

Preamble

This order establishes landscape biodiversity objectives, across the Prince George Timber Supply Area, for:

- A. old forest retention;**
- B. old interior forest; and,**
- C. young forest patch size distribution.**

These objectives were developed using current scientific information with respect to the natural range of variability within this geographic area. They are designed to balance the requirements of environmental and economic sustainability, while considering the expected impacts of the current mountain pine beetle infestation.

These objectives will be periodically updated to incorporate new knowledge and address changing environmental economic and social conditions.

In ensuring that their plans are consistent with the objectives of this Order, licensees and BC Timber Sales, should consider the Implementation Policy, which supports this Order.

**Order Establishing Landscape Biodiversity Objectives
for the Prince George Timber Supply Area
October 20, 2004**

Order

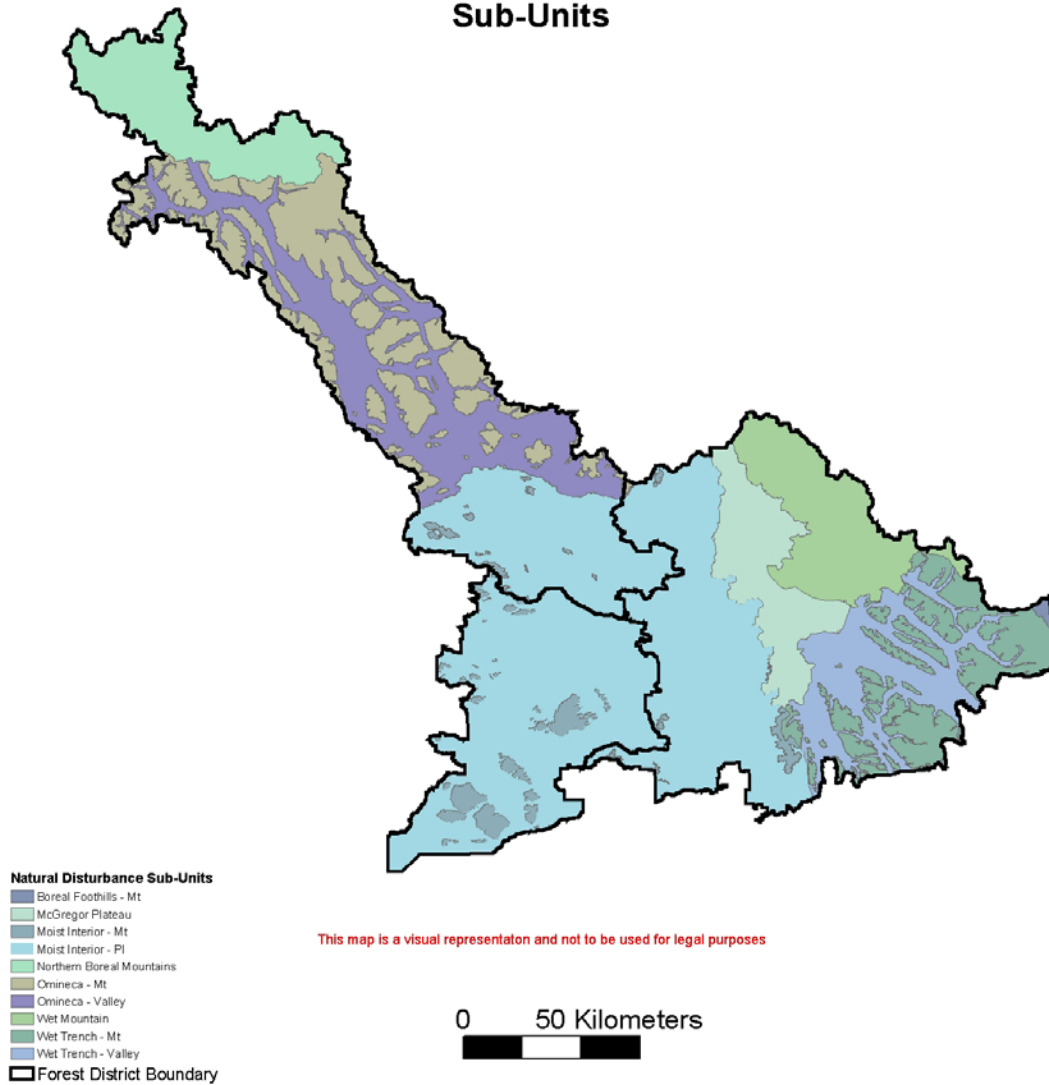
I. Pursuant to section 4(1) of the *Forest Practices Code of British Columbia Act* (the Act), landscape units are established for the Prince George Timber Supply Area, as per Map #2 (Merged Biogeoclimatic Units).

II. Pursuant to section 4(2) of the Act, the following objectives A through D are established as per Map #1(objective C) and Map #2 (objective A and B).

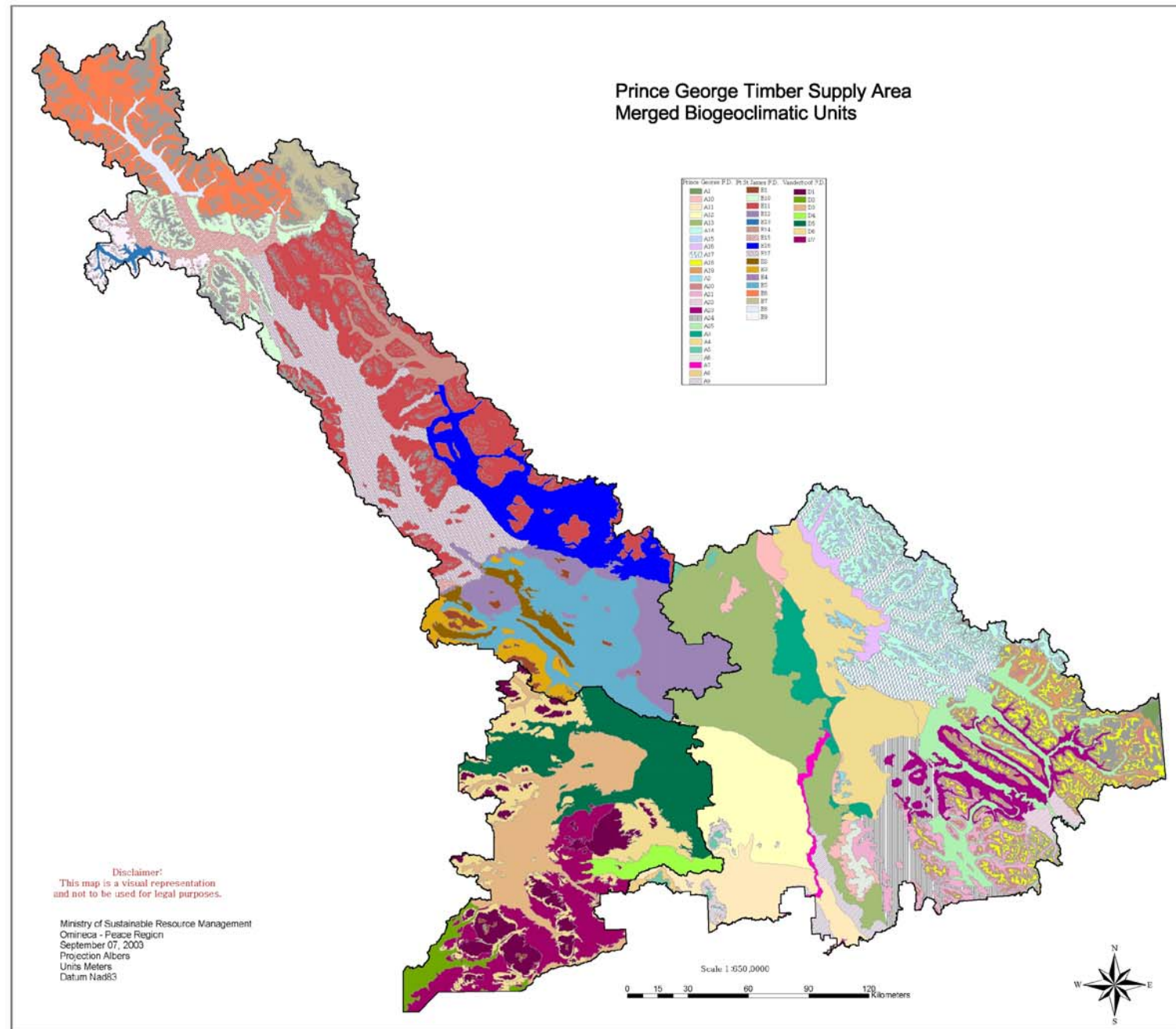
III. These objectives apply to all Crown land in the Prince George Timber Supply Area (TSA), and do not apply to the lands covered by woodlot licences, tree farm licences or community forests licences. These objectives replace objectives established in the Order Establishing Provincial Non-Spatial Old Growth Order (June 30, 2004) for this area.

MAP #1

**Map #1
Prince George
Timber Supply Area
Natural Disturbance
Sub-Units**



MAP #2



A. Old Forest Retention Objective

Maintain old forest on the Crown Forest Land Base (CFLB) by merged biogeoclimatic (mBEC) unit (Map #2), in accordance with Tables 1 to 3 and subject to section D.

Table 1. Vanderhoof Forest District Old Forest Retention Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the CFLB retained as Old Forest
D1	Moist Interior - Mountain	ESSF mv1, ESSF.mvp1, ESSF xv1	29
D2	Moist Interior - Plateau	SPBS mc	17
D3	Moist Interior - Plateau	SBS dk	17
D4	Moist Interior - Plateau	SBS dw2	12
D5	Moist Interior - Plateau	SBS dw3	17
D6	Moist Interior - Plateau	SBS mc2, MS xv	12
D7	Moist Interior - Plateau	SBS mc3	12

A. Old Forest Retention Objective (continued)

Table 2. Fort St. James Forest District Old Forest Retention Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the CFLB retained as Old Forest
E1	Moist Interior Mountain	ESSF mv1, ESSF mvp1, ESSF mv3	41
E2	Moist Interior Plateau	SBS dk	17
E3	Moist Interior Plateau	SBS mc2	17
E4	Moist Interior Plateau	SBS mk1, SBS wk3,	12
E5	Moist Interior - Plateau	SBS dw3	12
E6	Northern Boreal Mountains	ESSF wvp, ESSF mcp, ESSF mc, ESSF wv	37
E7	Northern Boreal Mountains	SWB mks, SWB mk	37
E8	Northern Boreal Mountains	SBS mc 2	26
E9	Omineca - Mountain	ESSF wvp, ESSF wv, ESSF mcp	58
E10	Omineca - Mountain	SWB mks, SWB mk, ESSF mc	41
E11	Omineca - Mountain	ESSF mvp3, ESSF mv3	41
E12	Omineca – low elevation	SBS dk, SBS dw3	16
E13	Omineca - low elevation	ICH mc1	23
E14	Omineca - low elevation	BWBS dk1	16
E15	Omineca - low elevation	SBS mc2	16
E16	Omineca - low elevation	SBS mk1	16
E17	Omineca - low elevation	SBS wk3	16

A. Old Forest Retention Objective (continued)

Table 3. Prince George Forest District Old Forest Retention Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the CFLB retained as Old Forest
A1	Boreal Foothills - Mountain	ESSF wcp3, ESSF wc3, ESSF mvp2, ESSF mv2	33
A2	McGregor Plateau	EESF wc3, ESSF wk2, ESSF wk1	26
A3	McGregor Plateau (combined with A13)	SBS mk1, SBS mh	12
A4	McGregor Plateau	SBS wk 1, SBS vk	26
A5	Moist Interior - Mountain, Omineca - Mountain	ESSF wk2, ESSF mv3, ESSF mv1, ESSF mv3	29
A6	Moist Interior - Mountain	ESSF wk1	29
A7	Moist Interior - Plateau	SBS mh	17
A8	Moist Interior - Plateau	SBS mc3, SBS mc2	12
A9	Moist Interior - Plateau	SBS mw	12
A10	Moist Interior - Plateau	SBS wk1	17
A11	Moist Interior - Plateau	SBS dw2, SBS dw1	12
A12	Moist Interior - Plateau	SBS dw3	12
A13	Moist Interior - Plateau, Omineca - Mountain	SBS mk1	12
A14	Wet Mountain	ESSF mvp2, ESSF wcp3, ESSF mv2, ESSF wk2	50
A15	Wet Mountain	ESSF wc3	84
A16	Wet Mountain	SBS wk1	26
A17	Wet Mountain	SBS vk	50
A18	Wet Trench – Mtn.	ESSF wcp3	80
A19	Wet Trench - Mountain	ESSF wcp3, ESSF mm1, ESSF mmp1, ESSF mvp2, ESSF mv2, ESSF wk2	48
A20	Wet Trench – Mtn.	ESSF wc3	80
A21	Wet Trench – Mtn.	ESSF wk1	48
A22	Wet Trench - Valley	ICH wk3	53
A23	Wet Trench - Valley	ICH vk2	53
A24	Wet Trench - Valley	SBS wk1, SBS mw, SBS mk1	30
A25	Wet Trench - Valley	SBS vk	46

B. Old Interior Forest Objective

Maintain a percentage of the old forest requirements specified in objective A as interior forest by merged biogeoclimatic (mBEC) unit (Map #2), in accordance with Tables 4 to 6 and subject to section D.

Table 4. Vanderhoof Forest District Old Interior Forest Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the Old Forest required in Tables 1 to 3 that must be Old Interior Forest
D1	Moist Interior - Mountain	ESSF mv1, ESSF mvp1, ESSF xv1	40 %
D2	Moist Interior - Plateau	SPBS mc	25 %
D3	Moist Interior - Plateau	SBS dk	10 %
D4	Moist Interior - Plateau	SBS dw2	25 %
D5	Moist Interior - Plateau	SBS dw3	10 %
D6	Moist Interior - Plateau	SBS mc2, MS xv	25 %
D7	Moist Interior - Plateau	SBS mc3	25 %

B. Old Interior Forest Objective (continued)

Table 5. Fort St. James Forest District Old Interior Forest Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the Old Forest required in Tables 1 to 3 that must be Old Interior Forest
E1	Moist Interior Mountain	ESSF mv1, ESSF mvp1, ESSF mv3	40 %
E2	Moist Interior Plateau	SBS dk	10 %
E3	Moist Interior Plateau	SBS mc2	10 %
E4	Moist Interior Plateau	SBS mk1, SBS wk3,	25 %
E5	Moist Interior - Plateau	SBS dw3	25 %
E6	Northern Boreal Mountains	ESSF wvp, ESSF mcp, ESSF mc, ESSF wv	40 %
E7	Northern Boreal Mountains	SWB mks, SWB mk	40 %
E8	Northern Boreal Mountains	SBS mc 2	25 %
E9	Omineca - Mountain	ESSF wvp, ESSF wv, ESSF mcp	40 %
E10	Omineca - Mountain	SWB mks, SWB mk, ESSF mc	40 %
E11	Omineca - Mountain	ESSF mvp3, ESSF mv3	40 %
E12	Omineca - low elevation	SBS dk, SBS dw3	25 %
E13	Omineca - low elevation	ICH mc1	40 %
E14	Omineca - low elevation	BWBS dk1	25 %
E15	Omineca - low elevation	SBS mc2	25 %
E16	Omineca - low elevation	SBS mk1	25 %
E17	Omineca - low elevation	SBS wk3	25 %

B. Old Interior Forest Objective (continued)

Table 6. Prince George Forest District Old Interior Forest Requirements

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (mBECs)	Minimum percent of the Old Forest required in Tables 1 to 3 that must be Old Interior Forest
A1	Boreal Foothills - Mountain	ESSF wcp3, ESSF wc3, ESSF mvp2, ESSF mv2	40 %
A2	McGregor Plateau	EESF wc3, ESSF wk2, ESSF wk1	40 %
A3	McGregor Plateau	SBS mk1, SBS mh	25 %
A4	McGregor Plateau	SBS wk 1, SBS vk	10 %
A5	Moist Interior - Mountain, Omineca - Mountain	ESSF wk2, ESSF mv3, ESSF mv1, ESSF mv3	40 %
A6	Moist Interior - Mountain	ESSF wk1	40 %
A7	Moist Interior - Plateau	SBS mh	10 %
A8	Moist Interior - Plateau	SBS mc3, SBS mc2	25 %
A9	Moist Interior - Plateau	SBS mw	10 %
A10	Moist Interior - Plateau	SBS wk1	25 %
A11	Moist Interior - Plateau	SBS dw2, SBS dw1	25 %
A12	Moist Interior - Plateau	SBS dw3	10 %
A13	Moist Interior - Plateau, Omineca - Mountain	SBS mk1	25 %
A14	Wet Mountain	ESSF mvp2, ESSF wcp3, ESSF mv2, ESSF wk2	40 %
A15	Wet Mountain	ESSF wc3	40 %
A16	Wet Mountain	SBS wk1	25 %
A17	Wet Mountain	SBS vk	25 %
A18	Wet Trench – Mountain	ESSF wcp3	40 %
A19	Wet Trench - Mountain	ESSF wcp3, ESSF mm1, ESSF mmp1, ESSF mvp2, ESSF mv2, ESSF wk2	40 %
A20	Wet Trench - Mountain	ESSF wc3	40 %
A21	Wet Trench - Mountain	ESSF wk1	40 %
A22	Wet Trench - Valley	ICH wk3	40 %
A23	Wet Trench - Valley	ICH vk2	40 %
A24	Wet Trench - Valley	SBS wk1, SBS mw, SBS mk1	10 %
A25	Wet Trench - Valley	SBS vk	25 %

C. Young Forest Patch Size Distribution Objective

Demonstrate a trend toward the young forest patch size distribution by Natural Disturbance Sub-unit (Map #1) within each Forest District as per Table 7 and subject to section D.

Table 7. Young Forest Patch Size Distribution

Natural Disturbance Sub-unit	Percent of Young Forest for each patch size category			
	>1000 hectares	101 -1000 hectares	51 – 100 hectares	<50 hectares
McGregor Plateau	40	45	5	10
Moist Interior - Mountain	40	30	10	20
Moist Interior - Plateau	70	20	5	5
Northern Boreal Mountains	60	30	5	5
Omineca - Mountain	40	30	10	20
Omineca - Valley	60	30	5	5
Wet Mountain	10	60	10	20
Wet Trench - Mountain	10	60	10	20
Wet Trench - Valley	10	60	10	20

D. Contributions, Interpretations and Alternatives

D.1. Contributions from Old Growth Management Areas (OGMAs) and Parks

OGMAs and their associated objectives established prior to the enforcement of this order will continue. The entire area of these OGMAs and any new spatially located old forest retention areas established after the enforcement of this order will contribute to meeting the Old Forest Retention and the Old Interior Forest objectives of this order.

Parks and protected areas may contribute to meeting the objectives of this order.

D.2. Merged Biogeoclimatic Units (mBEC) that overlap Forest District Boundaries

For the purposes of the Old Forest Retention and the Old Interior Forest objectives of this order, where a forest licensee has similar mBECs in multiple forest districts, licensees and BC Timber Sales, may meet the combined requirement of those objectives over the combined area of the mBECs.

D.3. Epidemic or Catastrophic Events

A representative portion of stands that have been affected by an epidemic or catastrophic event may contribute to meeting the Old Forest Retention and the Old Interior Forest objectives. Due to the current Mountain Pine Beetle epidemic, licensees and BC Timber Sales must ensure a representative portion of stands that have not been affected by the epidemic (i.e. non-pine forest) are used to meet the Old Forest Retention and the Old Interior Forest objectives.

D.4. A Portion of Younger Age Classes

Where it can be demonstrated that equal or better conservation benefits would result, up to 20% of the Old Forest Retention and Old Interior Forest objectives may be comprised of younger age classes.

D.5. Alternatives to the Order

(a) Where either the old forest retention or the old interior forest objectives can not be achieved, with consideration of the timely and economic harvesting of timber rights, then a recruitment strategy must be submitted and complied with. The recruitment strategy must contain results or strategies that will result in a forest condition that is consistent with the objectives in the shortest time as is practicable, with consideration for the timely and economic harvesting of timber rights. The recruitment strategy must be submitted to and approved by the designate of the Minister of Sustainable Resource Management.

(b) Where the Young Patch Size Distribution objectives can not be achieved, a rationale must be submitted that contains results or strategies that will result in a forest condition that is consistent with the objective in the shortest time practicable, with consideration for the timely and economic harvesting of timber rights.

E. Effective Date and Future Orders

This Order comes into effect immediately.

For the purposes of the *Forest Practices Code of British Columbia Act*, all new forest development plans and all major amendments to forest development plans submitted following a date four months after the effective date of this Order must be consistent with the Order.

This Order does not affect any Category A cutblocks approved pursuant to the *Forest Practices Code of British Columbia Act* on or before the effective date.

For the purposes of the *Forest and Range Practices Act*, and despite subsection 16(2) of that Act, all forest stewardship plans submitted after the effective date must be consistent with this Order.

When a new order of the Minister or designate establishes old forest objectives, this Order will, on the effective date of the new order, cease to have effect for the area or areas specified in the new order.

Original Signed by Herb Langin, Oct 20th, 2004

Regional Director, Northern Interior Region
Ministry of Sustainable Resource Management

Implementation Policy

This policy applies to the application of the Order Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area. It is intended to provide guidance for the implementation of the order. It is not legally binding.

Definitions

“**Crown Forest Land Base**” means land which is Provincial publicly owned land which is forested. It has generally been divided into: non-contributing land base (e.g. parks, inoperable forest and environmentally sensitive areas); and, timber harvesting land base (i.e. suitable and available for timber harvesting). It does not include excluded land base, such as private land, federal land, municipal land and woodlots licenses.

“**Licensee**” means a party required to prepare a forest development plan under *the Forest Practices Code of B.C. Act* or a forest stewardship plan under the *Forest and Range Practices Act*.

“**Merged Biogeoclimatic Units**” means a grouping of Biogeoclimatic Units that were combined to facilitate implementation of the old forest objective. The grouping was based on similar ecological characteristics, size of unit and geographic location (see Map # 2).

“**Natural Disturbance Units**” mean geographic areas that are outlined in *Natural Disturbance Units of the Prince George Forest Region: Guidance for Sustainable Forest Management, by Craig DeLong, 2002* (see Map #1). These units are based on natural disturbance regimes which are the historic patterns (frequency and extent) of fire, insects, wind, landslides and other natural processes in an area.

“**Natural Forest Area**” means an area in the mountain pine beetle infested units which is in a stage of transition and could be in one or more of the following stages: old forest; dying forest; dead forest; or, young natural forest (which has not been harvested).

“**Old forest**” means >140 year old forest stands*, from available forest inventory sources, for all natural disturbance units with the exception of:

- the Moist Interior – plateau sub-unit – all biogeoclimatic variants; and,
- the Omineca Valley – SBSdk, SBSdw3, BWBSdk1, SBSmc2, SBSmk1; and,
- the McGregor Plateau – SBS mk1 and SBSmh;

where old forests be will considered to be those stands >120 years.

Definitions (continued)

“*Old Interior Forest*” means an area of ‘old forest’ or natural forest area’, which is buffered from younger age classes or disturbances. The revised methodology (June 22, 2005) for this objective uses the indicated buffered distance, as per the table below dependant on the age class and leading species in the adjacent stands:

	Adjacent Age Class	Buffer Distance
pine and deciduous leading stands	Not Satisfactorily Restocked (NSR) and 1-3	200 metres
	4-9	0 metres (as long as area is >200 m wide)
all other species - leading stands	NSR and 1-4	200 metres
	5-9	0 metres (as long as area is >200 m wide)

“*Young forest*” means forested areas which are between 0 and 20 years old.

* In the ICH units, it is realized that the definition of old forest requires more discussion. A process will be developed in 2004 to deal with this issue.

1. Natural Forest Areas (NFAs)

Due to the extraordinary situation of the Mountain Pine Beetle epidemic in the Prince George TSA, it is assumed there will be a deficit of live old forest in some units to meet the total retention requirement. For this reason, these “non-live” old forests called Natural Forest Areas will be used as a surrogate for old forest as a means of retaining important attributes for biodiversity conservation while considering operational reality. The intention is to allow a representative quantity of Natural Forest Area to fulfill the old forest retention requirement.

The intent is to maintain natural forest areas as a contribution to the old forest retention objective, into the future.

When considering Natural Forest Areas, the following combination of factors can be used as selection criteria:

- Remnant stands (patches) of live, old trees.
- Partially killed stands (patches) that still maintain the attributes of old forest.
- Mountain Pine Beetle killed stands (patches) containing snag attributes.

Once there is new information available to verify landscape condition and the extent of the Mountain Pine Beetle impact is fully realized, the interim measure for Natural Forest Areas, to ensure species representation, will be revisited.

A licensee that is affected by an epidemic or catastrophic event may ensure a representative portion of the stand is used to contribute to the Old Forest Retention and Old Interior Forest Objective by:

- (a) maintaining the percentage of live timber that contributes to meeting the objective that is in proportion to the percentage of the area that is not affected by the epidemic or catastrophic event, or
- (b) by following Tables 8-10.

Tables 8-10 provide a minimum retention for non-pine leading forests for old forest retention in the Moist Interior natural disturbance unit to encourage some live old forest to be present on the landscape once the current mountain pine beetle epidemic has run its course.

Table 8. Vanderhoof Forest District Retention for Non-pine leading forest.

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (BECs)	Minimum percent of the CFLB retained as Old Forest	Minimum percent of the CFLB retained as old non-pine leading forest
D1	Moist Interior - Mountain	ESSF mv1, ESSF mvp1, ESSF xv1	29	16
D2	Moist Interior - Plateau	SPBS mc	17	3
D3	Moist Interior - Plateau	SBS dk	17	5
D4	Moist Interior - Plateau	SBS dw2	12	2
D5	Moist Interior - Plateau	SBS dw3	17	5
D6	Moist Interior - Plateau	SBS mc2, MS xv	12	3
D7	Moist Interior - Plateau	SBS mc3	12	2

Table 9. Fort St. James Forest District Retention for Non-pine leading forest.

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (BECs)	Minimum retention % for Old Growth*	Minimum percent of the CFLB retained as old non-pine leading forest
E1	Moist Interior Mountain	ESSF mv1, ESSF mvp1, ESSF mv3	41	33
E2	Moist Interior Plateau	SBS dk	17	13
E3	Moist Interior Plateau	SBS mc2	17	10
E4	Moist Interior Plateau	SBS mk1, SBS wk3,	12	4
E5	Moist Interior - Plateau	SBS dw3	12	6

Table 10. Prince George Forest District Retention for Non-pine leading forest.

Unit Label	Natural Disturbance Unit (NDU)	Merged Biogeoclimatic Units (BECs)	Minimum retention % for Old Growth*	Minimum percent of the CFLB retained as old non-pine leading forest
A5	Moist Interior - Mountain, Omineca - Mountain	ESSF wk2, ESSF mv3, ESSF mv1, ESSF mv3	29	12
A6	Moist Interior - Mountain	ESSF wk1	29	28
A7	Moist Interior - Plateau	SBS mh	17	14
A8	Moist Interior - Plateau	SBS mc3, SBS mc2	12	1
A9	Moist Interior - Plateau	SBS mw	12	3
A10	Moist Interior - Plateau	SBS wk1	17	14
A11	Moist Interior - Plateau	SBS dw2, SBS dw1	12	2
A12	Moist Interior - Plateau	SBS dw3	12	4
A13	Moist Interior - Plateau, Omineca - Mountain	SBS mk1	12	6

2. Rationale for Spatially Located Old Forest Retention Areas

Where deemed necessary, Ministry of Sustainable Resource Management may require the establishment of spatially located old forest retention areas for the following reasons (but not limited to):

- Where information identifies the biological values on the landscape are jeopardised or at risk.
- Gaps in the ability to manage for and maintain the old growth values on the landscape.
- Inability to administer a coordinated aspatial old growth monitoring regime among the Prince George TSA timber licensees, BC Timber Sales Non-replaceable Forest Licenses (NRFLs) and other timber tenure types.

3. Interior Forest Condition

The purpose of an interior old forest objective is to provide a criterion for old forest and/or natural forest area that meets the needs of species that are old forest dependant and are adversely affected by edge. Through this objective, as well as old forest retention and patch size, we are attempting to emulate natural disturbance landscape patterns; realizing that we are unable to completely approximate the natural landscape patterns and characteristics established by fire in the past.

The interior old forest objective is a critical component of assessing the quality and values of the aspatial old forest objective.

The interior old forest objective must be managed with a temporal perspective (i.e. meeting the objective over time) and licensees and BC Timber Sales will have to demonstrate how, as stands age, the dynamics of interior old forest will change and be managed. It is anticipated that in the immediate future a critical part of the strategy will be to minimize fragmentation of mid-aged (60-100 year old) forest.

Buffering criteria for the calculation of Interior Old Forest - Revised Methodology:

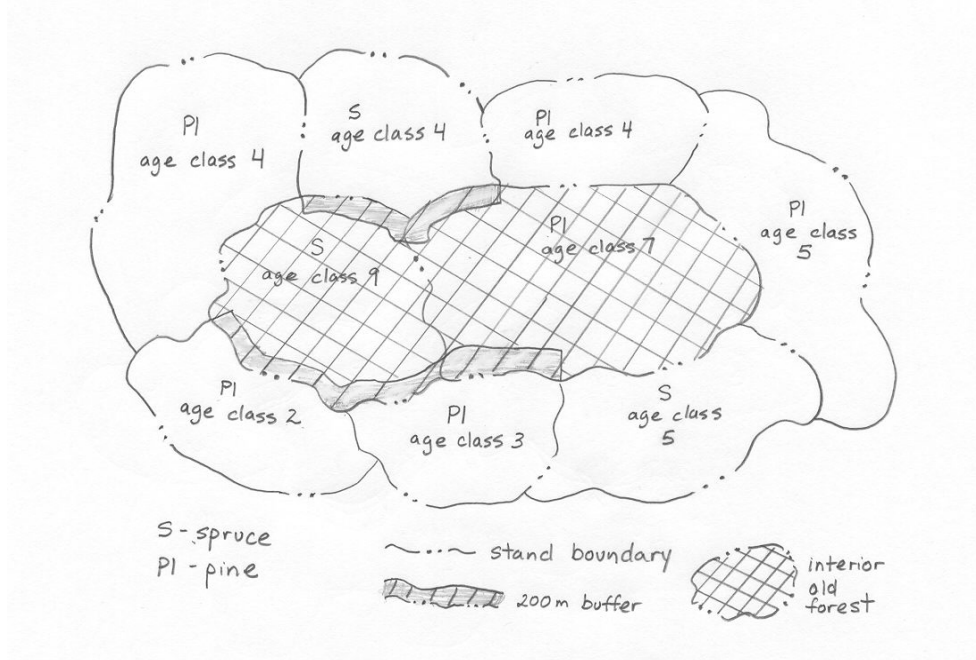
The methodology used for calculating old interior forest, during the development of the Landscape Biodiversity Objectives for the Prince George Timber Supply Area, was to exclude 200 metre buffer in the old forests that are adjacent to age classes less than 140 years (or 120 years in some mBEC units) and other disturbances. Through discussion with Forest Licensees, BC Timber Sales and the Provincial government (as represented through the Landscape Objective Working Group) it was discussed and agreed that it is appropriate to revise this methodology.

The revisions documented below were agree to at the June 22, 2005 Landscape Objective Working Group meeting.

“Old Interior Forest” means an area of ‘old forest’ or natural forest area’, which is buffered from younger age classes or disturbances. The revised methodology (June 22, 2005) for this objective uses the indicated buffered distance, as per the table below dependant on the age class and leading species in the adjacent stands:

	Adjacent Age Class	Buffer Distance
pine and deciduous leading stands	Not Satisfactorily Restocked (NSR) and 1-3	200 metres
	4-9	0 metres (as long as area is >200 m wide)
all other species - leading stands	NSR and 1-4	200 metres
	5-9	0 metres (as long as area is >200 m wide)

Illustration: Interior old forest buffering example in unit where old forest is >120 years old (e.g. Moist Interior – plateau sub-unit – SBS dw3)



2. A buffer of 200 metres extending from the edge of the old forest into the old forest, is excluded to calculating the amount of old interior forest for:
 - transportation corridors attributed to all primary access roads (e.g. Forest Service Roads),
 - pipelines,
 - railways, and
 - hydro transmission corridors.

No buffering is required to calculate the amount of old interior forest for transportation corridors attributed to secondary and tertiary roads.

4. Young Forest Patch Size Distribution

The purpose of the patch size objective is to create a pattern of young forest distributed across the landscape reflecting the pattern created by a natural disturbance regime. The objective and its strategies focus on the pattern of harvest development; however, for analysis purposes other natural processes which produce stand initiating events (e.g. fire) are also included as a “patch”.

In order for the intent of this objective to be achieved it is important to retain structural attributes in cutblocks by retaining wildlife tree retention and leave areas. Increased retention and larger areas of retention (> 10ha) are required in larger openings (> 500 ha). See guidance provided in DeLong (1999).

It is realized that we are not able to completely repeat the natural patterns and characteristics of habitat established by fire in the past. However, it is desirable to manage harvest patches to more closely emulate the patterns that occurred on the landscape when fire was the dominant disturbance agent. Management of the patch size objectives must also recognize that in some geographic areas of the Prince George Timber Supply Area, existing harvesting has impacted future harvesting patch size opportunities. For this reason, the percentages in Table 7 will not be able to be met, in the short to mid term, in some Natural Disturbance Units.

There will be circumstances where, due to other compelling forest management issues (e.g. forest health issues, visual quality objectives, etc.), trending toward the patch size distribution percentages is not possible. Where this is the case, a rationale will be provided to the Statutory Decision Maker who is in charge with reviewing the Forest Stewardship Plan (or Forest Development Plan).

4. Young Forest Patch Size Distribution (continued)

Analysis Steps for Patch Size	
1.	Identify all patches < 50 ha with and buffer by 75 m. <ol style="list-style-type: none">If any of these patches touches another patch that also has a 75 m buffer then they must be within 150 m. Merge these patches and de-buffer by 75 m.Assess all patch sizes in hectares. Identify all patches <50 ha and remove from further analysis.
2.	Identify all remaining patches >50 ha and buffer by 100 m. <ol style="list-style-type: none">Any patches touching must be within 200m. Merge and de-buffer.Identify all patches <100 ha and remove from further analysis.
3.	Identify all remaining patches >100 ha and buffer 200 m. <ol style="list-style-type: none">Any patches touching must be within 400m. Merge and de-buffer.Identify all patches <500 ha and remove from further analysis.
4.	Identify all remaining patches >500 ha and buffer by 300 m. <ol style="list-style-type: none">Any patches touching must be within 600m. Merge and de-buffer.Identify all patches <1000 ha and remove from further analysis.
5.	Identify all remaining patches >1000 ha and buffer by 400 m. <ol style="list-style-type: none">Any patches touching must be within 800m. Merge and de-buffer.
6.	Bring all of the coverage's created in steps 1-5 back into one coverage. Some of the smaller patches may now reside within the perimeter of the larger patches.

Figure 11: Standard analysis process used in the LOWG GIS exercise to spatially identify young patches in each NDU/BEC combination

5. Apportionment of Old and Natural Forest Areas between Licensees (including BC Timber Sales) in the TSA.

The Forest Licensees and BC Timber Sales within the Prince George Timber Supply Area have apportioned the objectives for old growth objectives according to the amount of old growth in licensee operating areas. A Memorandum of Understanding has been drafted between the licensees (including BC Timber Sales) to demonstrate how they are going to achieve the objectives.

A Reporting Protocol has been agreed to between the Forest Licensees / BC Timber Sales and the Government Agencies in July 2005. It is included in the “Backgrounder” document, as Appendix 10.

6. Roles and Responsibilities

Forest Licensees and BC Timber Sales:

- Prepare Forest Development Plans, Forest Stewardship Plans and recruitment strategies (initially these may be collaborative planning processes with MSRM and perhaps the MOF).
- Coordinate implementation.
- Participation with coordination group (e.g. replacement for Landscape Objective Working Group - maybe: Landscape Objective Implementation Group).

Ministry of Sustainable Resource Management:

- Endorse recruitment strategies may involve collaborative planning processes
- Provide advice and interpretation to agency staff related to the objectives and implementation policy
- Evaluate monitoring (compliance and effectiveness) information to assess required amendments to the objectives
- Participation with coordination group (e.g. Landscape Objective Working Group)

Ministry of Forests:

- Approval of Forest Development Plans and Forest Stewardship Plans.
- Compliance and Enforcement activities.

Other agencies (e.g. WLAP)

- Provide review and advice regarding the objectives and their implementation.

7. Adaptive Management Process

Adaptive management principles will apply to this process, with periodic monitoring of the objectives and strategies implementation. As a minimum, a review will coincide with Timber Supply Review process in the PG TSA.

Certain elements that are uncertain or require additional analysis could be the focus of the monitoring program.

Some of the elements of this order that could be reviewed and / or revised may include:

- Administrative boundaries;
- Demonstrated ability to perform in a coordinated effort;
- Natural Disturbance Unit's boundaries or old forest retention targets;
- Cumulative impact analysis for all biodiversity elements (patch size, old forest retention and interior forest condition);
- Interior Forest Condition methodology;
- Expression of Young Forest Patch Size Targets;
- Demonstrated ability to maintenance of quality old growth values on the landscape;
- Business case for the need for spatially located old forest retention areas;
- Inclusion of new and better inventory information; and,
- Age definition of old forest.

The current representative portion of non-pine forest for interior old forest is uncertain. It is believed that there may be a smaller percentage of non-pine leading forests that meet the interior old forest requirement than is indicated in Tables 8-10 (for old forest). Licensees and BC Timber Sales are to strive for a representative portion of the current portion for pine leading and non-pine leading forests. The benchmark for this measurement should be calculated, through the adaptive management framework.

Stand damaging events have, and will continue to, occur and adaptive management will be required to keep these objectives current.

It has been suggested that a group, similar to the Landscape Objective Working Group, would continue but have a mandate that focused on implementation, monitoring and recommending changes to these objectives.

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Patch Size Analysis prepared by Integrated Forestry Services – May, 2003

Timber Supply Analysis and Report prepared by Forsite Forestry Consulting (lead by Craig Robinson) – November 2003

Documents *Natural Disturbance Units of the Prince George Forest Region: Guidance for Sustainable Forest Management* and *Natural Disturbance Block, Design Workbook* can be located at: ftp://ftpfsj.env.gov.bc.ca/pub/outgoing/srm/planning/landscape_level/NDU_documentation/