Forest Service Recreation Sites in the Slim LU. There are two provincial parks (Slim Creek and Sugarbowl Grizzly Creek) within the Slim LU, established through the LRMP in 1999.

Recreational activities are permitted in the OGMAs. The opportunity to develop new trails will be considered at when a new trail is proposed. The anticipated impact to old growth values should be considered in the approval process.

2.7 Trapping and Guiding: Trapping and guiding tenures overlap this LU. OGMAs are not anticipated to impact these tenures. It is intended that Trappers would be able to build trapline cabins within OGMAs. The trapper would be expected to minimize site disturbance and minimize impact to old growth attributes.

3.0 Slim Landscape Unit Objectives

Legal objectives established under the Landscape Unit plan will be Higher Level Plan objectives.

The Slim LU was ranked as a High biodiversity emphasis option through the biodiversity value ranking process completed earlier (see the Prince George Forest Region Landscape Unit Planning Strategy, 1999). This High designation along with the BEC variant determines the percentage of the Crown forest land base that will be designated as OGMA. Table 2 outlines the total amount of OGMA required in each variant and from which Crown forest category (i.e. Non Contributing-NC; Timber Harvesting Land Base)[2]. The old growth target figures in Table 2 are derived from Appendix 2 in the Landscape Unit Planning Guide.

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

To ensure that landscape level biodiversity values were represented across the landscape, OGMAs were established to the target in each BEC variant. The attached Slim LU map visually shows their distribution.

Table 2. Old growth management area (OGMA) requirements, Slim Landscape Unit.

BEC Variant	Crown Forested Landbase	Full OGMA Target			Estab-lished OGMAs	OGMAs in Non-Contributing (NC)		OGMAs in Contributing (THLB)	
	Ha	**%**	Ha	Minus Slim PA	Ha	Ha	**%**	Ha	**%**
ESSFwk1	21,215	28	5940	5940	6000	5353	89	647	11
ICHvk2	20,605	19	3915	3615	3650	2067	57	1583	43
SBSvk	14,490	13	1884	1741	1724	723	42	1001	58
Total	56,310		11,739	11296	11374	8143	72	3231	28

Table 3. Timber harvesting land base information.

BEC Variant	Crown Forested Landbase	Timber Harvesting Land Base (before OGMA establishment)	OGMAs in THLB		Remaining THLB	
	Ha	Ha	Ha	**%**	Ha	**%**
ESSFwk1	21,215	7391	647	9	6744	91
ICHvk2	20,605	10,948	1583	14	9365	86
SBSvk	14,490	10,734	1001	9	9733	91
Total	56,310	29,073	3231	11	25842	89

ESSFwk1: Engelmann Spruce – Subalpine Fir, wet cool
ICHvk2: Interior Cedar – Hemlock, very wet, cool
SBSvk: Sub-Boreal Spruce, very wet, cool

4.0 Slim OGMA Planning Results

4.1 Timber Harvesting Land Base Impact: In the Slim LU, most of the old growth targets are met within the non-contributing land base. In total, 3427 ha of OGMA are identified in the THLB to meet old growth retention targets. The estimated impact to short term timber supply is none (based on a comparison to a sensitivity analysis in the PG TSA Analysis Report September 2001). The mid and long term impact to timber supply is anticipated to be proportionate to the percent of OGMAs which are established in the THLB.

4.2 OGMA Age Classes: In the Slim Landscape Unit there is insufficient old forest in the ESSFwk1 variants to meet the old growth targets. The lack of age class 9 is probably an indication that the inventory is not accurate or that these stands do not naturally attain the age suggested in the Biodiversity Guidebook. This is an issue for the ESSF in most LUs in the Prince George Forest District. Most OGMAs were identified in age class 8. Age class 8 indicates adequate old growth attributes for the ESSF.

4.2 OGMA Summary: An area summary by OGMA is provided in Table 4 on the following pages.